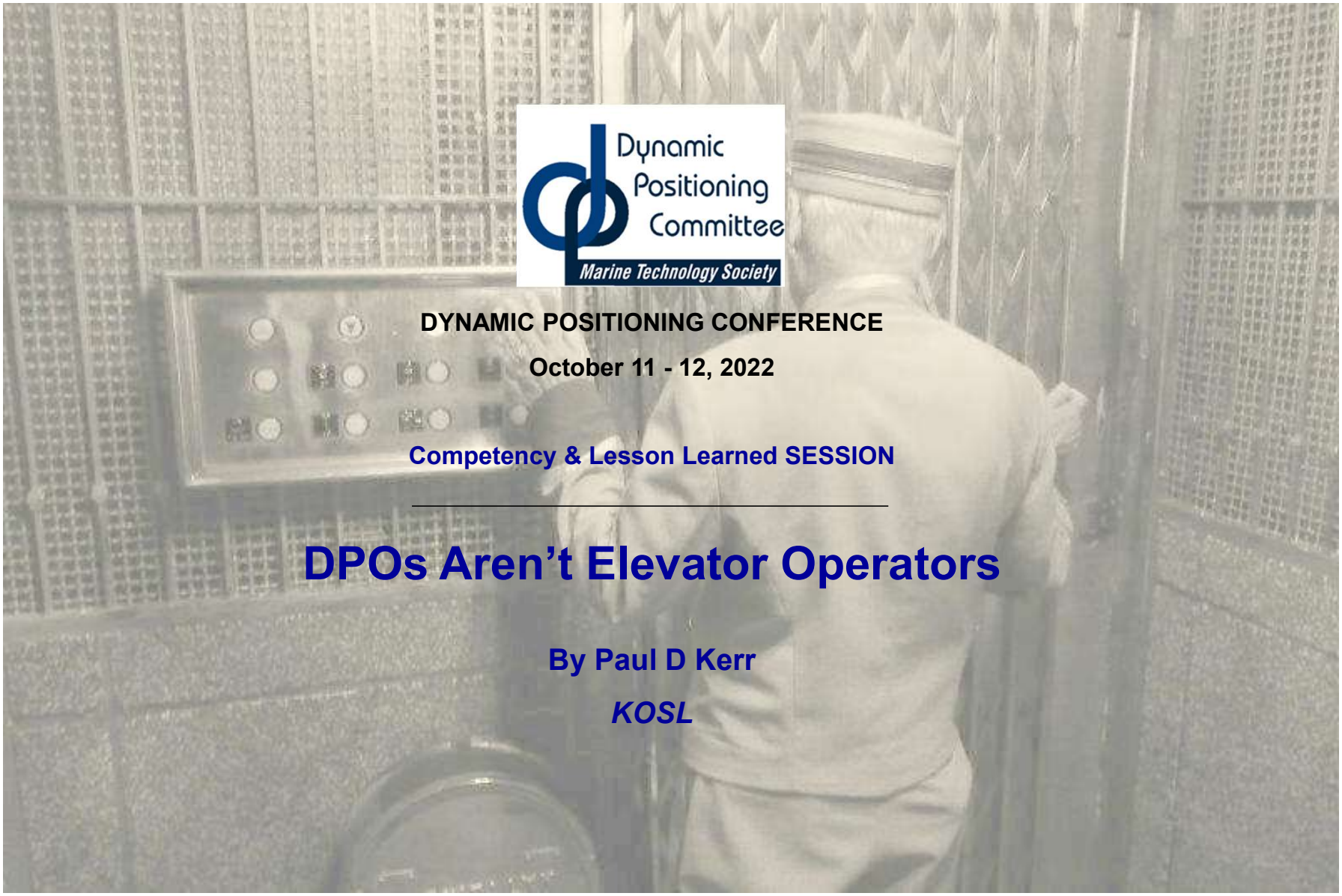


Dynamic Positioning Committee
Marine Technology Society

DYNAMIC POSITIONING CONFERENCE

October 11 - 12, 2022

Competency & Lesson Learned SESSION

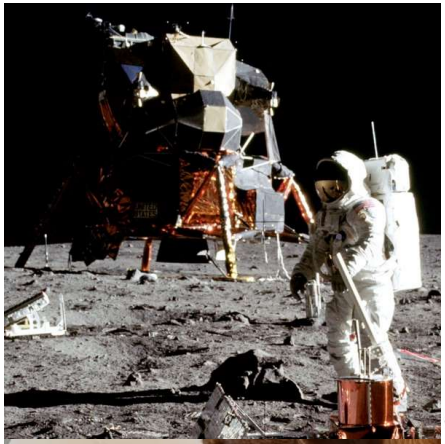
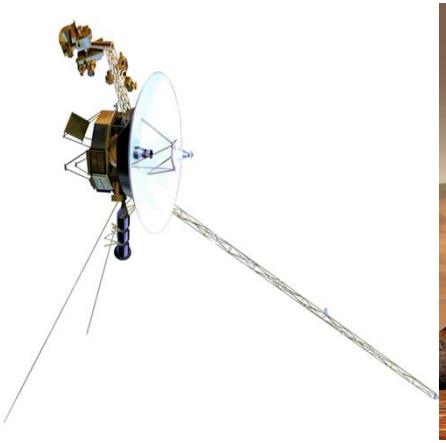
DPOs Aren't Elevator Operators

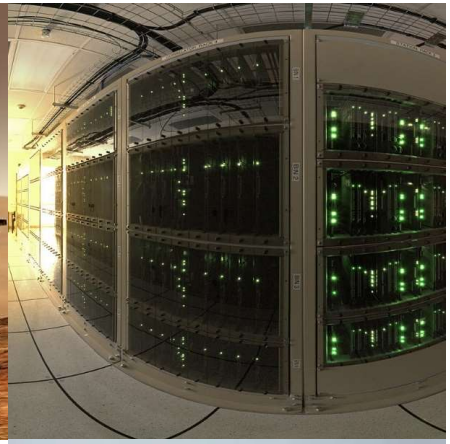
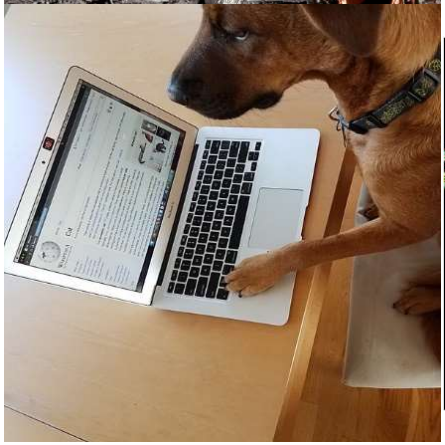
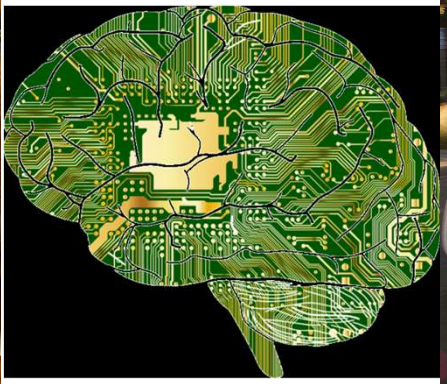
By Paul D Kerr

KOSL

Introduction & Metaphor

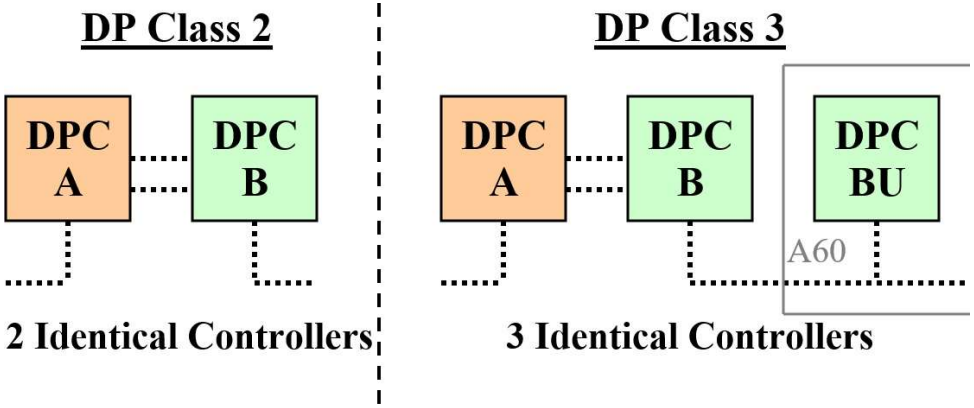
Problem 1 – Utopian Promises

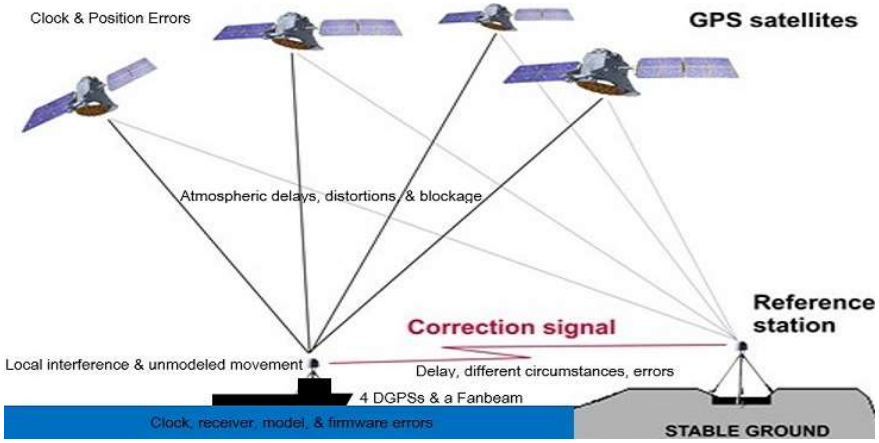




All this but no autonomous DP?

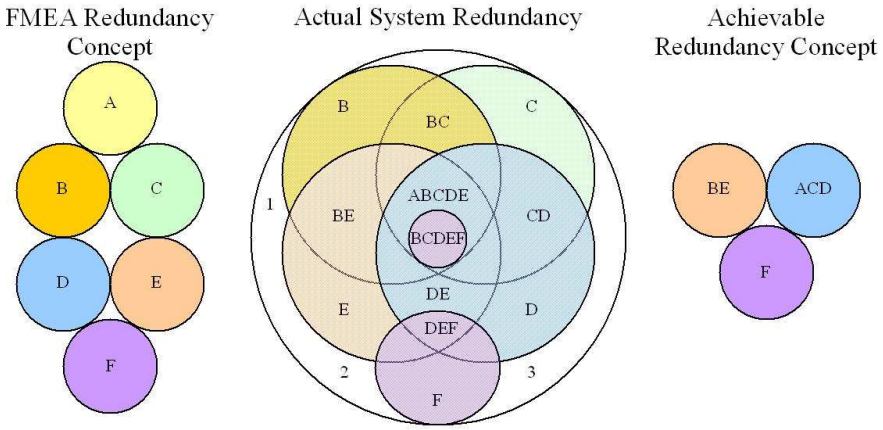
Problem 2 – Compensating for Improved Reliability

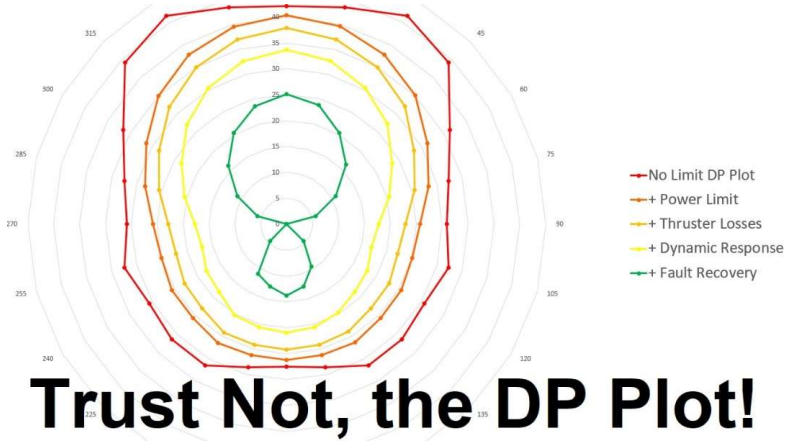


Anyone See a Problem with Both? Which one is better?

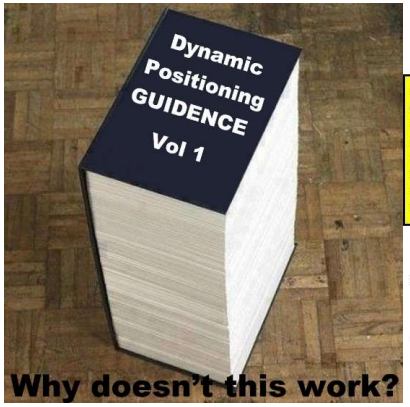


Problem 3 – Paperwork Solutions



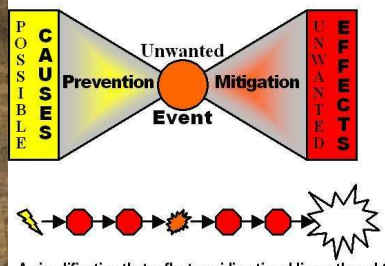


Trust Not, the DP Plot!



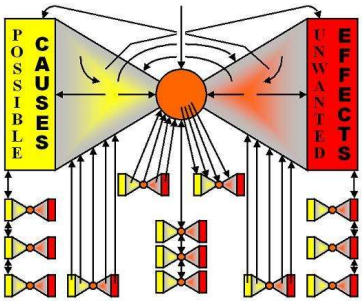
Why doesn't this work?

Risk Bow Tie Model



A simplification that reflects unidirectional linear thought.
Causes: Malfunctions, Mistakes, Design tradeoffs, Hazards
Prevention: Setup, Procedures, Protections, Barriers, Alarms
Mitigation: Endurance, Delay, Auto/manual Correction, etc.

Reality (Simplified)



Reflects the Law of Unintended Consequences by including internal & external interactions, and unknowns.

As usual, Scott Adams got there first and expressed it well.
(Slight alteration of dilbert.com/strip/2000-08-31)

Problem 4 – The Invisible Hand

Solutions 1 – Remove Faults

Incorrect use of a DPO

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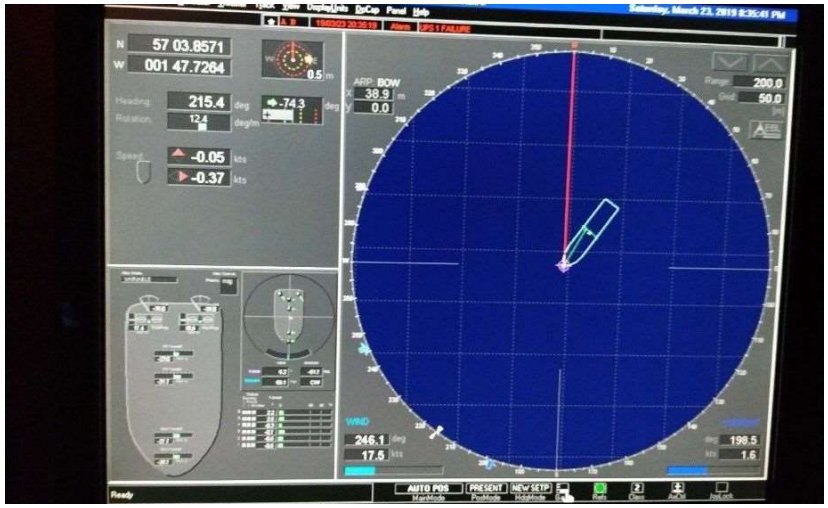
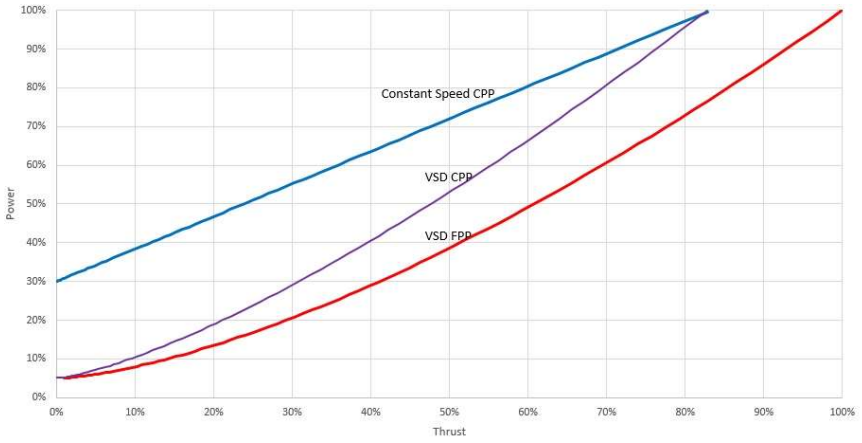
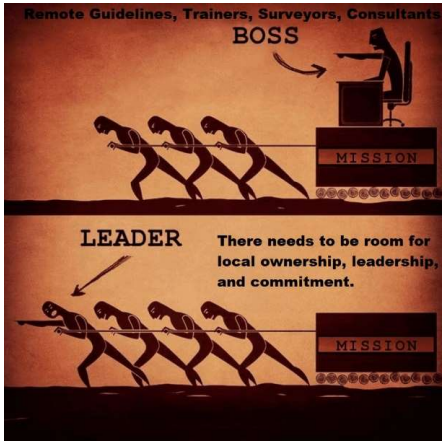
Solutions 2 – Practice & Simulation

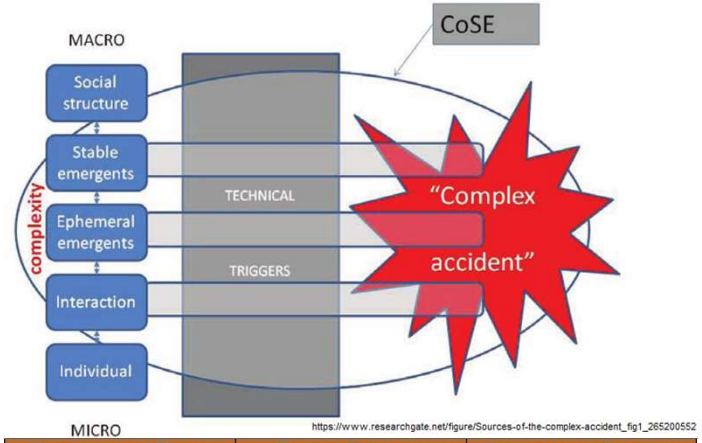
Solutions 3 - Engagement





Solutions 4 - People





The successes and failures of individual DPOs are the results of group efforts, focuses, and cultures, from the individual ship, to the company, to the industry.

Key Areas of Focus	Safety Culture	Compliance Culture
Leadership	Participative Visionary "Walk the Talk	Directive Command and Control "Talk the Walk"
Safety Management Programs	Continuous Improvement Evidence Based Preventative	Audits Directives Reactive
Employee Engagement	Upfront Buy In Hazard Indentification and Mitigation	Do as told Wait to be told
Safety Measures/ KPI's	Leading Indicators Relevant Transparent	Trailing Indicators Non-Conformances Violations / Incidents

People (continued)

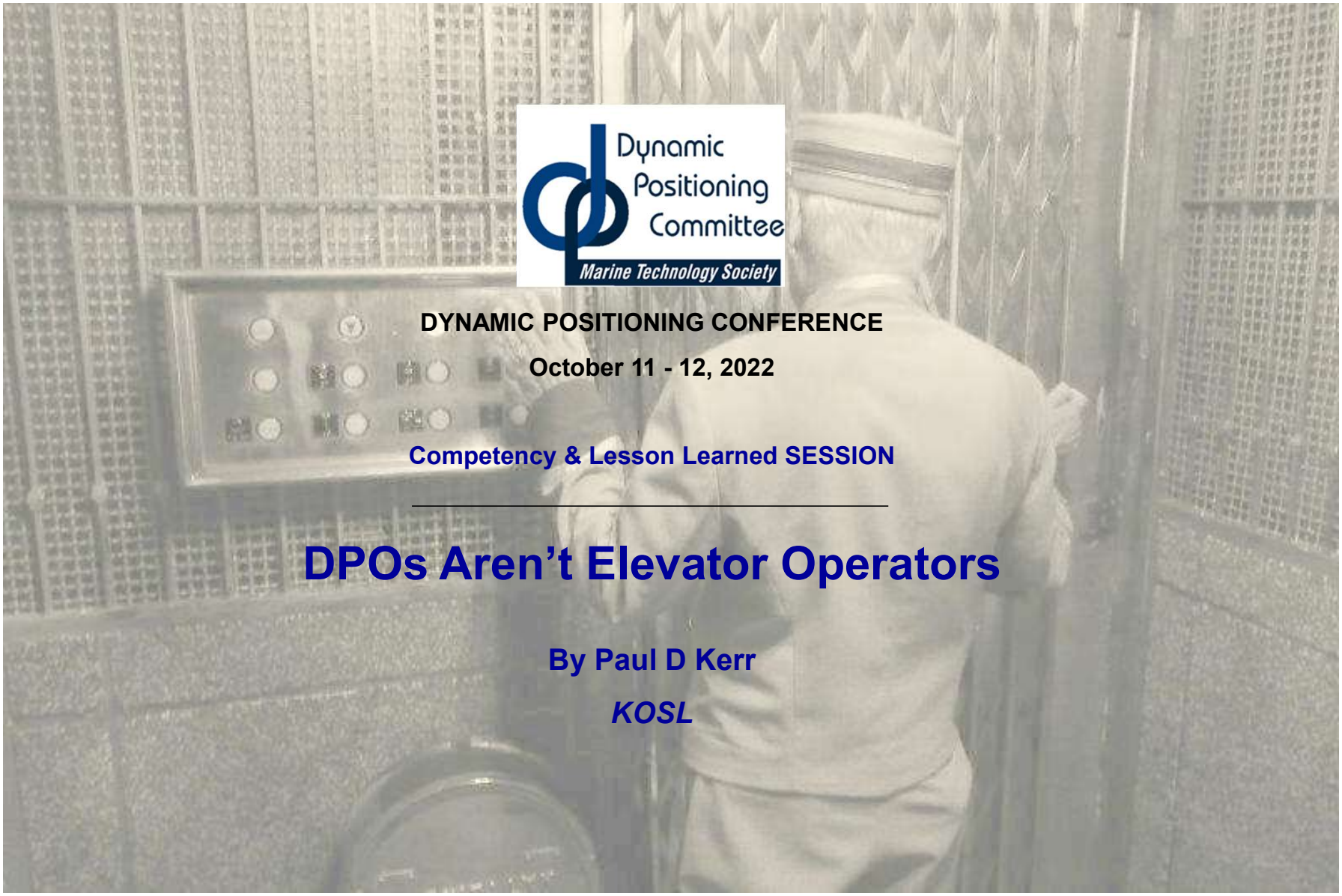
- Culture is vital (team)
- Zero Tolerance kills
- Accept Bad News
- Not Everyone Can DPO
- Micromanaging Degrades
- Encouragement Builds
- Responsibility Grows
- Attitudes & Habits Vital
- Support is Reciprocated
- Encourage Improvement
- Certification isn't Work
- Delegation Empowers
- Recognition Builds
- Showing Up Confirms
- Everything needs to be Constantly Renewed

Application

- **DPOs –** Develop Good Habits & Attitudes, Question, Learn, Prepare, Encourage
- **Owners** – Support & Encourage Good Local Culture & Practices
- **Designers** – Create Fault Resistant Designs with Good Operator Visibility & Control
- **Consultants** – Produce Useful, Readable, & Accurate Documents, Training Trials
- **Trainers** – Improve Training of Technical & Human Aspects, Classroom ≠ Work
- **DPEs** – Much of this applies to the DP duty engineer/ETO, They also need Supported
- **Clients** – Looks for the Signs, Provide Tools not Burdens, Encourage Existing Culture
- **Class** – Support Class Societies that Maintain Higher Standards (e.g. DNV DP Plots)
- **Guidelines** – Trim & Focus on Practical Application & Reinforcing Basic Principles

Should DPOs be Treated like Elevator Operators?

- **Safety Critical DP Systems are more Complex**
- **Complex Control Systems need Operators for Safety**
- **Most DP is Safety Critical & Complex, so Most DPOs will remain Needed**
- **DPOs' Function is a Critical, Last Line of Defense**
- **It Needs Properly Supported to Succeed**
- **There are Known Problems that need Resolved & Mitigated**
- **Support Your Local DPOs (& DPEs)**



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