Paperless Track Inspection for Transit Systems

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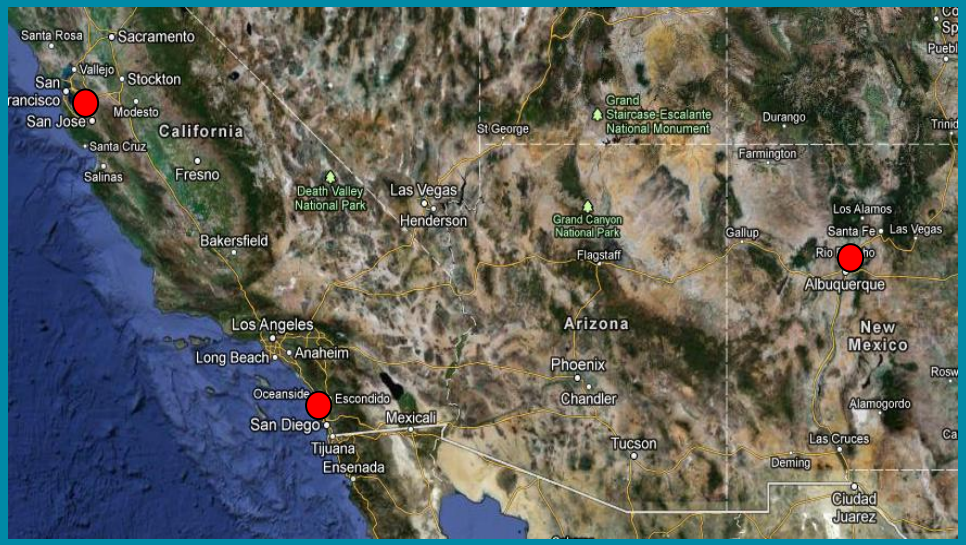
On behalf of

Rick Bellew

Transit America Services Inc.,
Deputy General Manager
MOW

Transit America Services Background

Transit America Services Inc., currently provides track maintenance and services for multiple transit properties across the US



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ENSCO Background

For more than 40 years, ENSCO's team of engineers has led the rail industry in developing new, advanced technologies for transportation. ENSCO technology and services help customers improve the quality of their operations while making travel safer

Why Paperless Track Inspection?

Needed electronic inspection method to support multiple properties

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Goals/Requirements for Paperless System

- Manage inspection activities at multiple properties
- Improve/Ensure Regulatory Compliance
- Easy to Use
- Work in Offline or Online Mode
- Obtain Performance Metrics
- Streamline/Improve Inspection process

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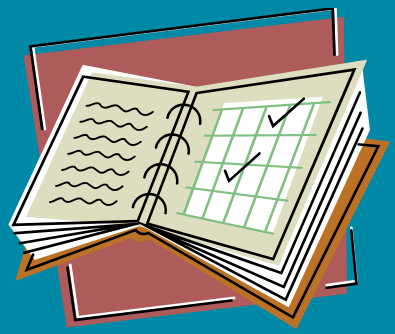
Challenges with Traditional Paper Inspections

- Regulatory Compliance
  - Scheduling
  - Reporting
  - Defect Tracking
- Fraudulent Activity
- Performance Metrics
- Managing Multiple Properties



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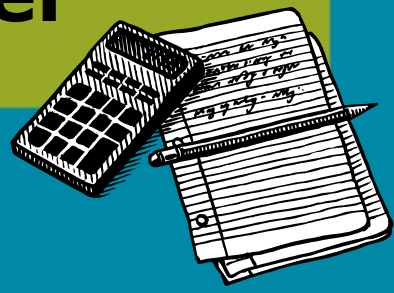
Regulatory Scheduling - Paper



- Frequency
  - The FRA has many different inspection frequencies depending upon asset type. This includes minimum days between inspections maximum wait times
- Detailed requirements
- Observe/Traverse

Inspection Scheduling - Paperless

Inspection Window

Automatic Scheduled Inspections

		Subdivision/Yard	Asset Type	Asset	Scheduled Start MP	Scheduled End MP	Earliest Date	Latest Date	Saved Date	Traverse/ Switch/ Detailed	Status	Asset Number	Calendar Code
		ASHCROFT	Main Track	TRACK TEST M1_20 1	16	19	04/10/2012	04/30/2012			Overdue	750000001	M1_20
		ASHCROFT	JointBar Main	JOINTBAR TEST 1	18	25.5	04/30/2012	06/30/2012			Due	56525334	Y4_60
		ASHCROFT	Main Track	TRACK TEST M1_20 2	20	30	04/09/2012	04/30/2012			Overdue	750000002	M1_20
		ASHCROFT	JointBar Main	JOINT BAR TEST 2	25.5	50	04/29/2012	06/30/2012			Due	56525335	Y4_60
		ASHCROFT	Main Track	TRACK TEST M1_20 3	30	31	04/08/2012	04/30/2012			Overdue	750000003	M1_20
		ASHCROFT	Main Track	TRACK TEST M1_20 3	31	32	04/25/2012	04/30/2012			Overdue	750000003	M1_20
		ASHCROFT	Main Track	TRACK TEST M1_20 3	32	32.5	04/08/2012	04/30/2012			Overdue	750000003	M1_20

Traverse/Detailed Requirements

Red: Overdue
Green: Available
Yellow: Due for inspection on that day

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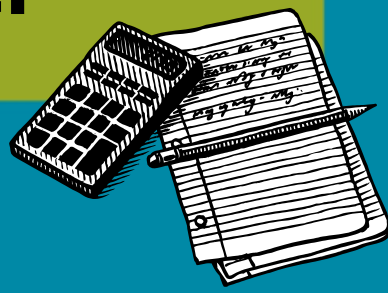
Reporting Challenges - Paper



- Data can be located in Multiple Places
- Was it filed correctly?
- Am I missing any information?
- Time Consuming $$

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Reporting - Paperless

DTN | Report

Report Type: FRA Inspection Report

Completed Date From: 05/14/2012 To: 05/14/2012

Region-Division	Subdivision/Yard	Asset Type	Asset	Completed By
All CHARLOTTESVILLE GREENVILLE STRATFORD		All Main Track Siding Spur Yard Track		

Regulation Type: Federal Railroad Administration

Generated: 05/14/2012 Service Area: CHARLOTTESVILLE Subdivision/Yard: Multiple Inspector: Multiple From Date: 2012-03-01 To Date: 2012-05-14

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/18/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	TRACK TEST M1_20 3	30.0	31.0	deg2222	T-Vehicle	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
920	213.057.03	30.0	Open	Immediate Repair					N		

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/18/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	TRACK TEST M1_20 3	32.0	32.5	deg2222	T-Walking	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
921	213.033.01	32.0	Closed	Immediate Repair		Adjusted	03/19/2012	DEG	N	deg2222	

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/19/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	TRACK TEST M1_20 2	20.0	30.0	mik2222	T-Vehicle	3

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
929	213.053.02	20.5	Closed	Immediate Repair		Gauged	03/19/2012	DEG	N	deg2222	
930	213.103.02	23.0	Closed	Immediate Repair		Ground	03/19/2012	123	Y	deg2222	
931	213.013.01	22.0	Open	213.9 b Authority	Test				N		

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/19/2012	CHARLOTTESVILLE	ASHCROFT	SIDING	SIDING TEST 2	11.5	11.85	deg2222	T-Walking	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
922	213.053.01	11.6	Closed	Place Slow Order Class 1	Test	Anchored	05/08/2012	Test	Y	deg2222	

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/19/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	MAIN TRACK TEST	100.0	110.0	mik2222	T-Vehicle	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
932	213.103.01	100.0	Open	Immediate Repair					N		

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/20/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	TRACK TEST M1_20 1	10.0	19.0	bob2222	T-Walking	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
936	213.013.01	19.5	Closed	Immediate Repair		Other-See Comments	03/20/2012	deg	N	deg2222	retested

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/20/2012	CHARLOTTESVILLE	ASHCROFT	MAIN_TRACK	TRACK TEST M1_20 3	32.5	40.0	bob2222	Observe	1

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
937	213.135.12	38.5	Open	Immediate Repair					N		

Completed Date	Service Area	Subdivision/Yard	Asset Type	Asset	Start MP	End MP	Inspector	Insp Mode	Defects
03/22/2012	CHARLOTTESVILLE	ASHCROFT	STORAGE_TRACK	HASTINGS TRACK #1-WHAS1	1.25	1.45	deg2222	T-Walking	2

Defect Number	Reg. Code	MP	Status	Immediate Action	Defect Comments	Corrective Action	Corrected Date	Corrected By	Repeated	Entered By	Comments
941	213.057.06	1.3	Closed	Place Slow Order Class 1	Test	Adjusted	04/12/2012	DEG	N	deg2222	

- Automated Reports can be generated anywhere at anytime

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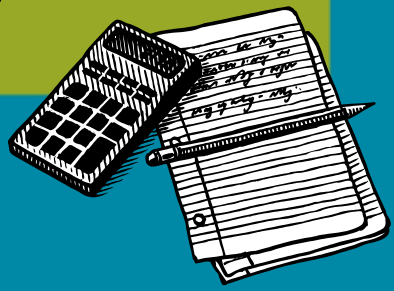
Defect Tracking Challenges



- Defect Notification
- Tracking Closure
- How long as a defect been open?
- How many Defects are Open?
- How do I send information to appropriate people?

Defect Tracking Paperless

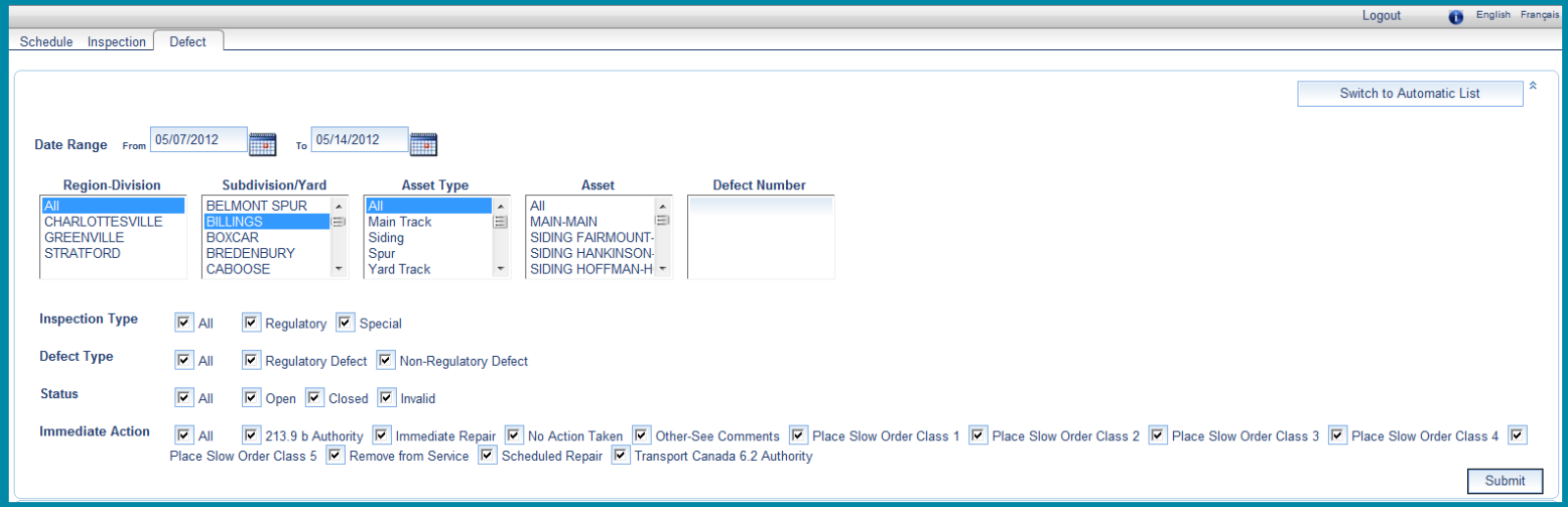
- At a glance view of defects
- Sortable, query able
- PDF Generation allows for simple email generation

Automatic Defects

		Subdivision/Yard	Asset Type	Asset	MP	Defect Number	Defect Date	Comment	Reg Rule	Status	Action	Before Date	Corrected Date	Corrected By	Asset Number
		BILLINGS	Turnout	DETROIT SUB JCT SWITCH GLENWOOD	121.65	426	09/26/2011		213.033.02	Open	Immediate Repair				15144812
		BILLINGS	Turnout	GAS SPUR SWITCH GLENWOOD	121.69	602	10/26/2011		213.033.01	Open	Immediate Repair				576846999
		BILLINGS	Main Track	MAIN-MAIN	122	430	09/26/2011		213.033.01	Open	Immediate Repair				75194
		BILLINGS	Main Track	MAIN-MAIN	125	796	11/22/2011		213.033.04	Open	Immediate Repair				75194
		BILLINGS	Turnout	EAST FMR SDG SWITCH LOWRY	128.82	432	09/26/2011		213.037.01	Open	Immediate Repair				6275194
		BILLINGS	Turnout	WEST FMR SDG SWITCH LOWRY	129.88	427	09/26/2011		213.013.01	Open	Immediate Repair				6275195

Defect Tracking Paperless

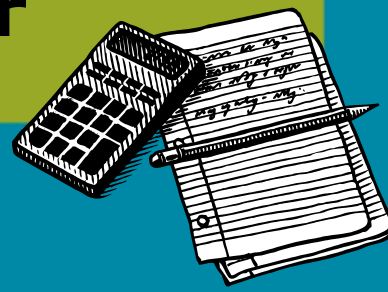
- Defects can be queried by type, date, asset, etc., and exported to various formats for email or other electronic communication



Fraudulent Activity -Paperless

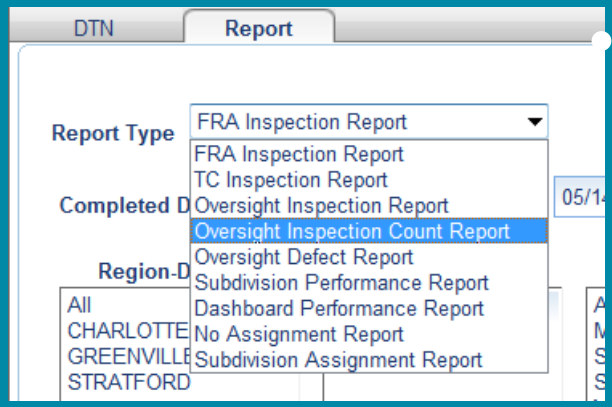
- All Inspections are time stamped
  - Prevents Back Dating
- Amending Inspection only
  - Creates an electronic Paper Trail
- Restricted to Authorized Users/Inspectors
- Electronic Signature

Performance Metrics - Paper



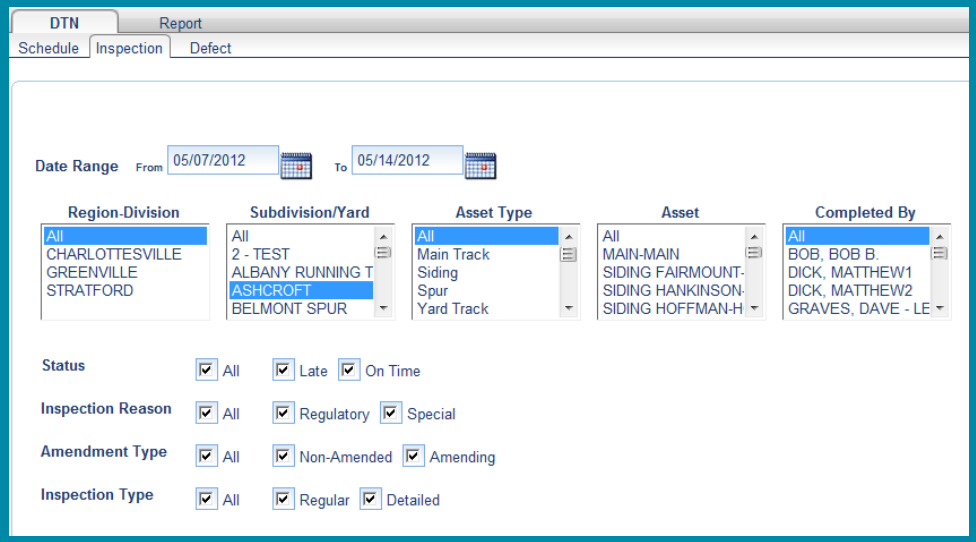
- Not Easy
- Requires significant manual effort
- Not practical with paper

Performance Metrics - Paperless



- Reports are available in ‘real time’ from pull down menus

- Advanced Queries available for additional reports or information



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Implementation

- Change is Hard
  - We've Always Done it This Way
  - If it Aint broke, don't' fix it
  - I'm not good with computers

- Keys to Success:
  - Ease of Use
  - User Training
  - Transition Process

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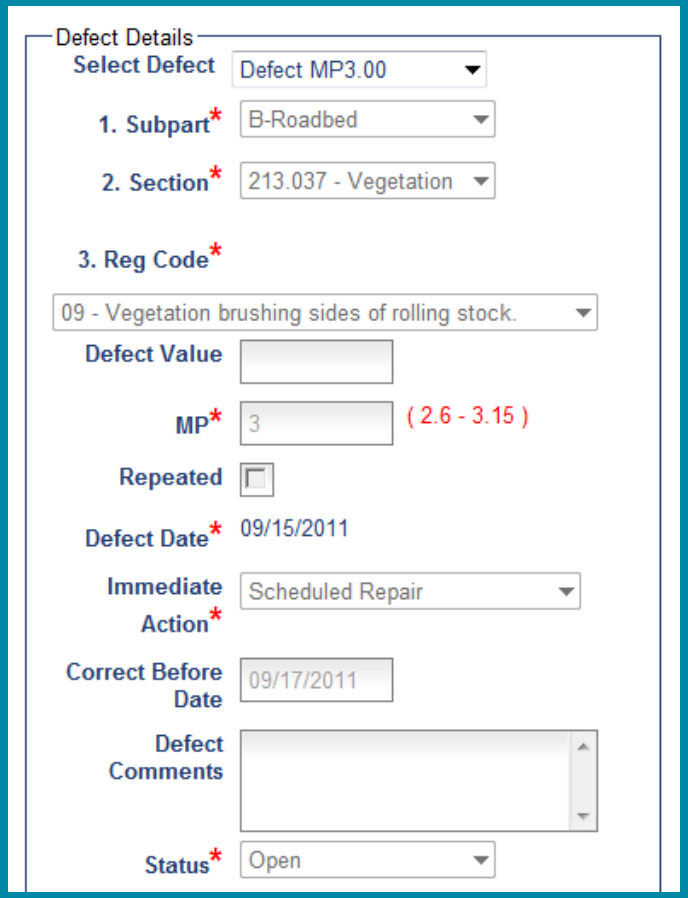
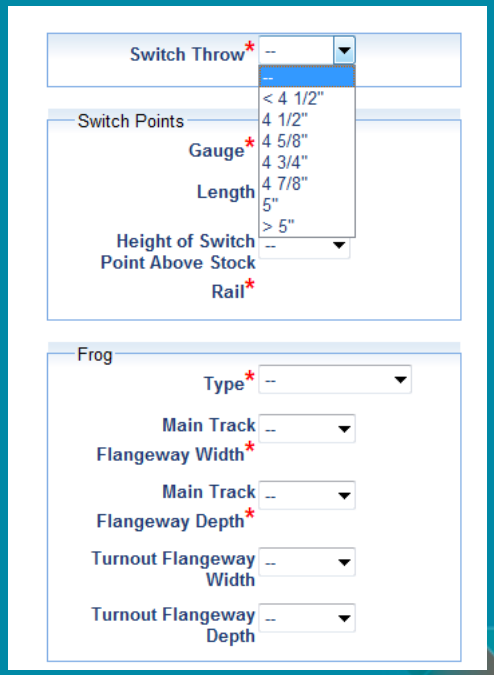
Implementation - Ease of Use



- Pull-Down Inputs wherever possible (Including Regulatory Codes)



- Required fields indicated by *, ensures correct entry

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Implementation - Training

- Utilized “Train the Trainer” approach
  - Developed an internal expert
  - Inspectors have a comfort with an internal resource
- Customer Assets were used
  - Helps with transition since the same assets that will be used in production

Implementation - Pilot

- 'Live' Training Period
  - Inspectors input both Paper and Electronic Inspections and Defects
- Advantages:
  - Creates 'Comfort Level' with product
  - Supports more gradual transition to Production

Summary of Implementation

- Over 6500 Electronic Inspection records have been entered
- The inspection process has been streamlined and is expected to ensure regulatory compliance
- The process for repairing defects has been dramatically improved
- The time to track territory performance has been reduced from 1 day to less than 1 hour

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Thank You

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