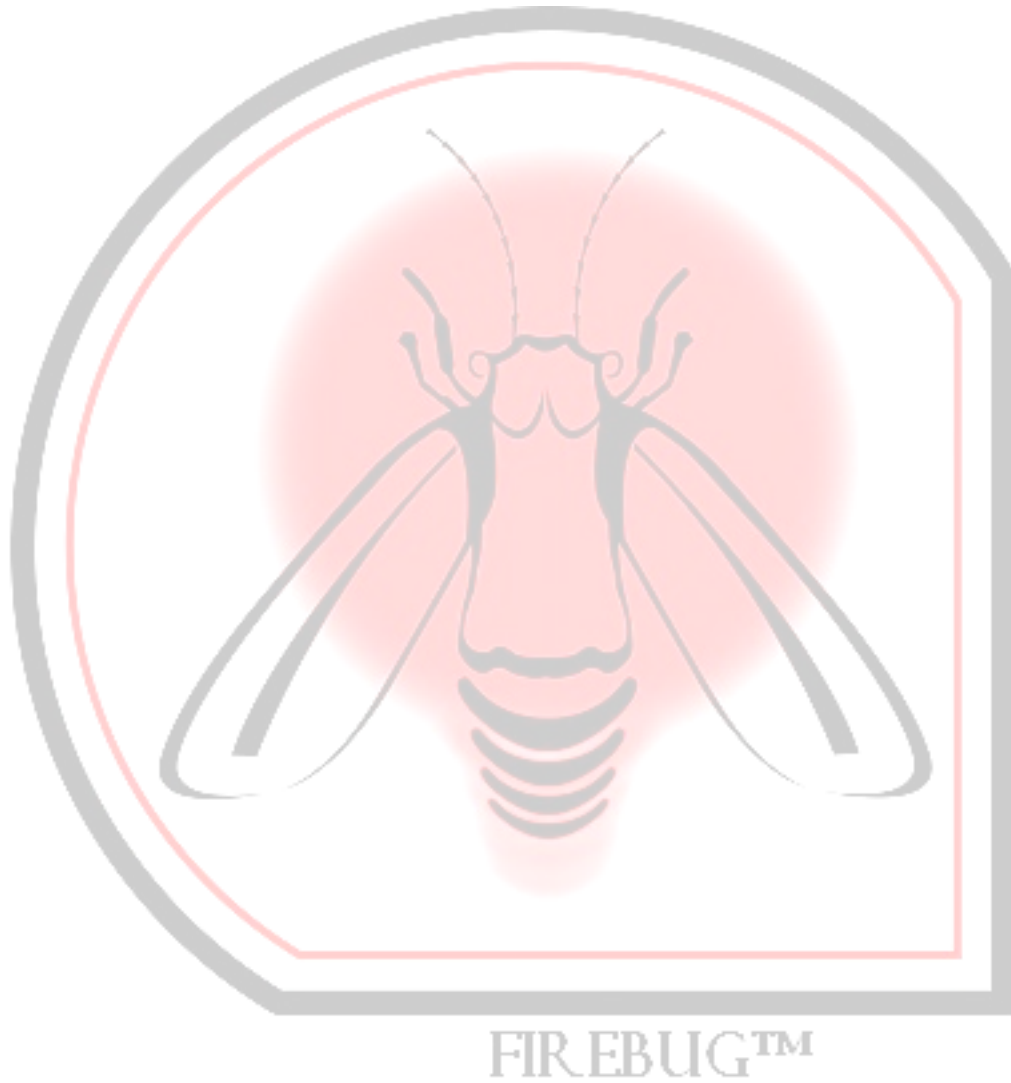


**White Paper:  
Inspecting Extinguishers with Barcodes**



Presented by:  
General Data Company, Inc.  
4354 Ferguson Drive  
Cincinnati, Ohio 45245  
1-844-643-1129

## **Overview:**

Safety professionals are increasingly finding the need to automate the inspection of fire and safety equipment. This need is driven by requirements for accurate inspection records. Entities such as The Joint Commission and OSHA want detailed information regarding the inspection and maintenance of safety devices.

In the past, in order to keep records, it required detailed hand written documents that were often translated into a report or spreadsheet. This method was both time consuming and prone to error.

The advent of barcode technology has provided a method to perform inspections by eliminating hand written data and adding an automated way to record inspection tasks.

This white paper will describe how a barcode inspection system is designed and what the components are. Firebug™ from Data Support, Inc. will be used as an example of an automated barcode inspection system.

## **First - a Word About Barcodes**

In order to understand how a barcode inspection system works, we need to understand how barcodes work. For a quick understanding, think of bar codes as visual Morse Code. Digital "1's" and "0's" are printed as the dashes and dots of a special Morse Code. If you look at a very thin slice of barcode, you'll see wide and narrow bars. In reading the barcode, the scanner's red beam is absorbed by the dark areas of the bars and reflected by the light areas between bars.

For an inspection system like Firebug™, barcodes are simply a tracking number. Each device has a unique barcode tracking number associated with it. Think of the barcode like the license plate number on your car. By itself, the license number is simply a combination of numbers and alpha characters. In the Department of Motor Vehicles database, that unique license plate is associated with the owner, make, model, year and more.

The same is true with the barcode on an extinguisher or other safety device. The barcode is a tracking number but associated with it in the system database is the device type, manufacturer, model, inspection history and more.

Scanning a barcode is the fastest and most accurate way to enter data into a system.

In Firebug™, the barcodes are used to identify each device and, in most cases, to identify the location.

### **Components Needed for an Automated Inspection system**

A typical barcode inspection system has three main components.

Labels:

The barcode labels can be constructed of many materials depending on the environment where the safety device is stored. A good poly material label with an aggressive adhesive works best in most environments. These can be pre-printed (most common) on rolls ready for use or they can be printed on demand using the proper label printer and software. The important feature is that every label must be unique.



Portable Hand Held Devices:

A key feature of a barcode safety device inspection system is the portable device used to record inspections. These are hand held computers that include a calendar and clock functionality. The device has an operating system much like any computer and most work with on screen graphics that can be activated with a pen like stylus.

Typically, the device includes an integrated laser barcode scanner. It can communicate with the system when placed in a desktop cradle and USB cable. Communication can also be wireless if available.

Durability is an issue to consider with the portable device. In Firebug™, the Motorola MC55 (Pictured) is a common choice since it is rated to perform despite multiple drops.

Installed on each mobile device is the inspection software needed to record safety device activity. A log-in screen tells this system who is performing the inspection, the calendar and clock records when it occurred. Scanning the barcode for the location tells the system where the inspection occurred. Finally, by scanning the barcode on the device, we know which one is being inspected.



Motorola MC55

## Software:

The screenshot displays the Firebug™ Main Screen interface. At the top, there are buttons for Find, Save, Delete, and Clear. Below these are buttons for Move, Inspect, History, Notes, and Excel. A sidebar on the left lists 'Required Fields'. The main area is divided into several sections:

- Device Information:** Tag ID: NHCO004, Device Type: Extinguisher, Manufacturer: Amarex, Model: 330, Serial Number: 23984283505, Vendor: PFES, Agent: CO2, Assigned Location: NHC-L003.
- Customer:** DSI
- Location Information:** Site: Naval Health Clinic, Building: Brigade Medical, Description: Waiting Rm.
- Inspection Data:** Rating: BC, Initial File Date: 3/6/2012, Size: 10 Lb., Last Activity Date: 3/7/2012.
- Inspection Due Dates:** Daily, Weekly, Monthly (4/7/2012), Quarterly, 6 Month, Annual (6/21/2012), 5 Year, 6 Year (6/07/2016), 10 Year, 12 Year.
- View Options:** View Daily, View Weekly, View Monthly, View Quarterly, View 6 Month, View Annual, View 5 Year, View 6 Year, View 10 Year, View 12 Year.
- Inspection Information:** Last Inspection Date: 3/7/2012, Inspection Result: PASSED, Status Code: Bracket Broken, Hose Defective, Low Pressure, No Pressure, Palmetto Pressure, Rusted Container.

**Firebug™ Main Screen**

The desktop software is the place where all the inspection data and history is kept and displayed. In Firebug™, the software can be installed on a single computer, on an internal network, on a wide area company intranet or over the internet. In any case, the software includes the database and an organized way to maintain inspection tasks and records.

Each fire and safety device is a unique record in the software. You can have a quick view of the device information, scheduled inspection dates, history and notes related to that specific device.

In the software you are able to generate reports, add new devices, add users, add locations, schedule inspection routes and more

The portable terminal also runs software that is linked to the data on your computer.

## **Barcode Inspections**

Once all the components are in place and the data has been entered into the system, you can now schedule inspections. This can be done in Firebug™ by scheduling inspection routes.

A route is a list of locations and the expected devices scheduled to be inspected at those locations. The purpose of building a route is to organize the locations to make it easy for the technician to complete the inspections most efficiently. Another, and more important, purpose is to ensure that the technician does not miss an item to be inspected.

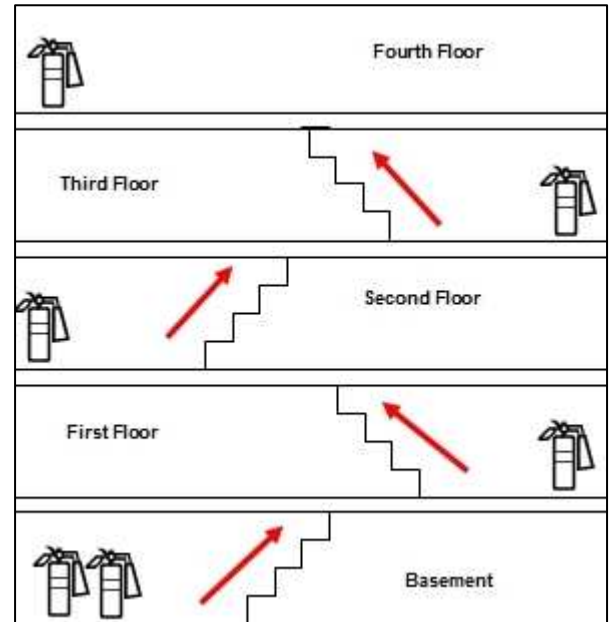
A typical inspection routine would include the technician first recording the location by either scanning the location barcode or entering the location on the portable device. Since extinguishers are moveable, it is important to comply with NFPA standards that the location of the inspection is noted.

Once the location is recorded, the technician would then scan the individual device to be inspected. Once this is scanned in Firebug™, the technician is then presented with a screen to record the results of the inspection. By using a stylus, they would simply need to check a “Pass” or “Fail” box. Firebug™ also gives you the option to record “Status Codes”, which are checkboxes to record additional conditions regarding that device.

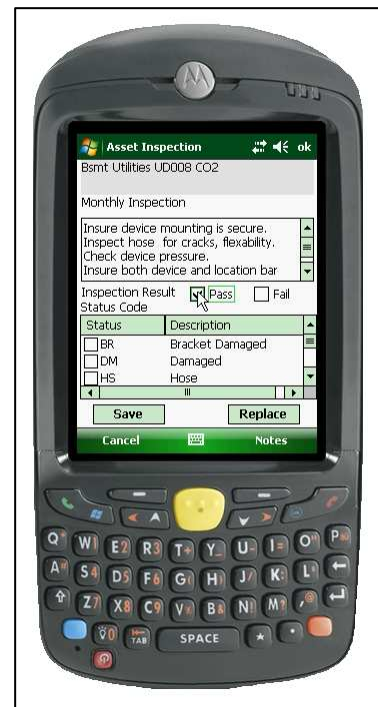
As each location and device is inspected, it is removed from the list. A technician cannot close out a route unless every device is accounted for.

Once the inspection is completed, the system will auto-calculate when the next inspection is to be completed.

The same functionality would apply for monthly, six month, quarterly, annual, five year, six year and 12 year inspections



**Inspection Route**



**Inspection Result**

## **Reports**

A well designed barcode extinguisher and safety device inspection system comes with many standard reports. Firebug™ includes the following reports

### **Detail/Summary Report by Item**

Report shows detailed or summary inventory information for all safety devices.

### **Detail/Summary Report by Location**

Report shows detailed or summary inventory information for safety devices grouped by location.

### **Inspection Due By Location or By Building**

Report shows which inspections are due for a specific period of time grouped by location or by building

### **Inspection Past Due By Location or By Building**

Report shows inspection that have been missed, grouped by location or by building

### **5, 6 and 12 Inspection Due**

Report shows 5, 6 and 12 inspection due grouped by building for a specific period of time. (Best for budget planning)

### **Transaction Reports**

Reports shows detailed or summary of any "Add", "Move", "Inspect" transaction performed on each safety device for a specific period of time.

### **Inspection Transactions Reports**

Reports shows detailed inspection results, sorted by multiple fields and periods of time for each safety device. This is the key inspection report

### **Route Reports**

Reports shows which locations and items are included in routes.

## **Review**

Implementing a barcode system to perform inspections of fire and safety equipment includes three technologies; barcode labels, portable devices and software. Partnering with an experienced system company can assist you to make the transition easier. While the initial startup takes some effort, the ongoing use of the system will save significant time and ensure you can quickly document all your inspections.

Please feel free to contact us at General Data Company, Inc. if you would like our assistance.

<https://www.general-data.com/firebug>

1-844-643-1129

talktous@general-data.com

Thank You.