SAFETYNET Query Applications
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Learning Objectives

• Learn how to turn a data request, question, or problem statement into a query

• Discuss how to identify and troubleshoot query mistakes or issues
Session Format: Demos and Exercises

**Demo:** We’ll show you how it’s done

**Exercise:** Try it on your own and we’ll review as a group

**Small Group Exercise:** We’ll form breakout groups in separate web rooms
What Can You Do with a Query?

• Respond to questions and problems posed by management

• Provide information like:
  • Effectiveness of State programs
  • Training enhancement issues

• Allows you to:
  • Examine data quality
  • Improve ability to run reports
Common Applications

- Improve completeness (e.g., find records where “driver’s license class” is blank)
- Assist with quarterly MCSAP reporting
- Find duplicate crashes or inspections
- Use “Federally recordable” & “State reportable” fields to identify all crash records in either category
- Find calendar year passenger vehicle crashes with Hazmat
- Find records where carrier name is unknown.

How do you use queries?
Alternatives

• Queries
• Reports
• Data Quality Tool
• Export data for analysis in another program
Commonly Used Inspection Reports

- MCSAP Quarterly Report (in “Statistical Reports”)
- Duplicate Inspection Number (in “Data Entry Reports”)
- Inspection Type Summary (in “Workload Reports”)
- CVSA Decal Report (in “Summary Reports”)
Tips: Customize Grid to Find Information You Need

Choose columns/order to display columns (persistent)

Drag column headers to change order (temporary)

Sort the results
Tips: Show All Records

• Click **this button** to display all records before/after querying
Query Tips

• Use a unique username to save and run a particular query
• Save a query or find one in another profile
• Export and print
Demo: Crash Query #13
Check for records where the Driver Lic. # Field is not filled in (for records edited in 2020)

Query Construction:
• Last Edit Date >= 01/01/2020 AND
• Last Edit Date <= 12/31/2020 AND
• Driver Lic. # Is Blank
Demo: Crash Query #14
Check for records where the Driver Lic. # Field is not filled (for records edited in the past year)

Query Construction:
• Last Edit Date >= Current Date (-365 days) AND
• Driver Lic. # Is Blank
“Current Date”: Practice

**Exercise:** Take the query that we were just working with (or another one of your choice!)

Modify query to cover different date ranges using “Current Date”

e.g., Last Edit Date >= Current Date (-90 days)

Or

Last Edit Date >= Current Date (-30 days)

Etcetera
### Locally Defined Fields

#### Inspection Configuration

<table>
<thead>
<tr>
<th>Field ID</th>
<th>Deleted</th>
<th>Field Description</th>
<th>Field Label</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td></td>
<td>Duty Status:</td>
<td>DUTY STATUS:</td>
<td>01/01/1984</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>Food Transport Inspection</td>
<td>Food Transport Inspection:</td>
<td>08/12/2011</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>Health Hazard</td>
<td>Board of Health Enf. Action:</td>
<td>03/12/2011</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>ID/OR Permitted</td>
<td>OS/ORW Permitted Vehicle:</td>
<td>08/18/2019</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Out of Service Location</td>
<td>OUT-OF-SERVICE AT:</td>
<td>07/13/2001</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>Prepass Y/N</td>
<td>Pre-Screened Carrier:</td>
<td>10/21/2005</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>PROJECT CODE #:</td>
<td>PROJECT CODE #:</td>
<td>01/01/1984</td>
</tr>
</tbody>
</table>

**Field Description:** Health Hazard

**Field Label:** Board of Health Enf. Action

**Data Type:** Logical

**Start Date:** 08/12/2011

**Deletion Date:**

- **Show Deleted Fields:**
  - From: 01/01/1984
  - To: 03/02/2020

**Display Date Range**

- **Add:**
- **Delete:**
- **Print:**
- **Export:**
## Locally Defined Fields

**Report Number**: INLBE005014  
**Carrier Name**: SWIFT LEASING CO LLC

### ACCIDENT/INCIDENT 
- Project Code: 201
- Duty Status: QT

**OUT-OF-SERVICE AT**: Roadside

- CDL Checked
- Pre-Screened Carrier
- Food Transport Inspection
- Board of Health Enf. Action
- OS/OW Permitted Vehicle
Demo: Inspection Query #14 (Version 1)
All inspections in 2020 where the LDF shows that the “Board of Health Enf. Action” checkbox was selected

Query Construction:
• Start Date >= 01/01/2020 AND
• Start Date <= 12/31/2020 AND
• Optional Field # = 18 AND
• Optional Value = 1
Locally Defined Fields

Demo: Inspection Query #14 (Version 2)
All inspections in 2019 where the LDF shows that the “Board of Health Enf. Action” checkbox was selected

Query Construction:
• Start Date >= 01/01/2020 AND
• Start Date <= 12/31/2020 AND
• Optional Field Description = Board of Health Enf. Action AND
• Optional Value = 1
Combining Queries with a Report

Demo: Inspection Query #15
A supervisor needs Inspector Profile Workload Report for CY 2019, regular duty inspections, for inspector codes IN5399 and IN1478

Query Construction:
- Start Date >= 01/01/2020 AND
- Start Date <= 12/31/2020 AND
- (Optional Field Description = Duty Status: AND
- Optional Value = RT) AND
- (Inspector Code = IN5399 OR
- Inspector Code = IN1478)

Use Tag Queried Records checkbox!
Challenges When Writing Queries

• Additional layers increase the chance of losing data that you don’t realize you are excluding

• Improper placement of parentheses

• Comparators
  • Choosing the right one

• Date range limitation
  • Archived records do not appear in query results
Addressing Challenges – Validating Your Query

• Build up the query and check as you go
  • Start with Date Range
  • Add specific elements one-by-one

• Write the query out by hand – the issue might be with constructing it in SAFETYNET

• Check against another data source or similar query

• Get a fresh pair of eyes – consult with a coworker

• Query the archive separately or bring archived records back into main database
Managing Query Results

IF

your query gives you more results than you want

THEN

“test” the query using a small data set to verify the query language
Addressing Challenges: Blank Fields vs Empty Spaces

- Fields that use drop-down menus will have an empty space when there is no value rather than a true blank space.
- Empty spaces make it difficult to search for missing data.
Queries on Blank/Empty Spaces

Exercise Crash Query #15: Write a query that demonstrates what happens when you create a query using a field that has empty spaces (crash database)

- Driver Lic. Class is Blank

Note the result:

![Information dialog box with message: No records currently meet the condition in the query.](image-url)
Exercise Crash Query #16: To query for fields that contain empty spaces, we need to revise the query to search for fields that do not equal all the possible values for that field.

Let’s try this using the Drivers License Class field for 2020.
Finding Other Queries

**IF**

you want to find a query that someone else wrote

**THEN**

in the upper left of the Stored Queries screen, click the button to show “All Queries” instead of “My Queries”
**Small Group Exercise:** We will form breakout groups in separate web rooms

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Group Discussion: Each person describes a new question they would like to answer with a query.</td>
<td>5</td>
</tr>
<tr>
<td>Exercise: Each person attempts their new query; returning to group members intermittently with questions or results.</td>
<td>10</td>
</tr>
<tr>
<td>Small Group Discussion: Decide what to report to the large group, and who will do so.</td>
<td>5</td>
</tr>
<tr>
<td>Large Group: Group representatives report out by talking and/or posting on the whiteboard (optional).</td>
<td>10</td>
</tr>
</tbody>
</table>
Additional Challenges and Limitations

• Queries are limited to fields available on the drop down list

• Queries can produce more records, fewer records, or records other than the ones you are searching for:
  • Use another tool and export to Excel or a different resource (SAFETYNET, Data Quality Reports)
  • Refine your query or relax the restrictions of your query

• Queries simply return a group of records – they do not provide statistical information
Have Questions? Let Us know!

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Additional Resources:  
Data Quality Website  
http://ai.fmcsa.dot.gov/DataQuality

DataQs Website  
http://dataqs.fmcsa.dot.gov/

Thank You!