



TapRoot®  
ROOT CAUSE ANALYSIS

# TapRoot® VI Software Quick Start Guide

TapRoot® Technical Support:  
Monday – Friday: 7am – 6pm EST  
Phone: 001 (865) 357-0080  
Email: [support@taproot.com](mailto:support@taproot.com)



- Two available Process Flows; “Basic” or “Major”
- The user can toggle between the two based on their needs
- “Basic” can be used for Low- to Medium-Risk incidents and uses a simplified TapRoot® Process Flow
- “Major” can be used for High-Risk incidents needing a full investigation using the full TapRoot® 7-Step Process Flow



- The software automatically saves changes that are made on each and every screen removing the need for “Save” Buttons
- Tools such as SnapCharT®, the Root Cause Tree®, and the Corrective Action Tools are brought up in a new window. The main application window will remain open in the background
- The optional TapRoot® techniques are now accessed from inside the SnapCharT® rather than the process flows (optional techniques are not covered in this document)
- The user has options for “SMARTER” or “Simple” corrective action tools



- The application is Web-based and can be used with all major browsers (Chrome, IE, Firefox, Safari) from either a PC or Mac platform. You can also use on mobile devices
- The user will first have to log in by entering the URL for the software and then inputting the username and password



TapRoot®  
ROOT CAUSE ANALYSIS

User Name

Password

[Sign In](#)

[Forgot User Name or Password?](#)

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- After Login the user can see and access any investigations or action plans entered
  - This provides access to all Navigation and System Functions

System  
Navigation

Access to  
Investigations

| Name                     | Type - Phase            | Created By | Incident Date | Last Modified |
|--------------------------|-------------------------|------------|---------------|---------------|
| Fire Extension           | Investigation - Analyze | Ange Comer | Jul 13 2018   | Today         |
| Oil Spill                | Investigation - Plan    | Ange Comer | Feb 07 2018   | Today         |
| Hazardous Spray          | Investigation - Plan    | Ange Comer | Oct 19 2017   | Dec 06 2017   |
| Equipment Failure on Rig | Investigation - Plan    | Ange Comer | Nov 11 2015   | Nov 13 2017   |
| Gas Accident             | Investigation - Plan    | Ange Comer | Nov 07 2017   | Nov 08 2017   |
| Employee Accidents       | Action Plan             | Ange Comer | Nov 08 2017   | Nov 08 2017   |

Right panel:

System Notifications

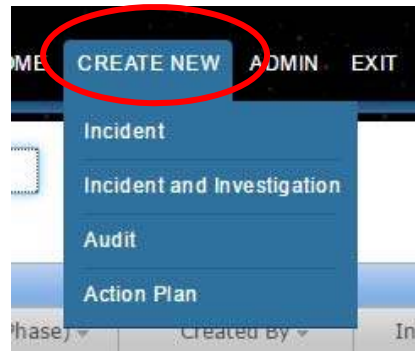
Quick Start Guide

Responsible  
Tasks and  
Corrective Actions



# Creating an incident

- Select the Create New Menu at the Top of the Page



- You have the following options
  - Create an Incident (without TapRoot® Investigation) for tracking
  - Create an Incident with Investigation (most likely)
  - Create an Audit
  - Create an Action Plan to track fixes independent of an investigation



- Choose your selection from the menu:



- You will now be prompted for some basic information (Name, Date, Time, Location and Classification, Summary)

A screenshot of the TapRoot application's 'Investigation' form. The form is titled 'Investigation' and has a 'Details' tab. It contains several input fields: 'Name' (with a red asterisk and a help icon), 'Incident Date' (with a red asterisk and a help icon), 'Incident Time' (with a red asterisk and a help icon), 'Location' (with a red asterisk and a help icon), 'Classification' (with a red asterisk and a help icon), and 'Summary' (with a red asterisk). There are also 'Create' and 'Cancel' buttons at the bottom right.



- Type the Incident Description in the Name Field  
select the Date. Simply click in the date field and you will receive a Calendar to select the Date


Incident Date\*

Incident Time

Location\*

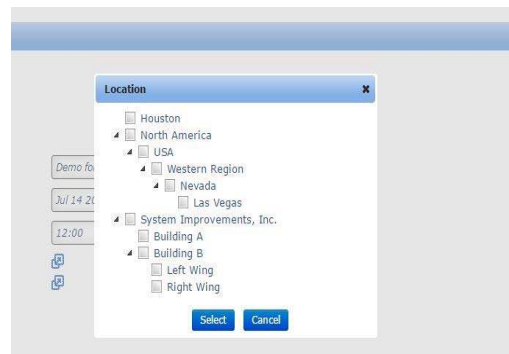
Classification\*

Summary\*



| Su | Mo | Tu | We | Th | Fr | Sa |
|----|----|----|----|----|----|----|
|    |    |    |    |    | 1  | 2  |
| 3  | 4  | 5  | 6  | 7  | 8  | 9  |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 |    |    |    |    |    |    |

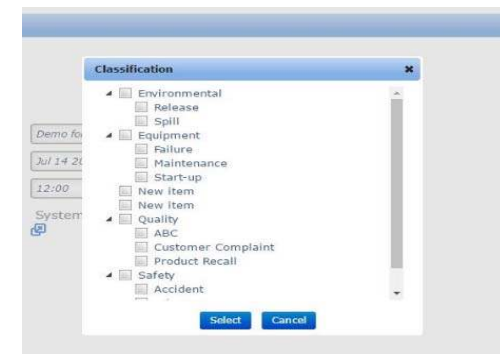
- Next select both a Location and Classification by selecting the symbol next to either title



Location

- ☐ Houston
- ☒ North America
  - ☒ USA
    - ☐ Western Region
      - ☐ Nevada
        - ☐ Las Vegas
  - ☒ System Improvements, Inc.
    - ☐ Building A
    - ☒ Building B
      - ☐ Left Wing
      - ☐ Right Wing

Select Cancel



Classification

- ☐ Environmental
  - ☐ Release
  - ☐ Spill
- ☒ Equipment
  - ☐ Failure
  - ☐ Maintenance
  - ☐ Start-up
- ☐ New Item
- ☐ New Item
- ☐ Quality
  - ☐ A.B.C.
  - ☐ Customer Complaint
  - ☐ Product Recall
- ☒ Safety
  - ☐ Accident

Select Cancel





- Put a checkmark by the appropriate Location and choose the Select button. Perform the same operation for the Classification item. (Classifications will allow you to select multiple items)
- Next Enter a Summary (Executive Summary) to describe the incident with details
- To finalize the process select the Create Button at the bottom of the Screen
- Locations and Classifications can be added from the admin tab

The screenshot displays the TapRoot web application interface. At the top, the TapRoot logo and navigation links (HOME, CREATE NEW, ADMIN, TRENDS, EXIT) are visible. Below the navigation bar, the 'Investigation' tab is selected, and the 'Details' sub-tab is active. The form contains the following fields:

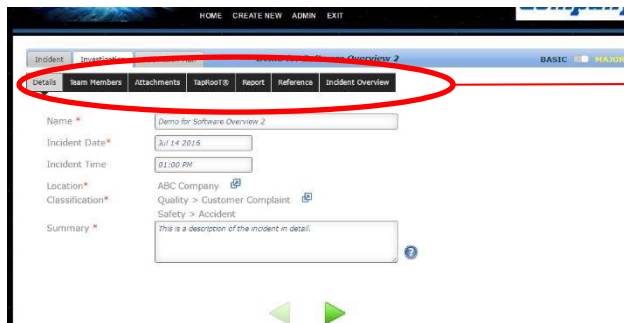
- Name \*
- Incident Date \*
- Incident Time
- Location \*
- Classification \*
- Summary

At the bottom of the form, the 'Create' and 'Cancel' buttons are highlighted with a red circle.



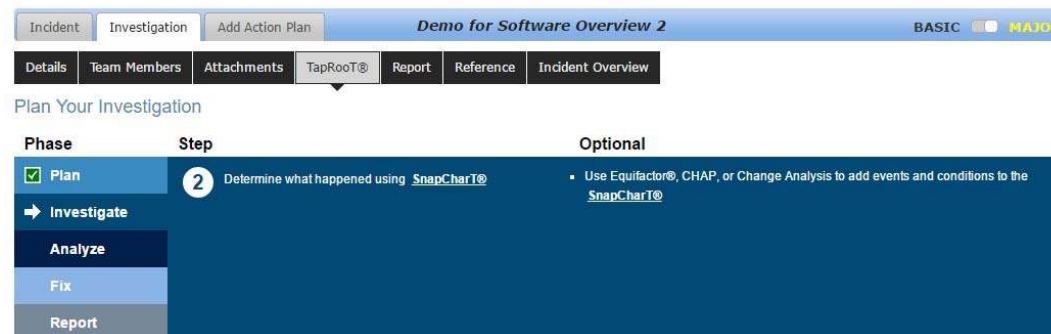
## Navigating during your investigation

Once you have created an investigation you can now perform additional functions



Add Team Members, Attachments, Use the TapRoot® Tools to Investigate and Create Corrective Actions, Produce Reports. There is also the ability to create Custom Tabs (not covered in this document)

- Let's Select the TapRoot® Tab to begin our Investigation





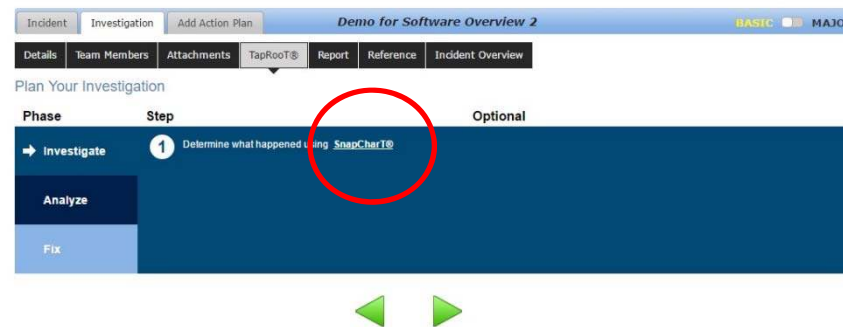
- The first step is to decide on either a Basic or Major Investigation (as described earlier in this document) using the selector in the upper right corner of the TapRoot® tab screen
- For this document click on the selector to change it to Basic providing the Basic TapRoot® Model Shown below:



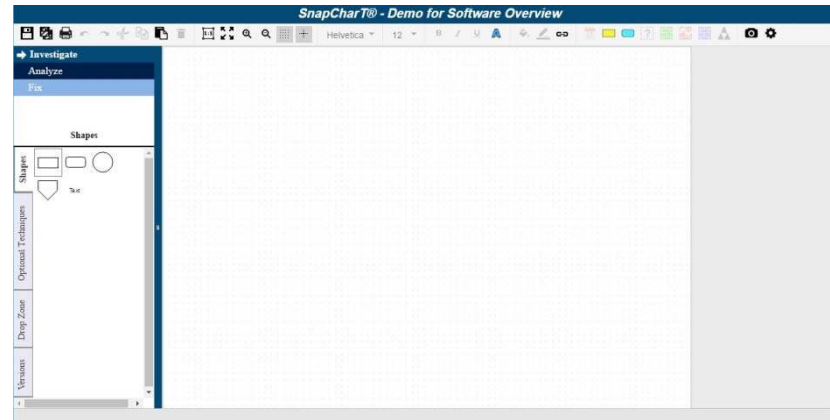


# Finding out “What Happened”

- The first technique we are prompted to use is the SnapCharT® to document all the data we are collecting. Select the SnapCharT® Link in step 1



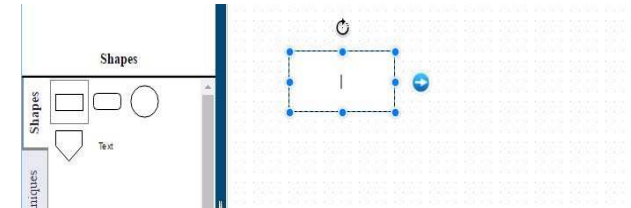
- This will open up the SnapCharT® Editor



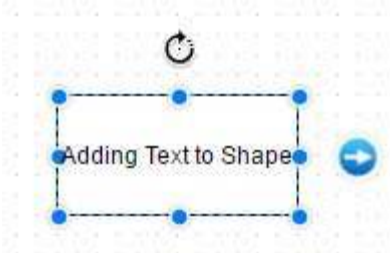


# Adding Shapes and Text

- To begin, select a shape from the shapes tab and either click and drag the shape on to the chart, or select the shape and then double-click on the chart to add the shape



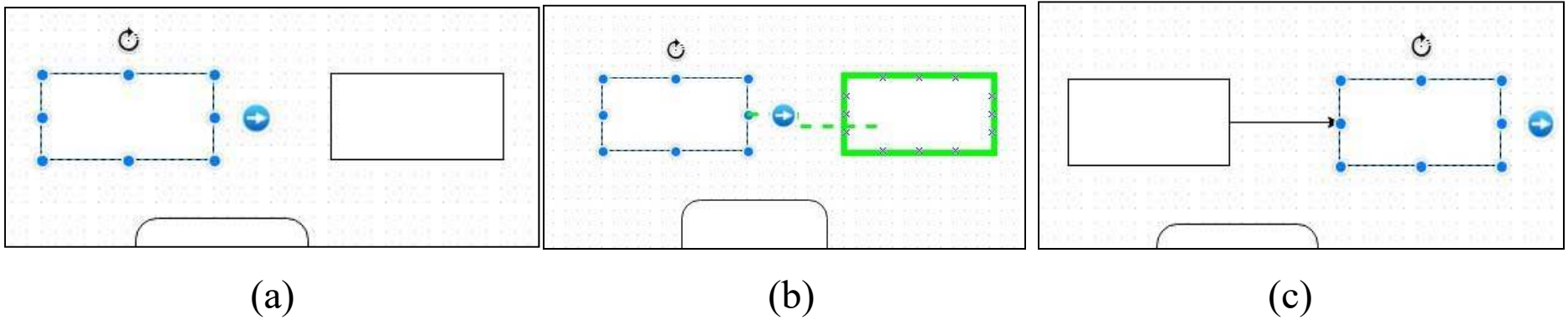
- You can then immediately begin typing text into the shape. When done with the text repeat the same functions to add additional shapes



- The chart will grow to the right and down as shapes are added
- To remove a shape, click on it and hit the “delete” key on keyboard



- To Connect shapes, click on the Blue Arrow to the right of the Shape you are connecting from (a) and drag (b) from that shape into the shape you are connecting to, then release to connect the shapes (c)

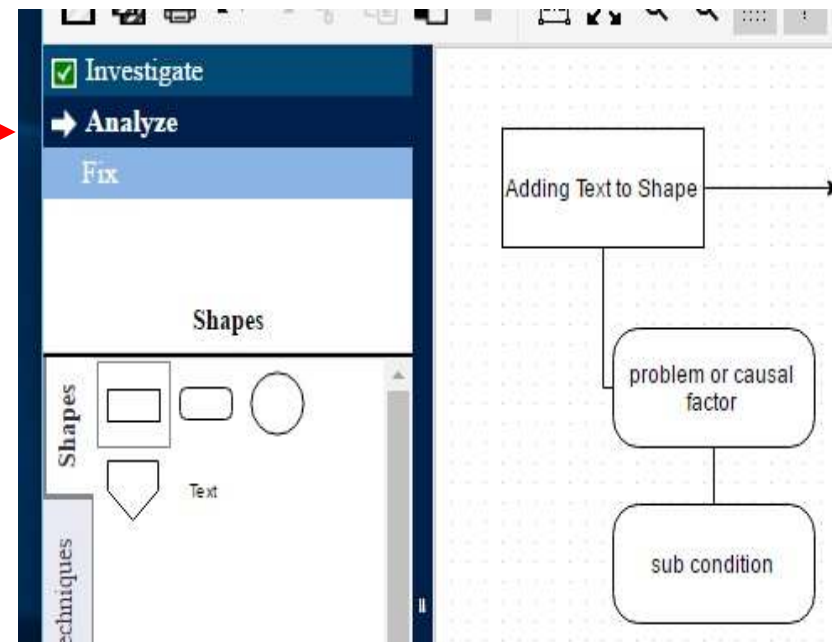
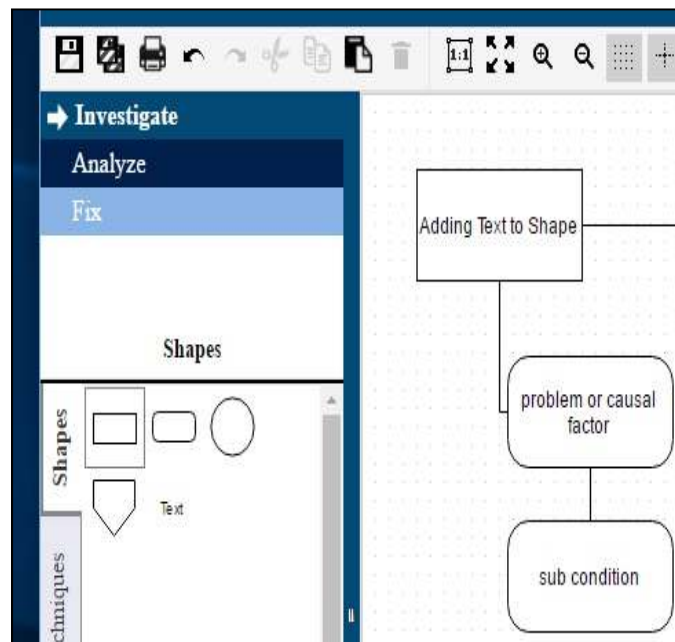


- To remove a line, simply click on it and hit the “Delete” key on your keyboard




# Creating Causal Factors

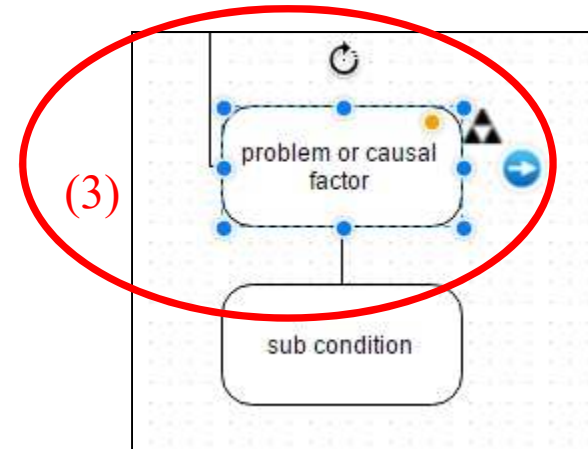
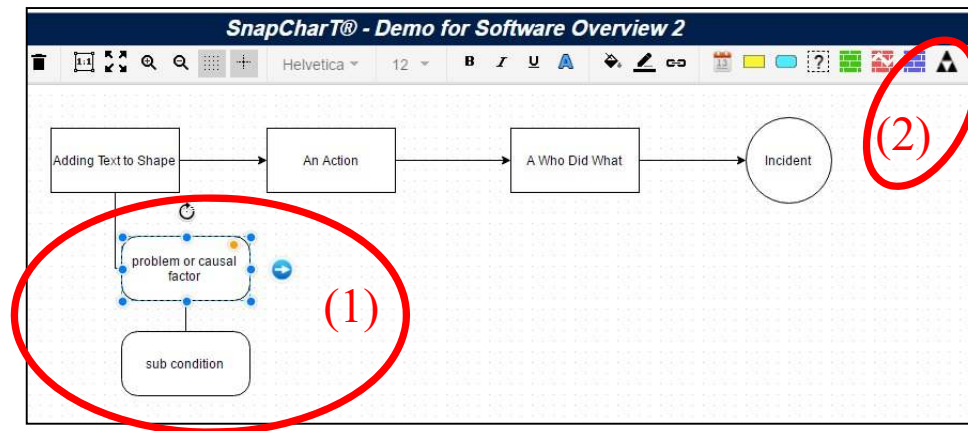
- Once you have completed your SnapCharT® and are ready to mark your Causal Factors you will need to change the phase of the investigation from “investigate” to “analyze.” This can be done in the upper left corner of the SnapCharT® window by clicking on the word “analyze”







- Now you can identify Causal Factors on the SnapCharT® by using the Causal Factor symbol
  - First select the shape that is one of your Causal Factors by clicking on the shape (1)
  - Select the CF symbol icon in the upper right (2) 
  - Now the shape will be marked as a Causal Factor and recognized by the application as needing a Root Cause Analysis (3)

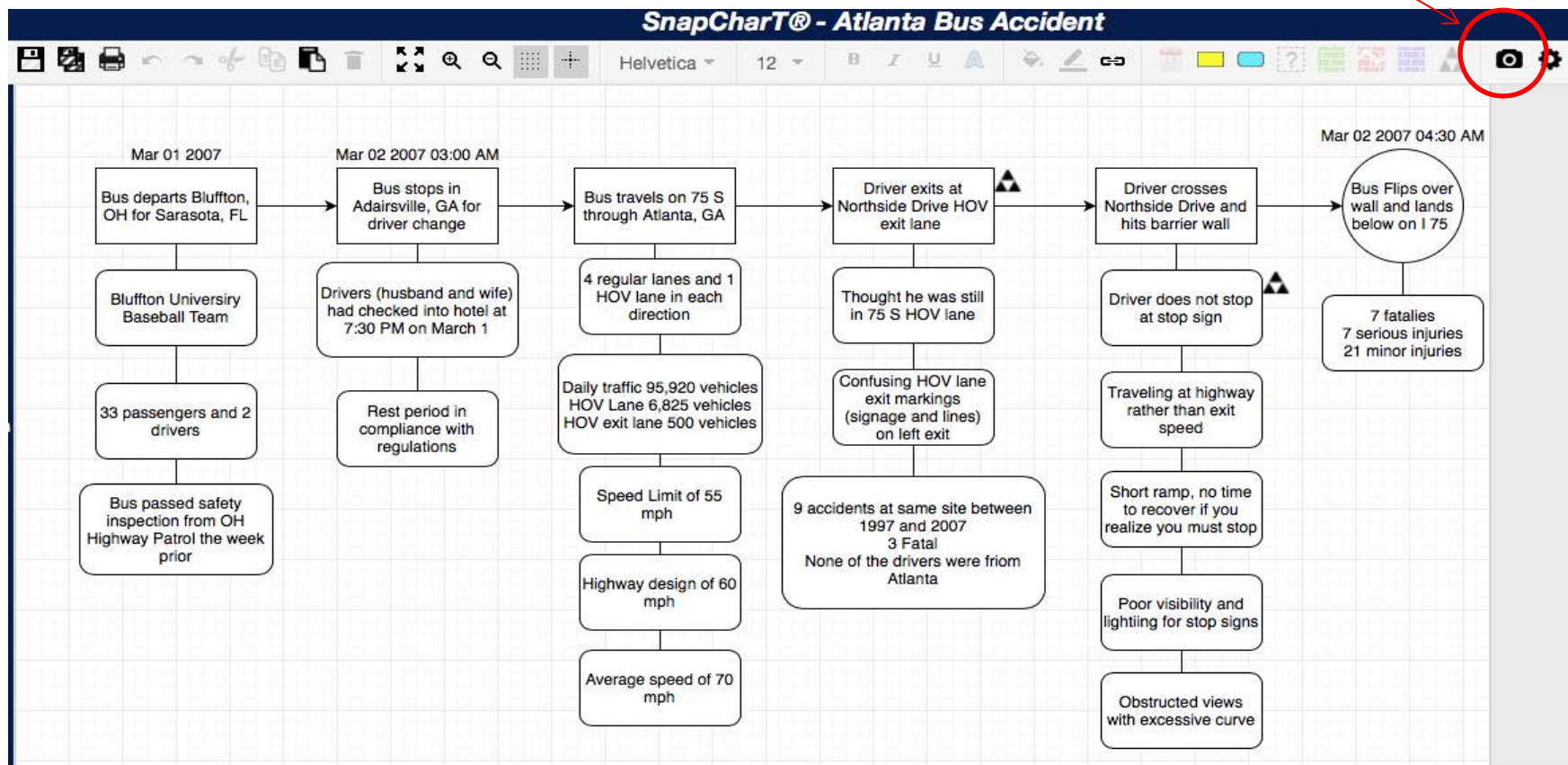




- Next Identify any additional Causal Factors through the same steps
  - The application automatically saves each change you make so there is no need to manually save your chart
- To return to your investigation and analyze with the Root Cause Tree® for each Causal Factor simply close the SnapCharT® window by clicking the “X” in the upper right corner or simply minimize the window to find the application window

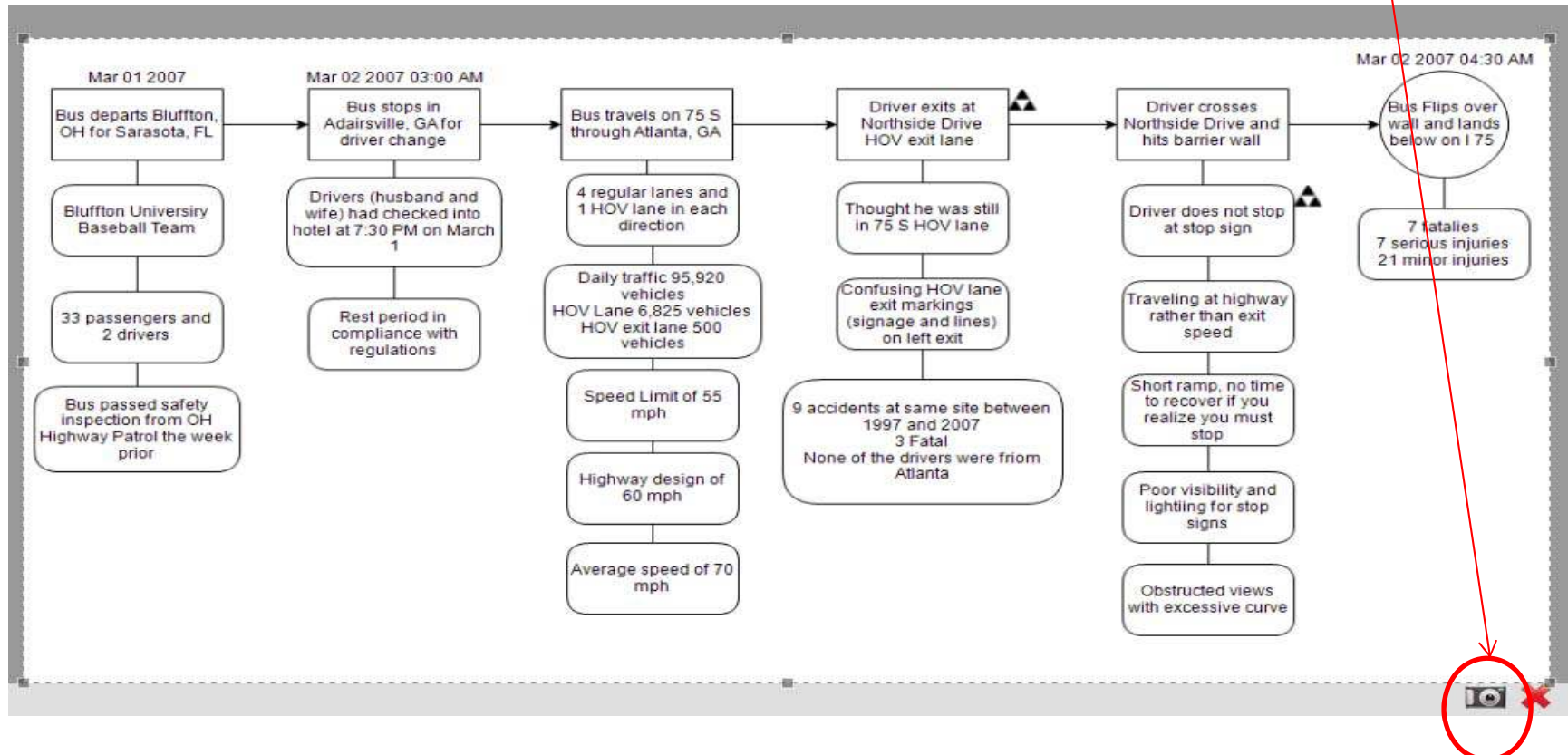


To take a picture of your SnapCharT® for your report or presentation, use the “SnapCaps” feature





Once SnapCaps opens, highlight the part of the chart you want and click the camera below the picture. This will save in the attachments tab of the software and can also be used in the “Reports Builder.” You can give the picture a specific name or save it as a “common type”

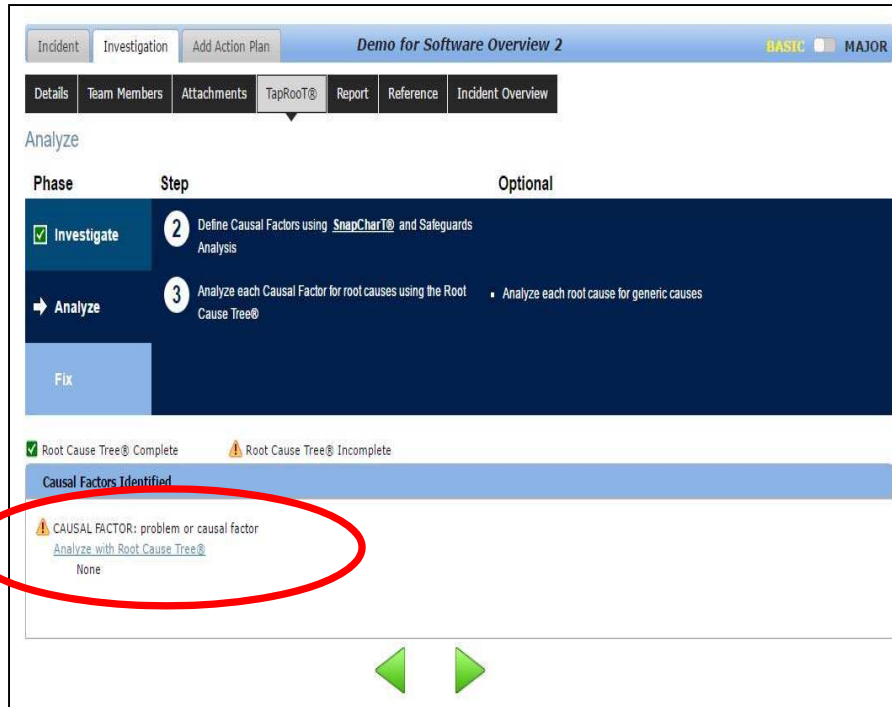




# Finding out “Why”

Root Cause Tree®s are created for each Causal Factor allowing you to analyze for Root Causes

Once in Root Cause Tree®, you can select “Question View” or “Tree View” from the toggle



Incident Investigation Add Action Plan Demo for Software Overview 2 BASIC MAJOR

Details Team Members Attachments TapRoot® Report Reference Incident Overview

Analyze

Phase Step Optional

Investigate 2 Define Causal Factors using SnapCharT® and Safeguards Analysis

Analyze 3 Analyze each Causal Factor for root causes using the Root Cause Tree® Analyze each root cause for generic causes

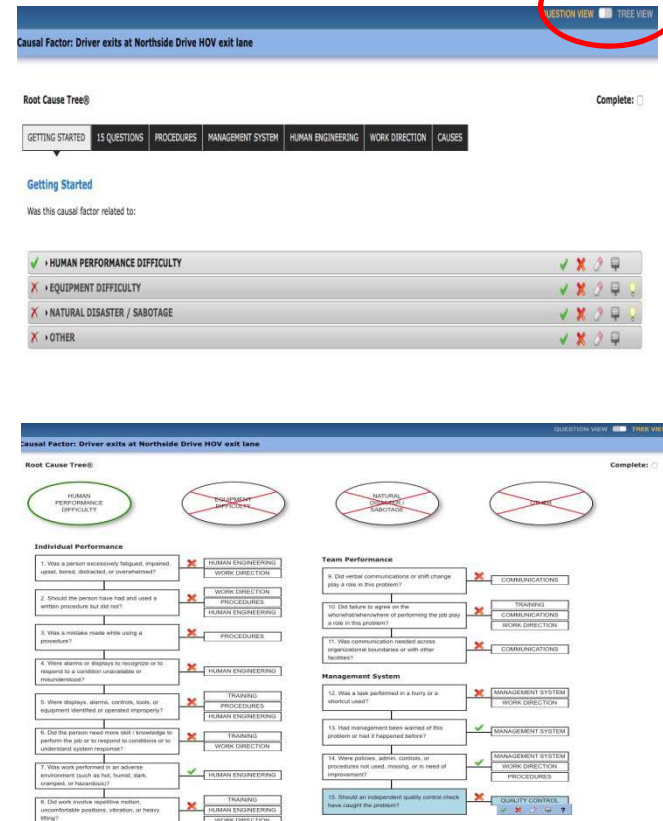
Fix

Root Cause Tree® Complete Root Cause Tree® Incomplete

Causal Factors Identified

CAUSAL FACTOR: problem or causal factor  
Analyze with Root Cause Tree®  
None

In the Causal Factor Section at the bottom of the screen, click on the “analyze with Root Cause Tree®” link on the Causal Factor you are going to analyze to get to the Root Cause Tree®



Causal Factor: Driver exits at Northside Drive HOV exit lane

QUESTION VIEW TREE VIEW

Root Cause Tree® Complete

GETTING STARTED 15 QUESTIONS PROCEDURES MANAGEMENT SYSTEM HUMAN ENGINEERING WORK DIRECTION CAUSES

Getting Started

Was this causal factor related to:

HUMAN PERFORMANCE DIFFICULTY

EQUIPMENT DIFFICULTY

NATURAL DISASTER / SABOTAGE

OTHER

Causal Factor: Driver exits at Northside Drive HOV exit lane

QUESTION VIEW TREE VIEW

Root Cause Tree® Complete

Individual Performance

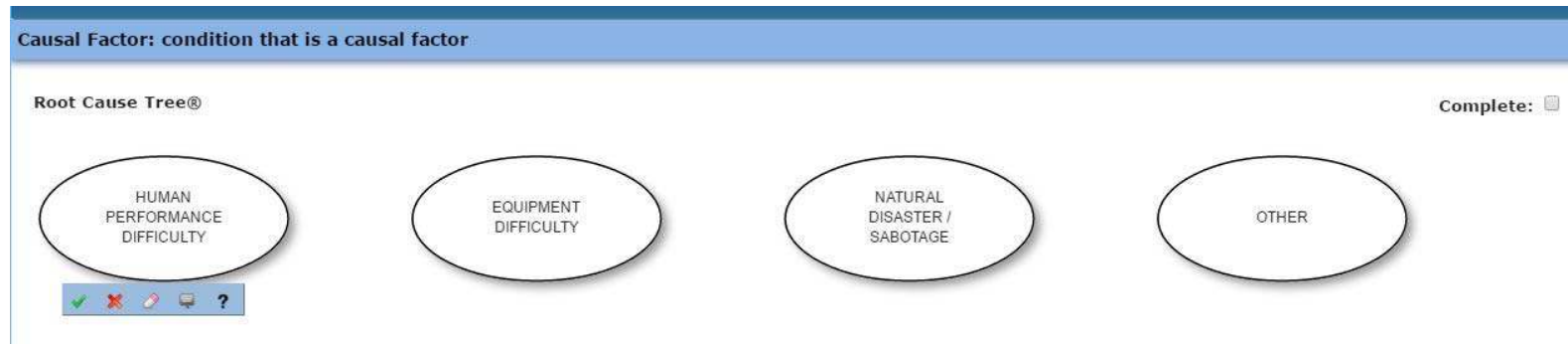
Team Performance

Management System

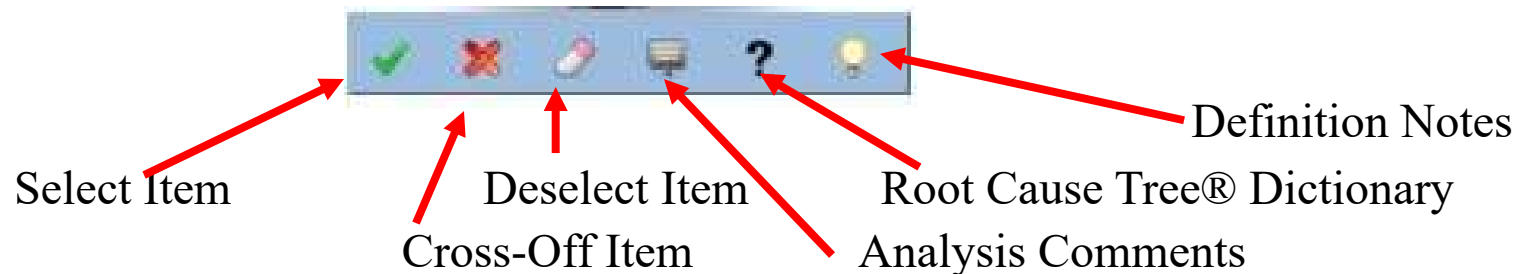
Quality Controls

On the following pages we will show the analysis using the “Tree View”

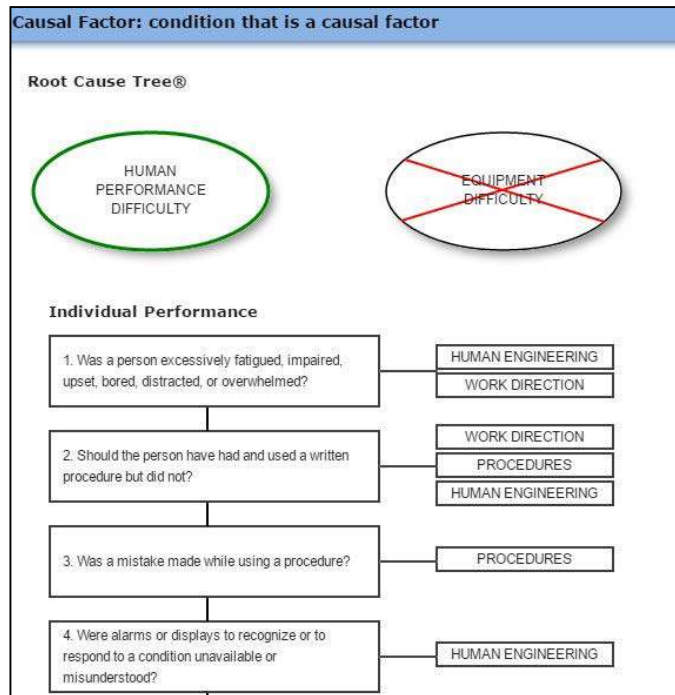




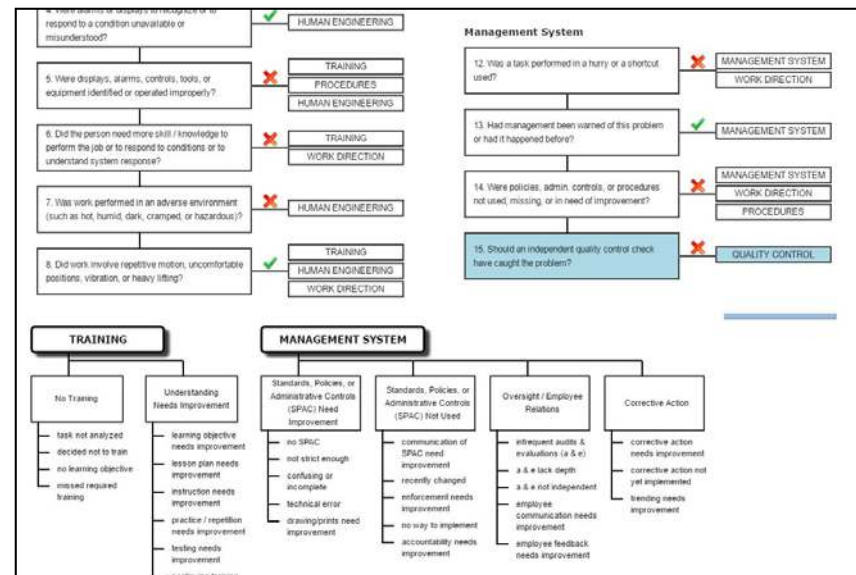
You will start at the top of the Root Cause Tree®. As you hover over each item you will get a tool bar to access the different options for that item:



Each selection is related to the item you are working on analyzing.



As you select different items as “Yes” or with the green checkmark, different areas of the Root Cause Tree® will open up below



You work your way through all the areas of the Root Cause Tree® that are presented to you based on the analysis you are performing on each Causal Factor basing your answers on the data contained on the SnapCharT®. A Summary of your Root Causes will be presented at the bottom of the screen. You can then also perform Generic Analysis (not shown here)

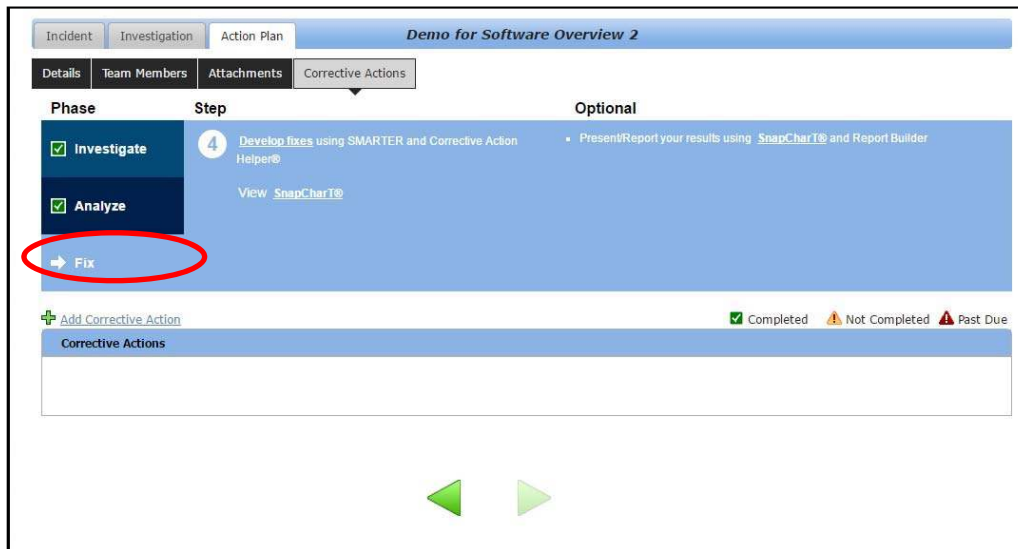




# Building the “Fix”



- Once you have analyzed all of your Root Cause Tree®s and marked them as complete (upper right corner of each Tree) you will move into the “Fix” phase in the main application window



- From here you can select the “Add Corrective Action” Link in the center of the screen to create a corrective action



# Simple Corrective Actions

SMARTER ☐ SIMPLE

Corrective Action Name\*

Corrective Action\*

Causes to Address with this Corrective Action

Addressed by Corrective Action Not Addressed by Corrective Action

CAUSAL FACTOR: CF 1

☒ ☐ No PM for Equipment (ROOT CAUSE)

CAUSAL FACTOR: CF 2

☒ ☐ arrangement / placement (ROOT CAUSE)

☒ ☐ labels need improvement (ROOT CAUSE)

Add Corrective Action name or number here

Write simple Corrective Action here

SMARTER ☐ SIMPLE

Corrective Action Name\*

Corrective Action\* 

Develop new monthly PM policy which includes checking for proper labeling.

Causes to Address with this Corrective Action

Addressed by Corrective Action Not Addressed by Corrective Action

CAUSAL FACTOR: CF 1

☒ ☒ No PM for Equipment (ROOT CAUSE)

CAUSAL FACTOR: CF 2

☒ ☐ arrangement / placement (ROOT CAUSE)

☒ ☐ labels need improvement (ROOT CAUSE)

Check Root Cause(s) fixed with this CA

Corrective Action Helper® (click lightbulb)



If you selected a SMARTER Corrective Action you will now be able to begin the process of creating a SMARTER corrective action by providing information and details to the action

Corrective Action Name\*  ?

SPECIFIC: In detail, describe a Corrective Action. ?

Corrective Action\* 

Once you have determined that the enforcement of the SPAC needs improvement, you need to change the rewards system to encourage the behaviors that you want to see. There are two principles that must be considered whenever you are trying to determine how to change people's behaviors.

1 of 7

Causes to Address with this Corrective Action

CAUSAL FACTOR: condition that is a causal factor

☒ enforcement needs improvement (ROOT CAUSE) ?

☐ labels need improvement (ROOT CAUSE) ?

! Warns that the Root Cause has not been linked to a CA. To link a root cause to this action select the checkbox next to the appropriate cause(s)

Create a CA name or number here

We build the detailed action here

We can read, copy and paste from Corrective Action Helper by selecting the lightbulb symbol next to the root cause we are fixing



To move through the next phases of SMARTER we use the Green Arrows in the center of the screen

Corrective Action Name\*  ?

SPECIFIC: In detail, describe a Corrective Action. ?

Corrective Action\* *Once you have determined that the enforcement of the SPAC needs improvement, you need to change the rewards system to encourage the behaviors that you want to see. There are two principles that must be considered whenever you are trying to determine how to change people's behaviors.*

TIMELY: Select a Due Date for implementation of the Corrective Action. ?

Due Date\*

ACCOUNTABLE: Select the Person Responsible to implement the Corrective Action. ?

Person Responsible\* Angie Comer (comer@taproot.com) [🔗](#)

1 of 5

Addressed by Corrective Action Not Addressed by Corrective Action

Causes to Address with this Corrective Action

CAUSAL FACTOR: condition that is a causal factor

☒ enforcement needs improvement (ROOT CAUSE) ?

☐ labels need improvement (ROOT CAUSE) ?

Once you have filled out the sections you wish to use, select the “Create” button at the bottom to create the corrective action’s action items. “Create and Add New” will save the corrective action and take you to a new blank corrective action form

Create

Create and Add New



Corrective Actions will then appear on the main window at the bottom

Incident Investigation **Action Plan** Atlanta Bus Accident

Details Sharing Attachments **Corrective Actions** Initial Incident Reporting Custom

Create SMARTER Corrective Actions

| Phase   | Step | Optional  |
|---|------|---|
| <input checked="" type="checkbox"/> Investigate | 2    | Define Causal Factors using <b>SnapChart®</b> and Safeguards Analysis   |
| <input checked="" type="checkbox"/> Analyze     | 3    | Analyze each Causal Factor for root causes using the Root Cause Tree®<br>▪ Analyze each root cause for generic causes |
| Fix   |      |   |

+ Add Corrective Action ✓ Completed ⚠ Not Completed 🔴 Past Due

**Corrective Actions**

CORRECTIVE ACTION: [1](#)

Replace all I-75 signage at Northside Drive HOV Exit Lane to comply with MUTCD guidelines.

**Tasks**

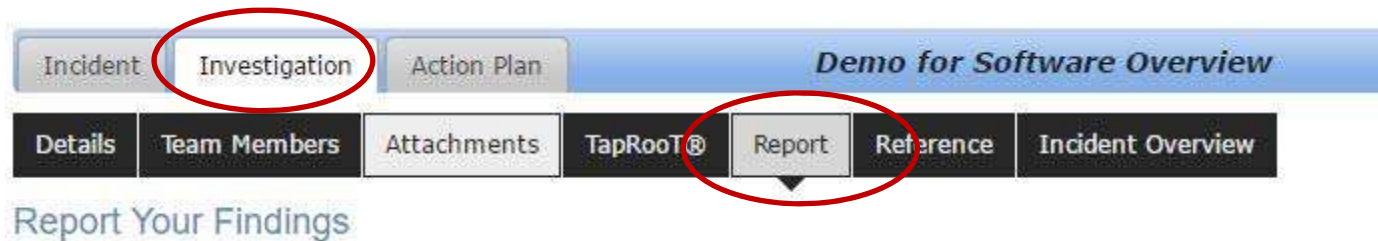
☒ Implementation (Due: Oct 10 2016)

Tasks can be added for implementation, verification, and validation by editing the corrective action (click on the corrective action name/number to open it)



# Reports

- The software allows for the development of your own reports by using the “Report Builder” or “Template Builder”
- To generate a report using a report template, open the investigation and select the Investigation Tab, along with the Report Section

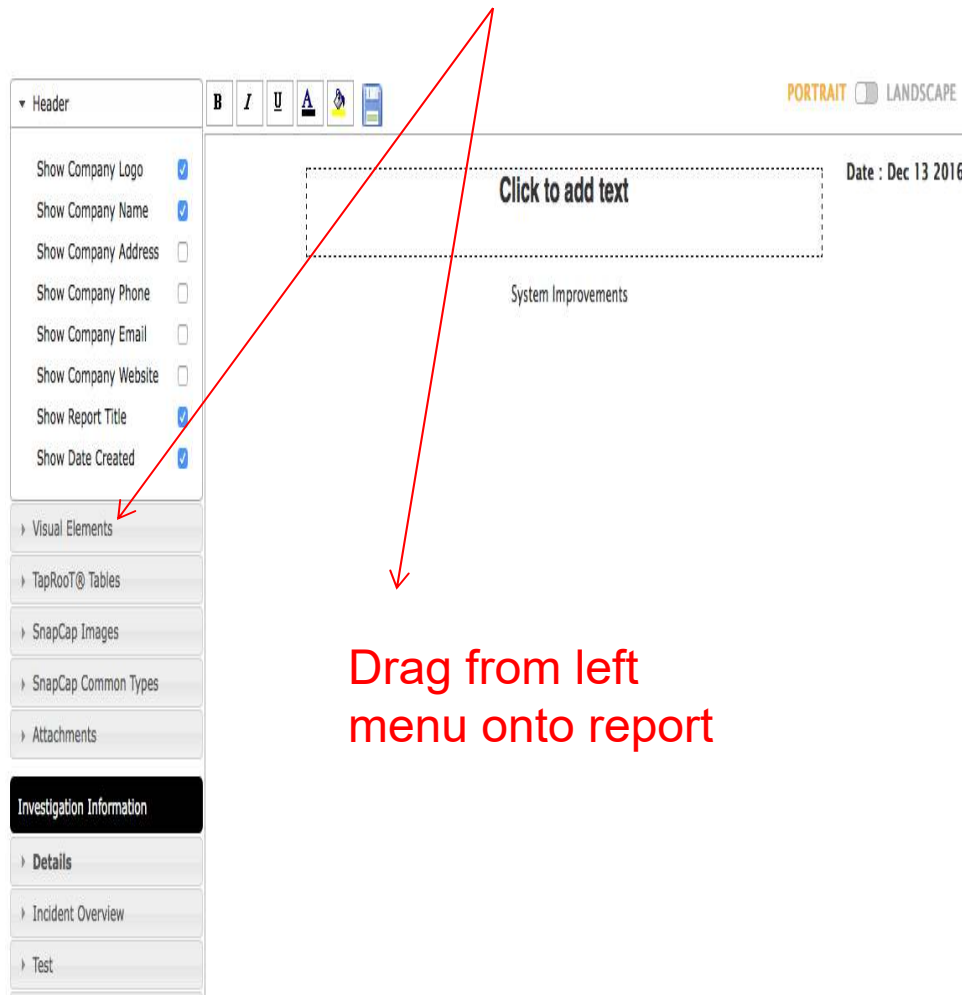


- You can use Report Builder to build a report for this investigation, Template Builder to build a template for use later, or Use a Template to generate a report from a previously developed template

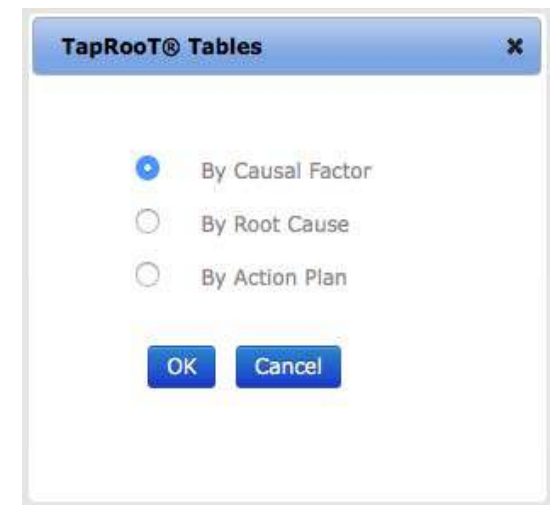




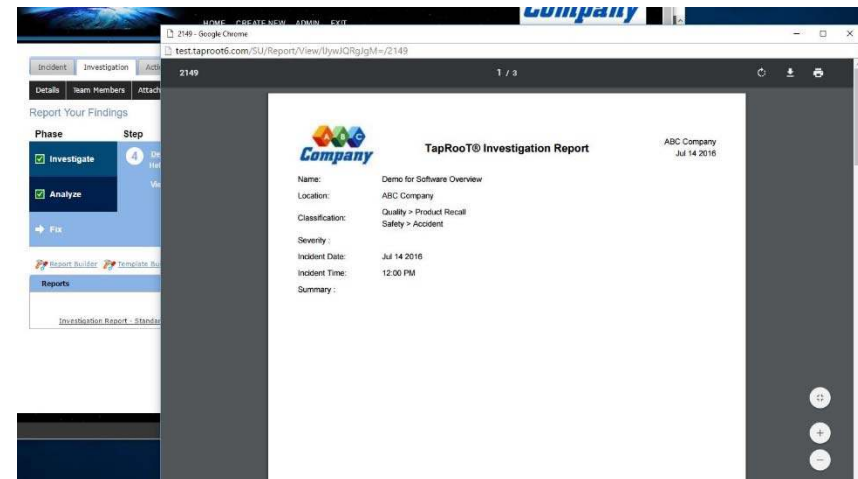
Once in the Report Builder or Template Builder, you can drag the items you want onto your report/template in the order you want before saving



For TapRoot® tables, you can choose individual items or drag the whole table and select how you want the information organized



- On the Investigation/Report Tab you will now see the appropriate “Report” selected
- To run the report, select the proper report link in the Reports section and the report will be generated and can be printed, saved and downloaded





TapRoot®  
ROOT CAUSE ANALYSIS

# *User Questions?*

*Give us a call*

*001 (865) 539-2139*

# Problems?

TapRoot® Technical Support

001 (865) 357-0080

support@taproot.com