

The Critical Role of Safety Leadership



Alyeska Pipeline Leadership Meeting

Robert Sumwalt July 21, 2020





The Board



Michael Graham



Bruce Landsberg



Robert Sumwalt



Jennifer Homendy



Thomas Chapman



Zaleski, Ohio

January 2019

Direction of travel

“Survival Flight’s poor safety culture likely influenced the accident pilot’s decision to conduct the accident flight...”

Scattered airframe and medical interior debris

Main gear box

Engine and aft cabin

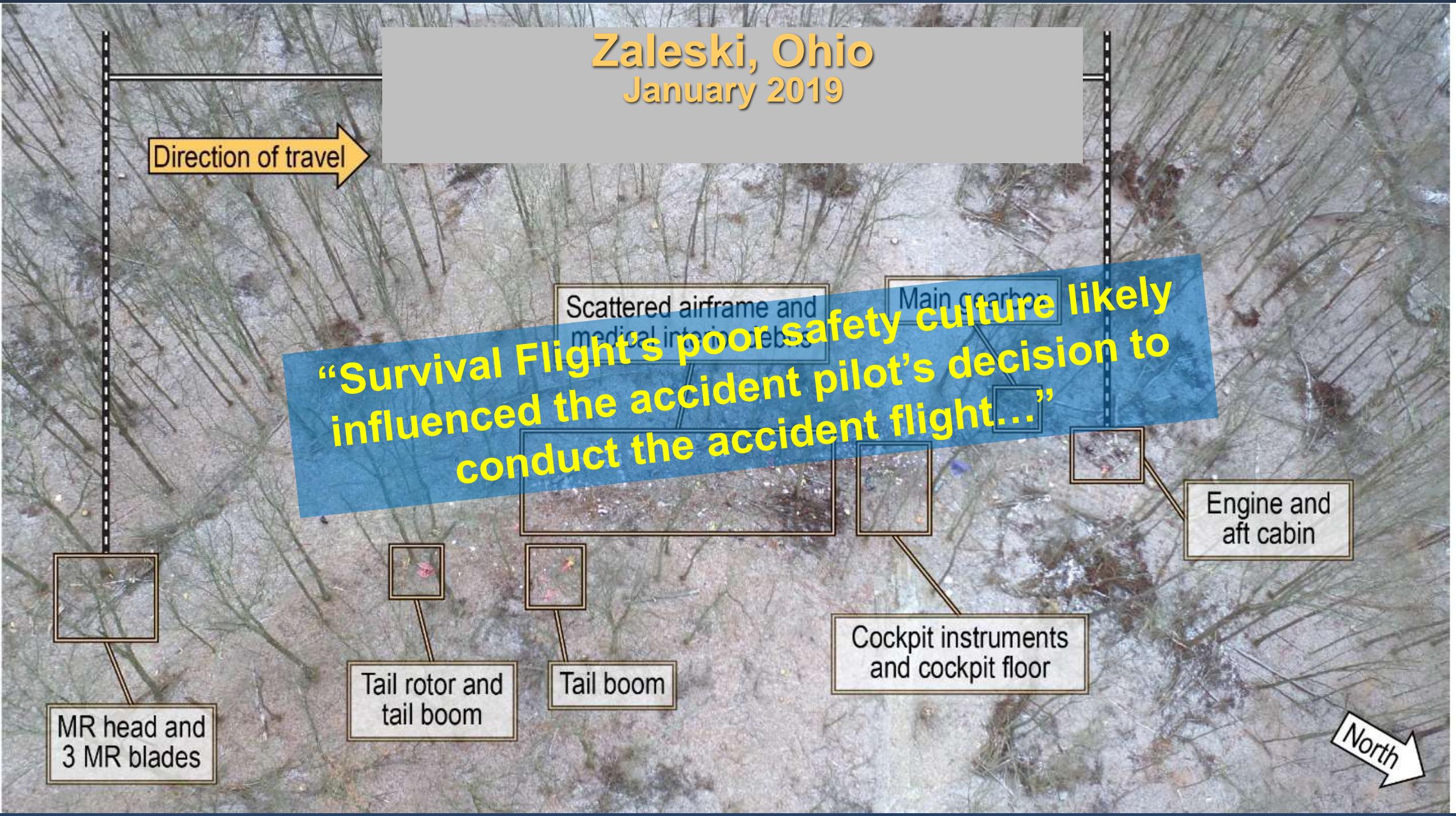
Cockpit instruments and cockpit floor

MR head and 3 MR blades

Tail rotor and tail boom

Tail boom

North



Oakland, Iowa
December 2017



Oakland, Iowa
December 2017

“...the failure of the Riverside Community School District to provide adequate oversight by allowing a driver to operate a school bus with a known physical impairment that limited his ability to perform emergency duties ...”

DuPont, WA
December 2017

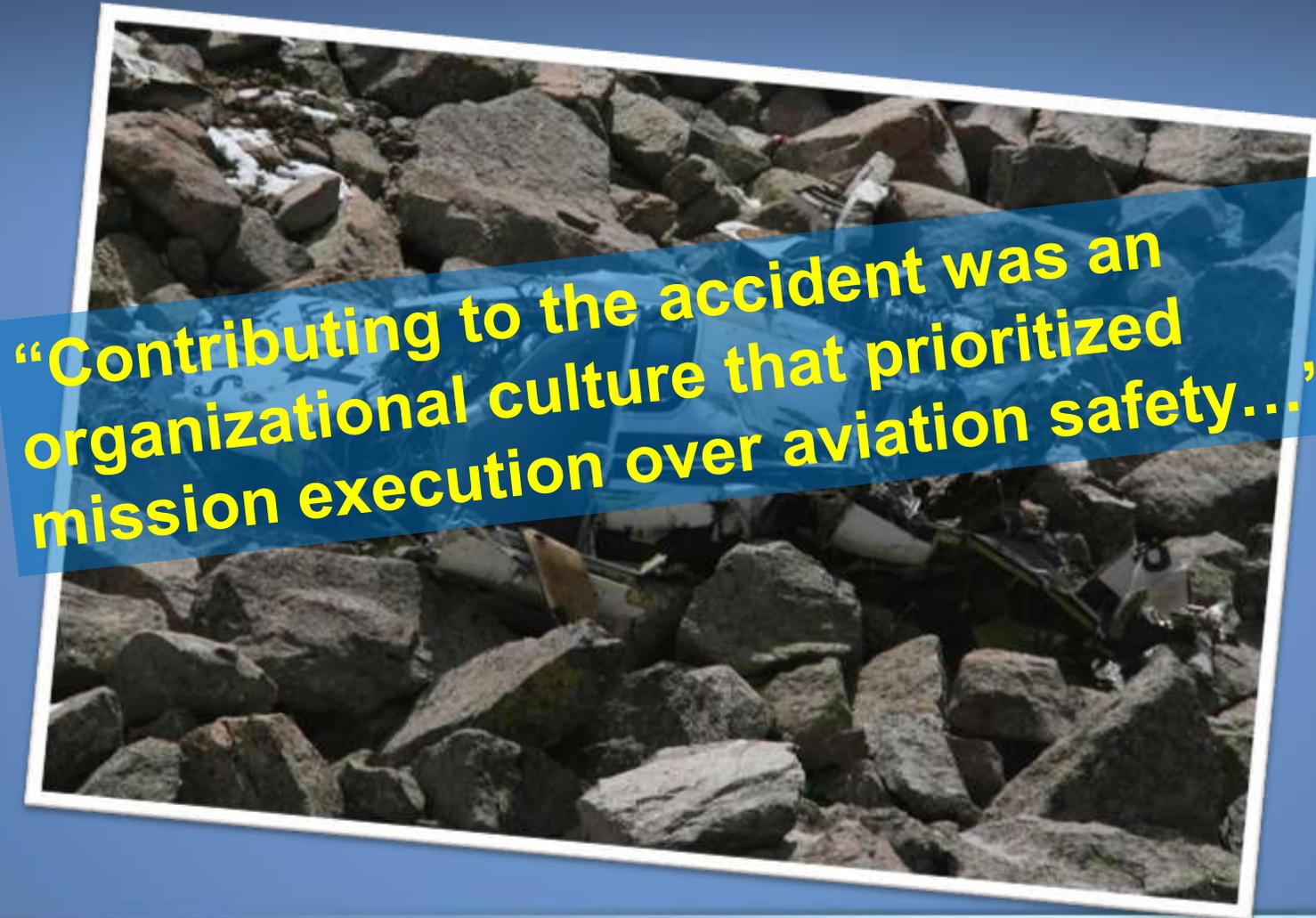
“Central Puget Sound Regional Transit Authority’s failure to provide an effective mitigation for the hazardous curve without positive train control in place ...”



NTSB

Near Santa Fe, NM

June 2009



NTSB: CSX management at root of February 2018 crash in Cayce



A look at the Amtrak train collision in Cayce, SC.

By [Emery Glover](#) | July 23, 2019 at 9:15 AM EDT - Updated July 23 at 1:04 PM

CAYCE, S.C. (WIS) - After meeting for a little more than two hours, officials with the National Transportation Safety Board determined management with CSX was at the root of a [train crash that took](#)



Roswell, NM

April 2011



A photograph of an airport scene. In the foreground, there is a blue semi-transparent box containing yellow text. The background shows a tall, white air traffic control tower with a dark top section. To the left of the tower, the tail and wings of a white aircraft are visible. The ground is a mix of dry grass and gravel. In the distance, other aircraft and airport infrastructure are visible under a clear blue sky with some light clouds.

“Gulfstream’s focus on meeting the G650’s planned certification date caused schedule-related pressure that was not adequately counterbalanced by robust organizational processes to prevent, identify, and correct the company’s key engineering oversight errors.”

Gulfstream Managers Blamed for Fatal Crash on Test Flight

by Alan Levin

October 11, 2012 — 12:00 AM EDT



■ An artist's rendering of a General Dynamics Corp. Gulfstream G650. Source: Business Wire via Bloomberg

Pressure to speed flight tests of a new model of General Dynamics Corp.'s Gulfstream business jet so it could win U.S. certification for sale was blamed by a U.S. safety agency for crash that killed four employees.

The National Transportation Safety Board yesterday ruled that Gulfstream management was responsible for the accident that sent a G650, which costs \$65 million and has the longest range of any private aircraft, sliding off a Roswell, New Mexico, runway in flames on April 2, 2011.

Alyeska's Management Blamed for Fatal Pipeline Accident

By Alan Levine



Company sued for billions. Company declares bankruptcy, ceases operations.

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Could this be you?

“The best way to predict the future is to create it.”

- Peter Drucker

Creating a Future of Safety: Five Leadership Questions

1. How strong is our safety culture?
2. Are we really living our values?
3. Are we fooling ourselves?
4. Are we measuring and rewarding the right things?
5. Are we truly providing safety leadership?

Creating a Future of Safety

HOW STRONG IS OUR SAFETY CULTURE?

Safety Culture is:

“Safety culture is the core values and behaviors resulting from a collective commitment by leaders and individuals to emphasize safety over competing goals to ensure protection of people and the environment.”

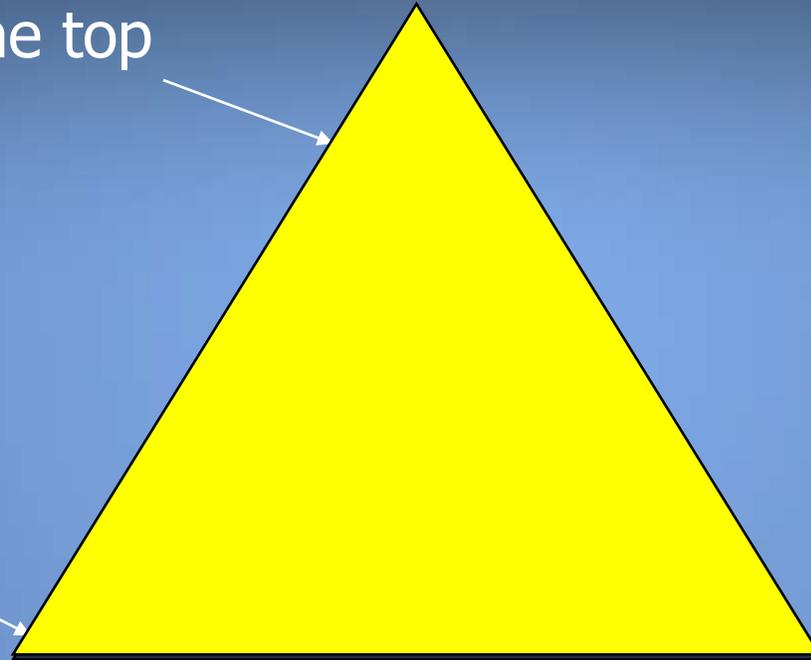
Source: U.S. Nuclear Regulatory Commission

Safety Culture is:

Triggered at the top



Measured at the bottom



Safety culture starts at the top of the organization and permeates the entire organization.

Do you have a good safety culture?

Do you have a good safety culture?

- “... it is worth pointing out that if you are convinced that your organization has a good safety culture, you are almost certainly mistaken.”
- “... a safety culture is something that is striven for but rarely attained...”
- “... the process is more important than the product.”

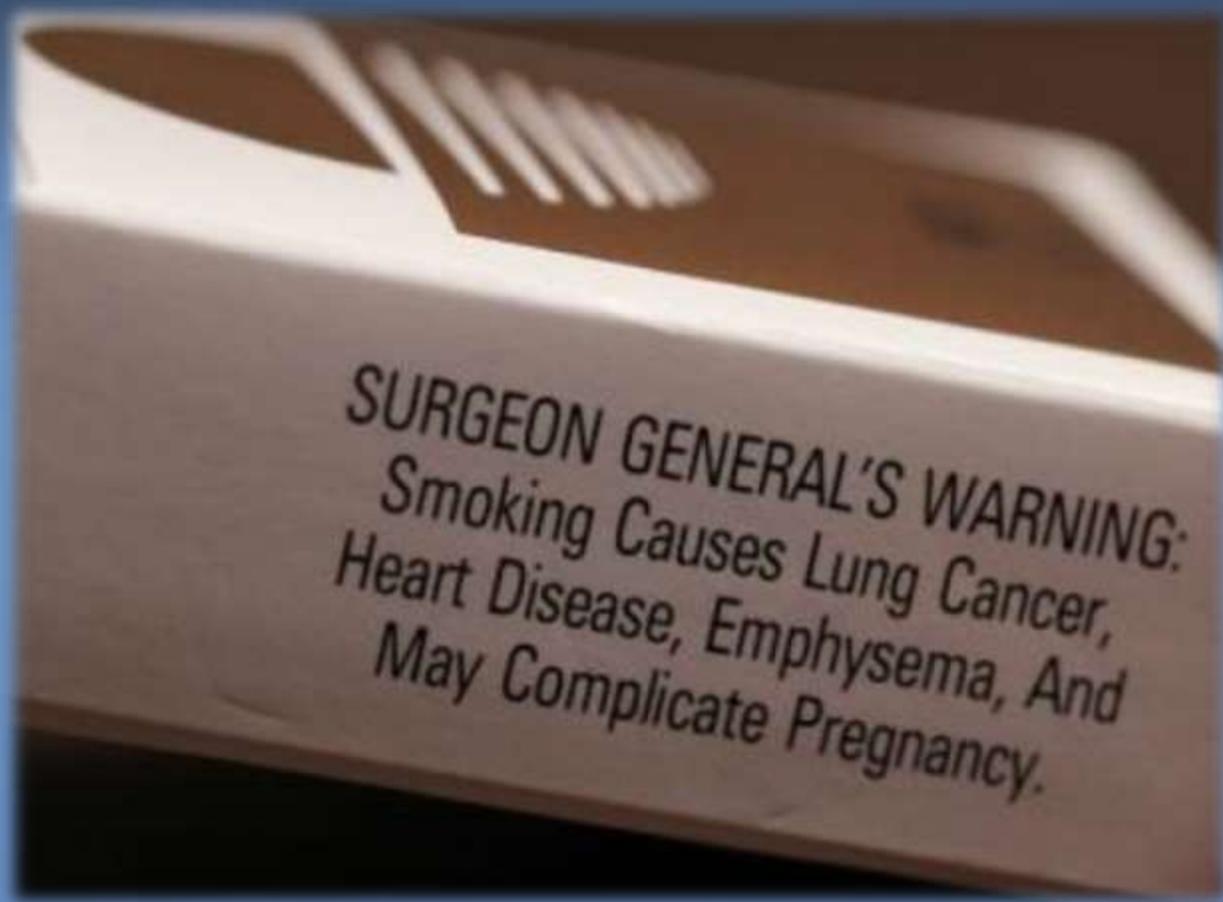
– James Reason, “Managing the Risks of Organizational Accidents.”

Creating a Future of Safety

ARE WE REALLY LIVING OUR VALUES?

Living the Values

- In a successful organization, everything you do is run through the filter of your core values to make sure you are being true to them.
- And, most importantly, you must live those values.





CVS Stops Tobacco Sales



“The sale of tobacco products is inconsistent with our purpose – helping people on their path to better health.”

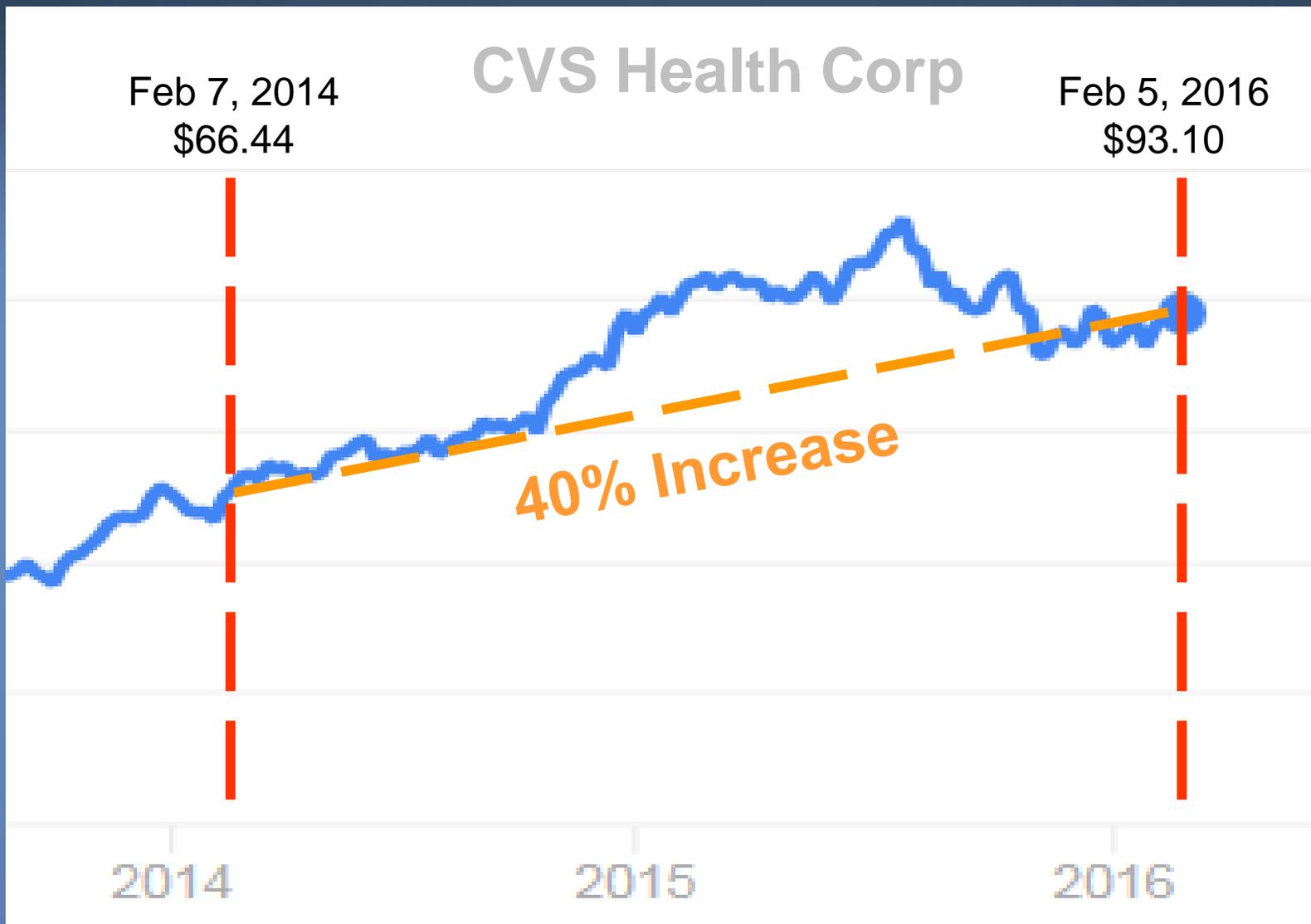
- Larry J. Merlo, CEO, CVS Health

“This move is clearly in-line with their stated purpose and values, a move we don’t see often enough today in corporate America. Relying on a strong foundation of values is often what sets market leaders apart from the pack.”

- Michael Woody, Ph.D. for Fox Business

“Think of values as the core guiding principles that act as the foundation of your organization. These principles should guide every decision and serve as your fallback in times of uncertainty.”

- Michael Woody, Ph.D. for Fox Business

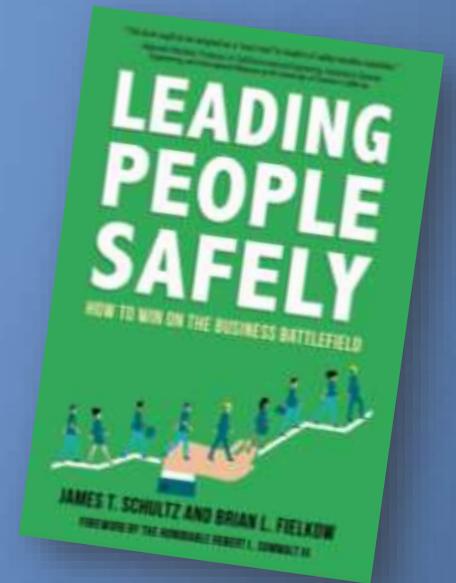


“Organizations with strong leaders are those organizations that ensure their values are aligned and lived throughout the organization.”

“They do the right things by caring for the safety and health of their employees and customers.”

“Because of their commitment to values and caring, they have greater potential to perform well financially.”

- “Leading People Safely,” p. xxvi









Sports
XTRA

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BUSY WEEK FOR BASEBALL

Negotiations to begin the delayed season are ongoing, and a new-look draft begins Wednesday.



WILL S. FRANKLIN AP

SPORTS

Clemson's Swinney affirms opposition to racism, support for social justice 1B



CHRISTOPHER P. FOLEY AP

Scattered clouds 80°/72° See 2A

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TUESDAY JUNE 9 2020

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The State

Ex-SCANA executive to plead guilty in SC nuclear fraud case

BY JOHN MONK
jmonk@thestate.com

COLUMBIA, S.C. — The number two executive of the defunct SCANA Corp. — whose top officials engineered the biggest business failure in the biggest South Carolina history: the \$10 billion V.C. Summer nuclear plant fiasco — has agreed to plead guilty to criminal conspiracy fraud charges in connection with the nuclear failure, according to a document filed Monday in U.S. District Court in Columbia.

The upcoming guilty plea of Stephen A. Byrne, 60, is a centerpiece of a Monday filing involving his alleged criminal actions. He will need to have his guilty plea formally accepted by a U.S. District Court judge before it becomes official. Byrne is charged with conspiring to commit mail fraud, the document said.

The document is a motion requesting a stay in a Securities and Exchange civil fraud lawsuit against Byrne and SCANA's former CEO, Kevin Marsh. That former civil lawsuit was filed in February. One big difference between

civil and criminal proceedings is that in a criminal proceeding, a defendant can be subject to a prison term.

The document alleges that "through intentional and material misrepresentations and omissions, Byrne and others deceived regulators and customers to maintain financing for the (nuclear) project and to financially benefit SCANA."

The Monday filing said there is "an ongoing criminal investigation" and indicated more criminal charges against other



FORN...
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2...

SEE SCANA, 6A

... will help connect jailed ... legal resources

Extra
EXTRA

Subscribers will find this bonus content at thestate.com/edition

ELECTION CHAOS

Voting delays and long lines marred voting in Georgia as five states held primary elections on Tuesday.



JOHN SCHNEIDER AP

SPORTS
How father's lessons inspired Muschamp's activism 1B



VOLUME 120, No. 114
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KEEPING YOU CONNECTED

WEDNESDAY JUNE 10 2020

\$2
Afternoon storm 80°/74° See 2A

The State

Feds: SCANA conspiracy hid truth of doomed nuclear plant

BY JOHN MONK
jmonk@thestate.com

COLUMBIA, S.C. — Documents made public Tuesday allege that former SCANA second-in-command Stephen Byrne and "others known and unknown" to federal

officials mounted a years-long cover up to hide huge losses in then-ongoing construction at the V.C. Summer nuclear plant.

For years, Byrne and unidentified "others" orchestrated a cover-up of costly errors at the nuclear construction site and "deceived regulators and customers in order to maintain

financing for the project and to financially benefit SCANA," court records say.

"As construction problems mounted, costs rose, and schedules slipped, the defendant Stephen A. Byrne, and others, hid the true state of the project," said an information — an official federal charging document —

filed in U.S. District Court in Columbia.

"The members of the conspiracy's actions and the associated cover-up allowed the project to continue until the contractor went bankrupt and the project was abandoned, resulting in billions of dollars of loss," the information said.

The false information that Byrne and his alleged fellow conspirators gave out to regulating authorities allowed SCANA to apply for numerous rate increases to help pay for the ongoing construction for the doomed nuclear project, rate increases

SEE SCANA REPORT, 6A

SC passes 15,000 COVID-19 cases

BY EMILY BOHATCH
ebohatch@thestate.com

COLUMBIA, S.C. — Following a record breaking day, Department of Health and Environmental Control officials announced Tuesday that South Carolina has surpassed 15,000 coronavirus cases.

On Tuesday, 434 more people

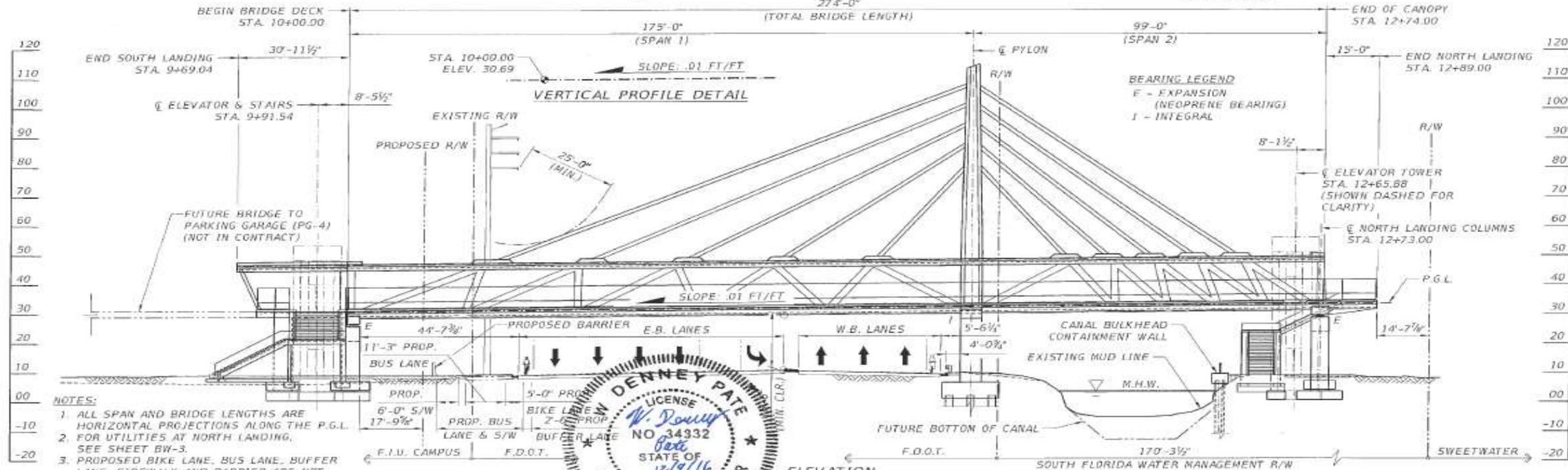
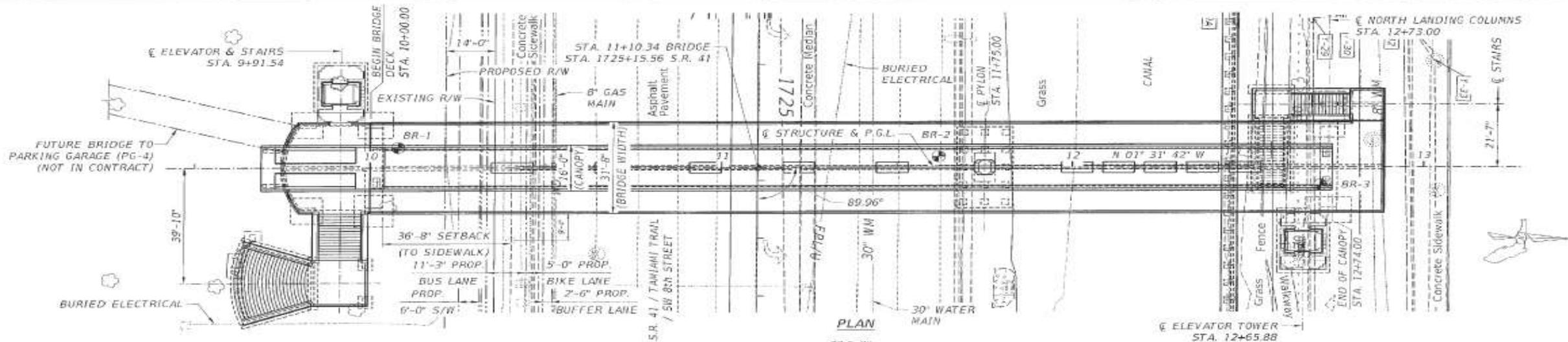
Richland County faces multiple issues at polls on primary day



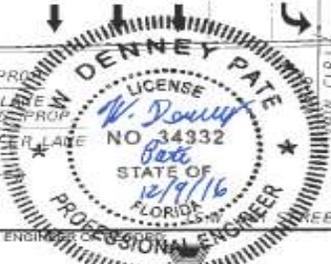
School Records

Creating a Future of Safety

ARE WE FOOLING OURSELVES?



- NOTES:**
1. ALL SPAN AND BRIDGE LENGTHS ARE HORIZONTAL PROJECTIONS ALONG THE P.G.L.
 2. FOR UTILITIES AT NORTH LANDING, SEE SHEET BW-3.
 3. PROPOSED BIKE LANE, BUS LANE, BUFFER LANE, SIDEWALK AND BARRIER ARE NOT INCLUDED IN THIS CONTRACT.



DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

ENGINEER OF RECORD
W. DENNEY PATE
 424 North Calhoun Street
 Tallahassee, Florida 32301
 FLORIDA CERTIFICATE OF AUTHORIZATION NO. 5618
 W. DENNEY PATE, P.E. - P.E. NO. 24332

DESIGNED BY: DCB
 CHECKED BY: MF
 DESIGNED BY: EDI
 CHECKED BY: MF

FIU FLORIDA INTERNATIONAL UNIVERSITY

PROJECT ID: 434688-1-08-01

GENERAL PLAN AND ELEVATION

UNIVERSITYCITY PROSPERITY PROJECT

SHEET NO. 8-4

40
YEARS
in 2018

Exclusively
Specializing
in Bridges



CREATING BRIDGES AS ART®

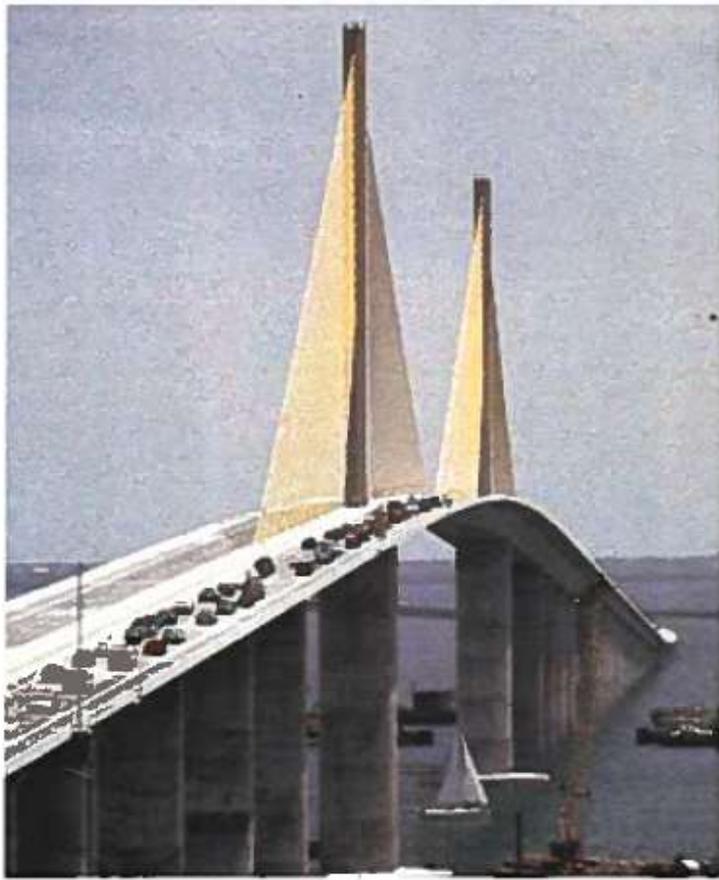


OVER 230 BRIDGES

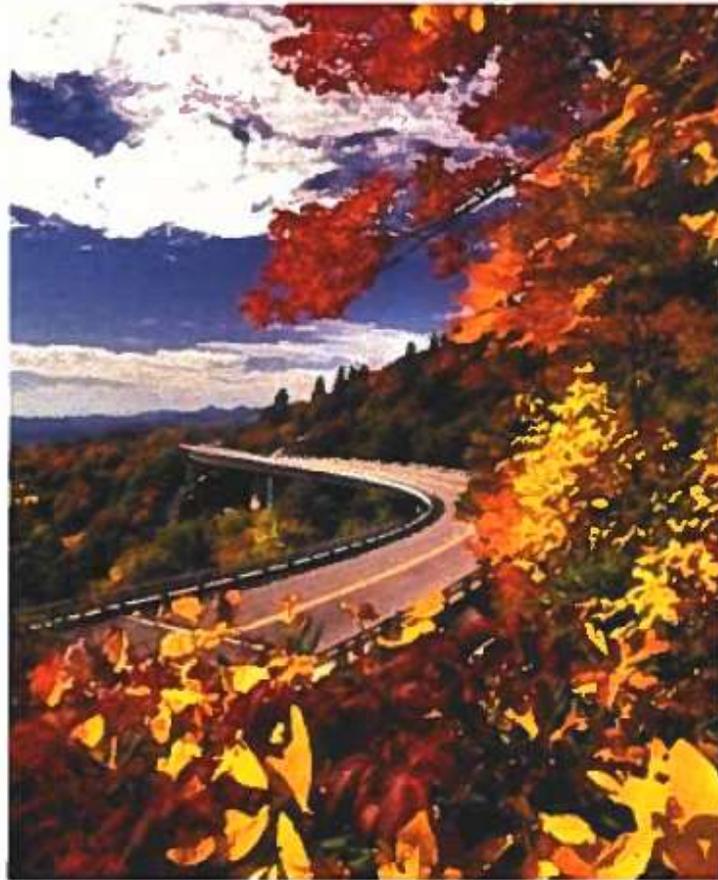
42 States
6 Nations

- Brazil
- Columbia
- Guyana
- Canada
- India
- Saudi Arabia

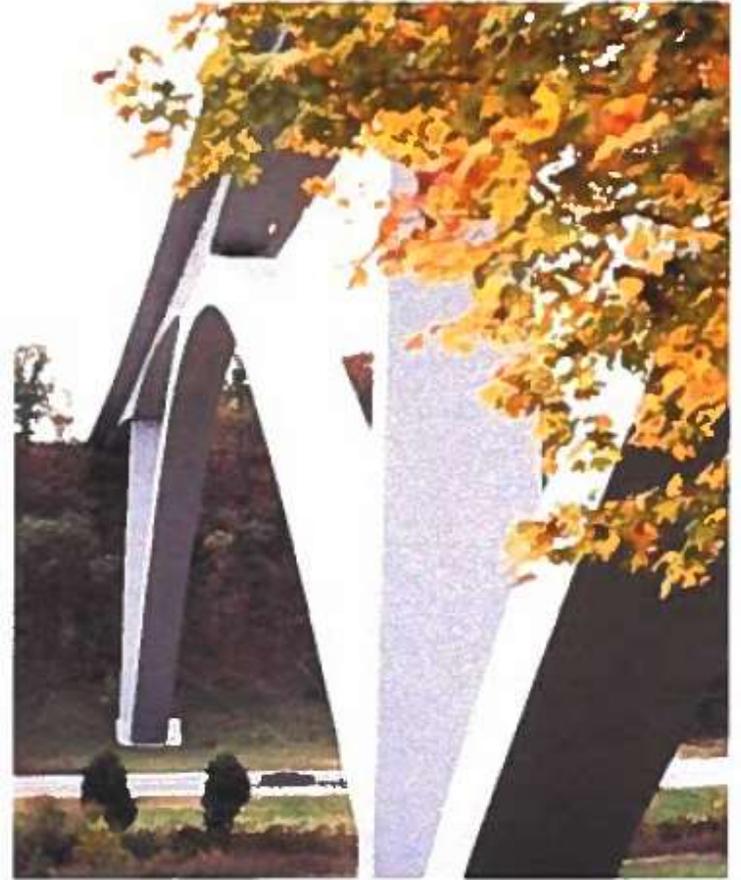




Sunshine Skyway Bridge, FL



Blue Ridge Parkway Viaduct, NC
National Park Service



Natchez Trace Parkway Arches, TN
National Park Service

3 Presidential Awards
through the National Endowment for the Arts
-US Presidents gave 5 of these awards for Bridges-



CREATING BRIDGES AS ART®

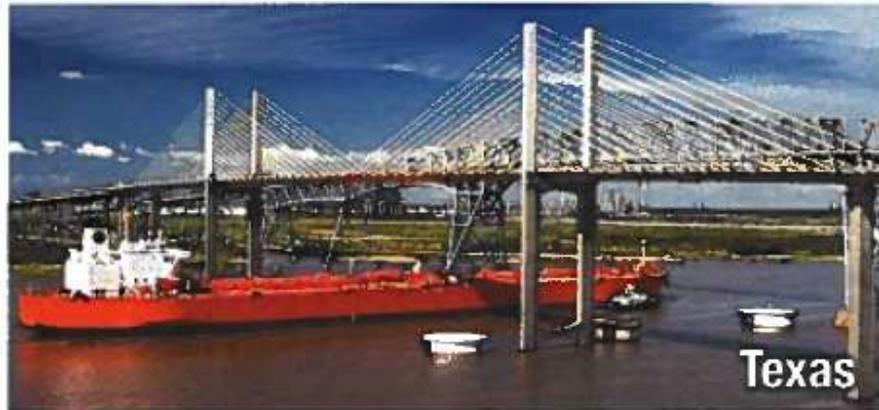
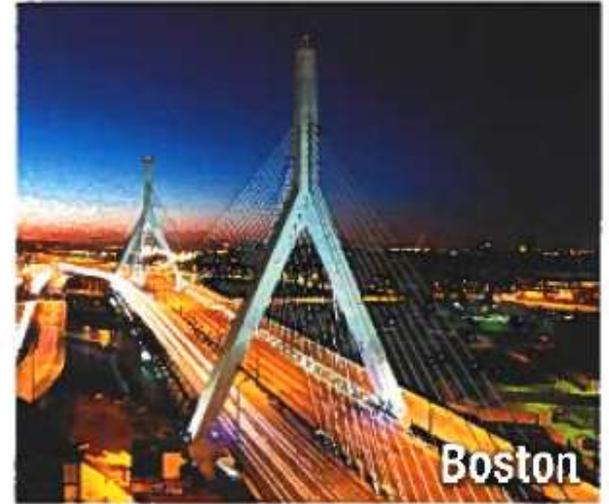
FIGG Has Delivered More Concrete Cable-Stayed Bridges than any Firm in America

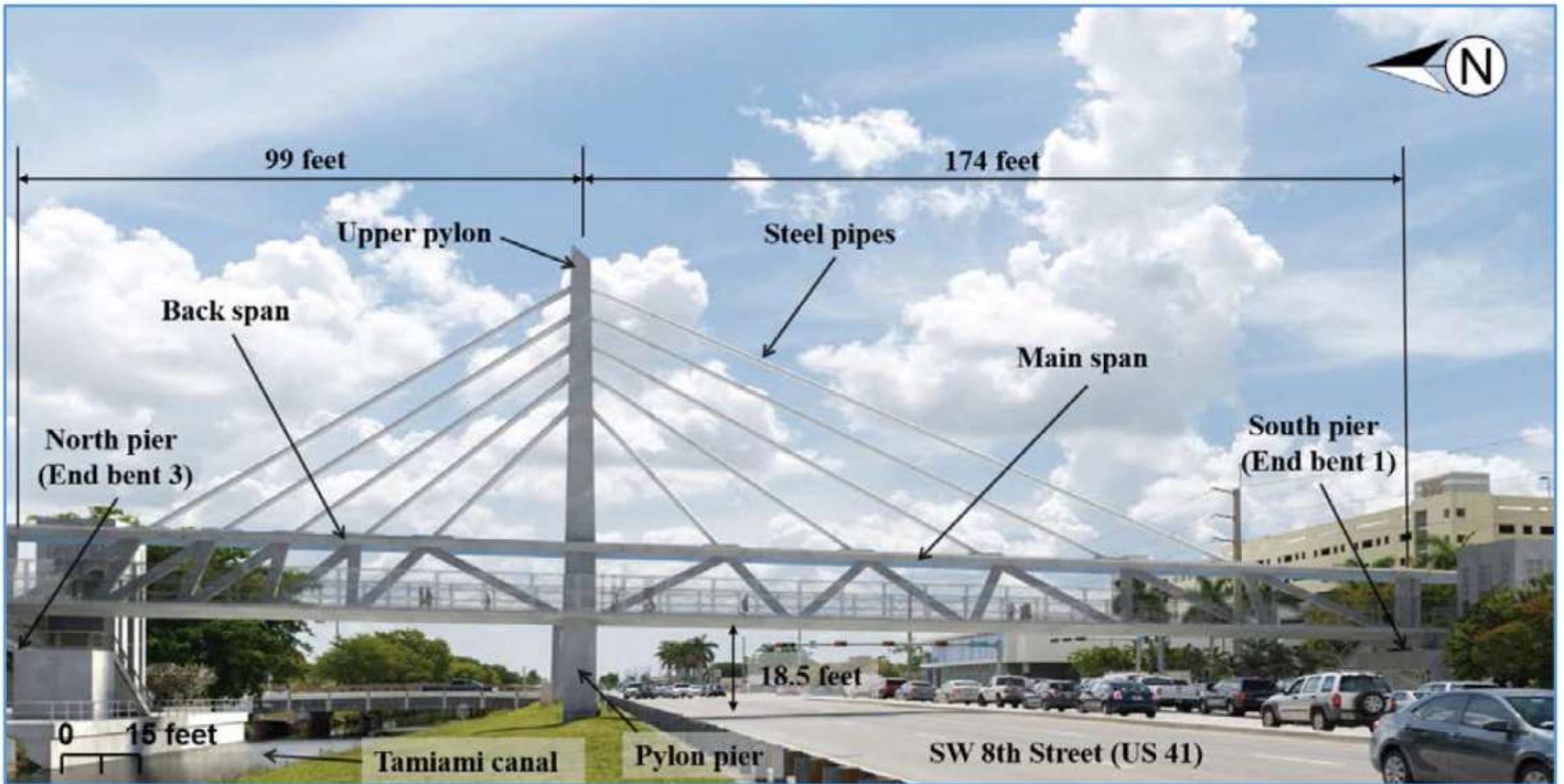
14 built concrete cable-stays in U.S.

12 FIGG responsible charge

**7 Engineer of Record -
A first for each state**

**5 Precast concrete -
Engineer of Record For All of them**





Miami, Florida. March 15, 2018





Diagonal Supports

Canopy

Walkway

ARCHITECT



NTSB

Accelerated Bridge Construction





March 10, 2018





Date	Time	Communication Method	Response
March 13	9:45 a.m.	Email from FIGG design manager to MCM	"We do not see this as a safety issue"
--	4:13 p.m.	Voice mail message from FIGG EOR to FDOT	"But from a safety perspective, we don't see that there's any issue there, so we're not concerned about it from that perspective"
--	5:18:22 p.m.	Email from FIGG design manager to MCM	"Again, we have evaluated this further and confirmed that this is not a safety issue"
March 14	10:50 a.m.	Email from MCM to Structural Technologies	"FIGG has further evaluated and confirmed that the cracks encountered on the diaphragm do not pose a safety issue and/or concern"
March 15	9:00 a.m.	Presentation by FIGG EOR at meeting with FDOT; FIU; MCM; Bolton, Perez (and others)	"And, therefore, there is no safety concern relative to the observed cracks and minor spalls"
--	--	Meeting minutes prepared by Bolton, Perez	"FIGG assured that there was no concern with safety of the span suspended over the road"
--	--	Meeting minutes of March 15 prepared by FIGG	"Based on the discussions at the meeting, no one expressed concern with safety of the span suspended over the road"

FIGG Presentation on Day of Collapse

Conventional Method

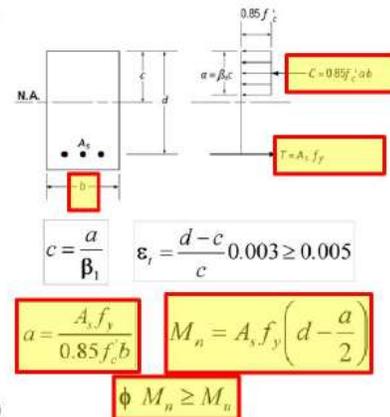
Rectangular Beam Analysis

Data:

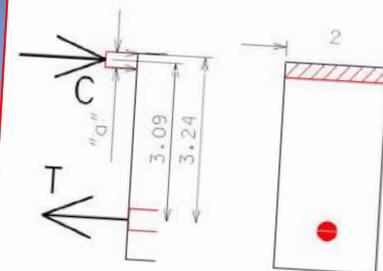
- Section dimensions – b, h, d, (span)
- Steel area - A_s
- Material properties – f_c , f_y

Required:

- Nominal Strength (of beam) Moment - M_n
- Required (by load) Design Moment – M_u
- Load capacity



Bending Check – Beam Theory



- Steel Area = 13.1 in²
- $T = (13.1)(60 \text{ ksi}) = 786 \text{ kips}$
- $f'_c = 8.5 \text{ ksi} = 1224 \text{ ksf}$
- $(a)(.85 f'_c)(b) = C = 786 \text{ kips}$
- Solving, "a" = 0.38 ft
- $M_n = (T)(d - (a/2)) = 786 \times 3.09' = 2398 \text{ kip-ft (nominal capacity)}$
- $\Phi = 0.9$, so $(\Phi)(M_n) = 2158 \text{ kip-ft}$
- Which is larger than $M_u = 2015 \text{ kip-ft}$
- Check OK

Total Nodal Shear Stability

$$V_{mi} = cA_{cv} + \mu (A_s f_y + P_c)$$

- $c \times A_{cv} = 57.6 \text{ k/sf} \times 23.62 \text{ sf} = 1360 \text{ kips}$
- $M_u \times A_s F_y = 1.4 \times 22.72 \times 60 = 1908 \text{ kips}$
- $M_u \times P_c = 1.4 \times 520 \text{ kips} = 730 \text{ kips}$
- $3947 \text{ kips Total} = V_{ni}$
- FIGG's general preference is to neglect the Cohesion portion when practical. Thus, V_{ni} without "C" = 2638 kips
- $\Phi = 0.9$
- $(\Phi)(V_{ni}) = 3552 \text{ kips with "c"}$
- $(\Phi)(V_{ni}) = 2374 \text{ kips without "c"}$

Conclusions and Recommendations

- The diagonal type cracks, in excess of FDOT criteria, should be sealed with approved methods and materials (Epoxy injection, etc.)
- The spalled areas have not been replicated by the engineering analyses. However ...
- The spalled areas are minor and it is recommended that they be prepared using normal procedures and poured back along with the upcoming "pylon diaphragm" pour (different from and prior to the falsework pours)

Conclusion

- Based on conservative calculations, it is concluded that the design meets LRFD strength requirements for this temporary condition ...
- And therefore there is no safety concern relative to the observed cracks and minor spalls

Conclusion

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An Impressive Operation



An Impressive Operation

- Full time crew
- Impeccable maintenance
- High training standards
- Going above minimum standards
- Positive audit comments

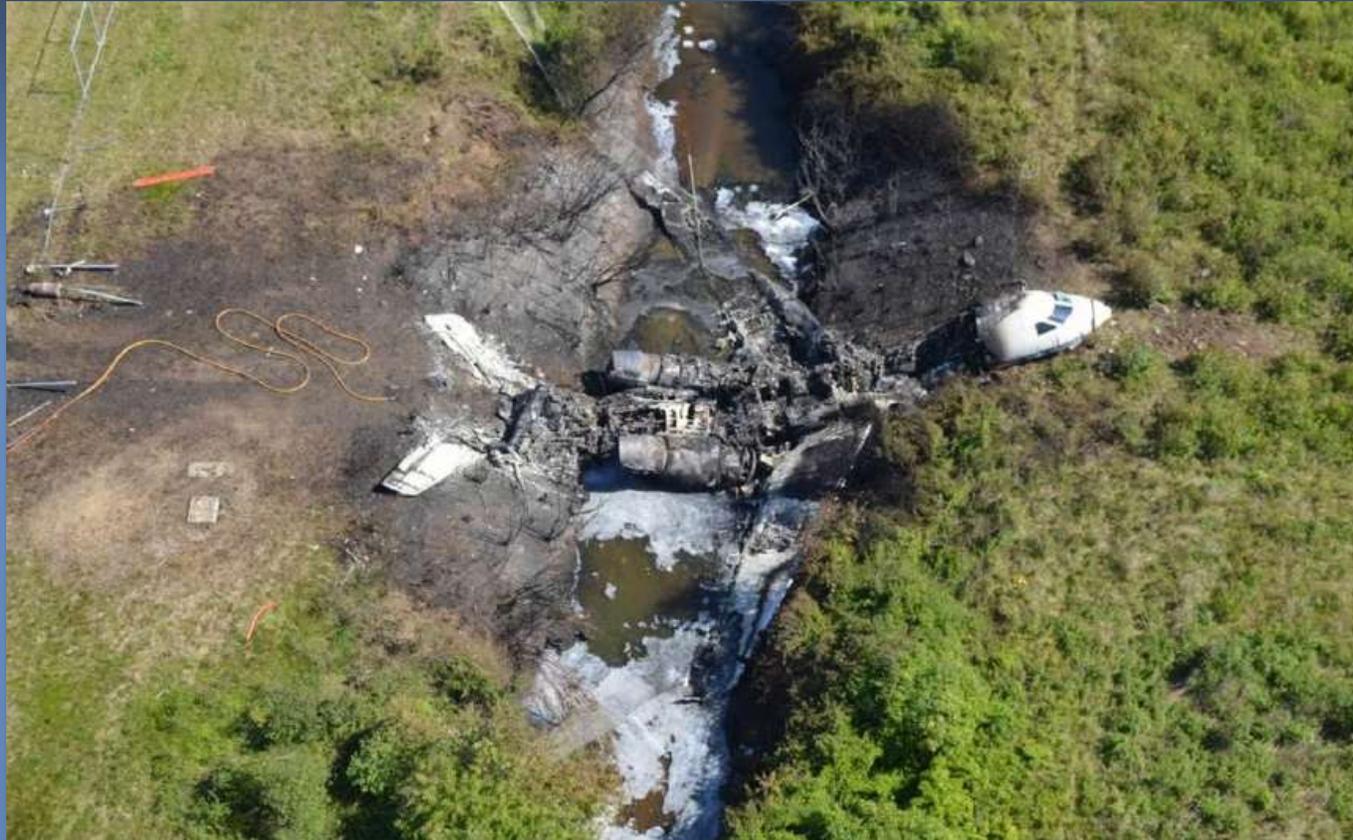
Positive Audit Comments

- “The SMS of this operator is well-developed”
- “Best practices are consistently employed in all facets of the program”
- “Continuous SMS improvement is actively pursued”
- “The Flight Ops Manual is remarkably well-written and comprehensive”
- “Safety culture within the department is shared among all team members”
- “Open reporting of hazards is consistently encouraged by management”
- “Solid safety program, maturing nicely”

**“You can fool the auditors,
but never fool yourself.”**

- John Fenton

And, fool the auditors, they did...



Gulfstream G-IV Crash
Bedford, MA
May 31, 2014
7 Fatalities

And, perhaps they even fooled themselves.

“Good can be Bad”

- With good safety performance, people/organizations can easily become complacent.
- Don't ever believe that a lack of accidents means you are “safe.”
- To counter this complacency, there must be a leadership obsession with continuous improvement.

- Courtesy of Jim Schultz

Creating a Future of Safety

**ARE WE MEASURING AND
REWARDING THE RIGHT THINGS?**

Metro North Railroad



Metro North Railroad

“We were geared towards using the on-time performance number as a metric. And the philosophy was if we can deliver trains on time, all of the supporting activity that we did, track maintenance, signal maintenance and rolling stock maintenance must be performing well if we can deliver that high degree of service reliability.”

-Metro North SVP Operations

What do you measure and reward?

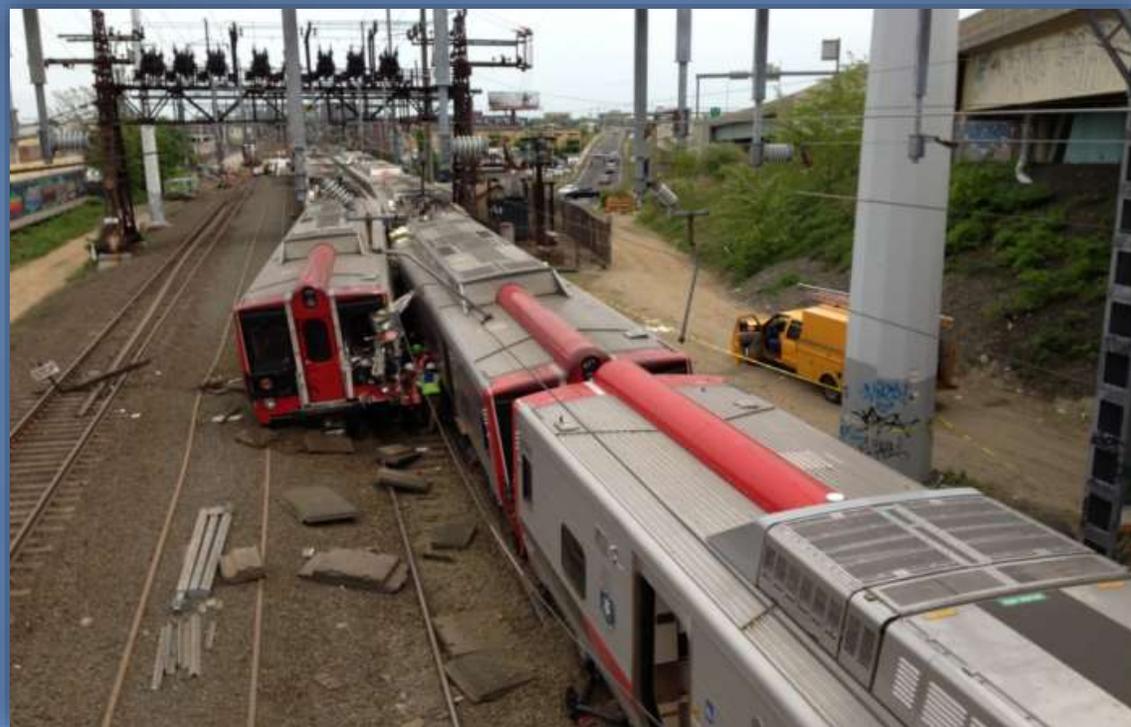
- Are you measuring the right things?
- Are they the most appropriate predictors of catastrophic events?



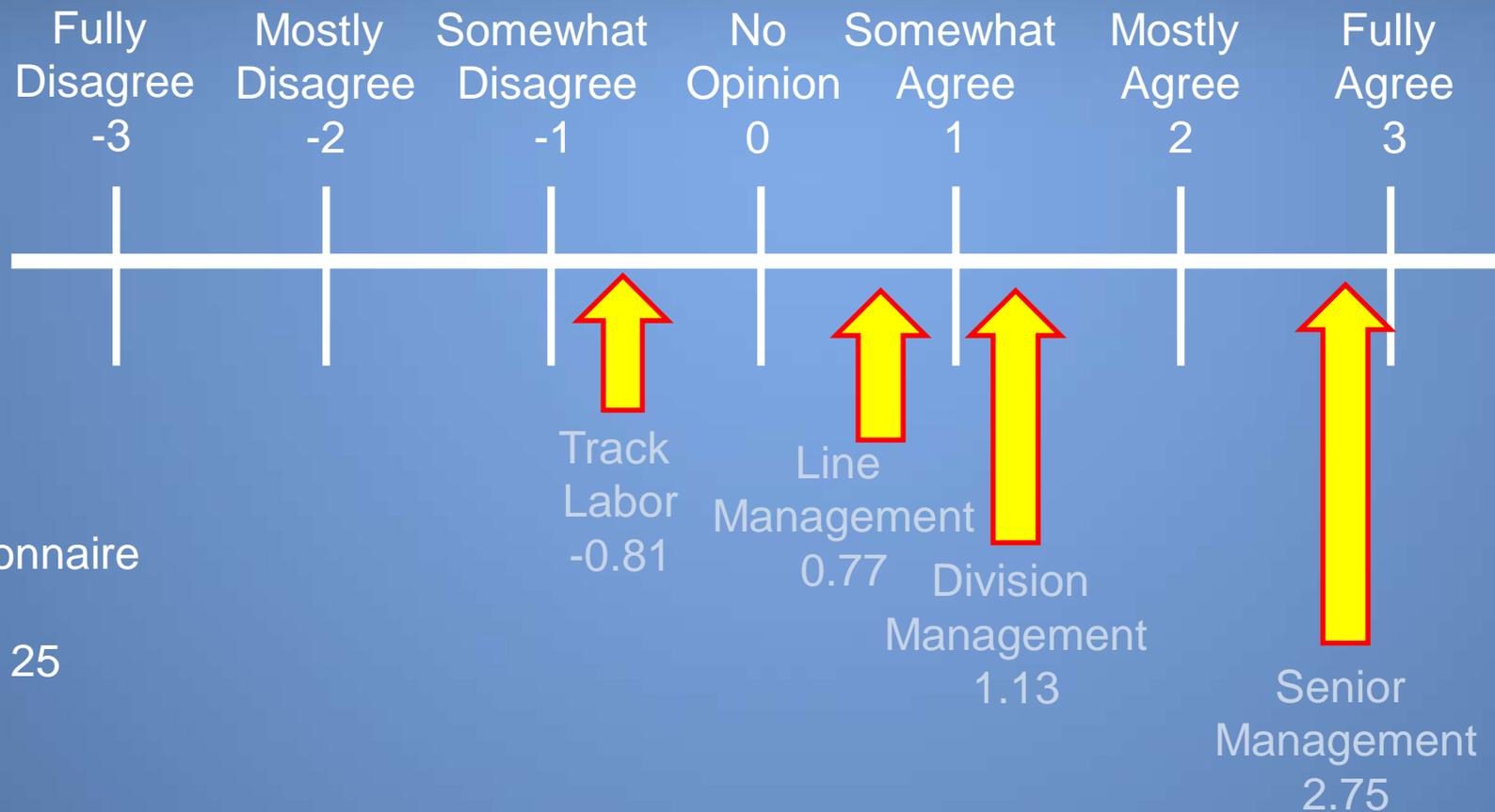
Creating a Future of Safety

**ARE WE TRULY PROVIDING SAFETY
LEADERSHIP?**

Metro-North Railroad



Metro North management is committed to workplace safety and participates regularly in safety events.



NTSB questionnaire
n = 156
Management 25
Labor 131

Management does not pressure staff to maintain service or operations, potentially at cost of safety.



Employee Comments

- “Sometimes I feel safety is priority one as long as it's convenient.”
- “Metro-North pays lip service to safety. On time performance & budgets take precedence over safety.”
- “The railroad only cares about the on-time performance.”
- “It’s all about on-time performance and safety rules are thrown out the window to keep on time performance.”
- Management has no clue.”

How leaders influence safety

“The safety behaviors and attitudes of individuals are influenced by their perceptions and expectations about safety in their work environment, and they pattern their safety behaviors to meet demonstrated priorities of organizational leaders, regardless of stated policies.”

- Dov Zohar, as cited in NTSB accident report

**“The best way to predict the
future is to create it.”**

- Peter Drucker

Creating a Future of Safety: Five Leadership Questions

1. How strong is our safety culture?
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National Transportation Safety Board