Human Systems
integration division

Designing Flightdeck Procedures: A 4P Approach

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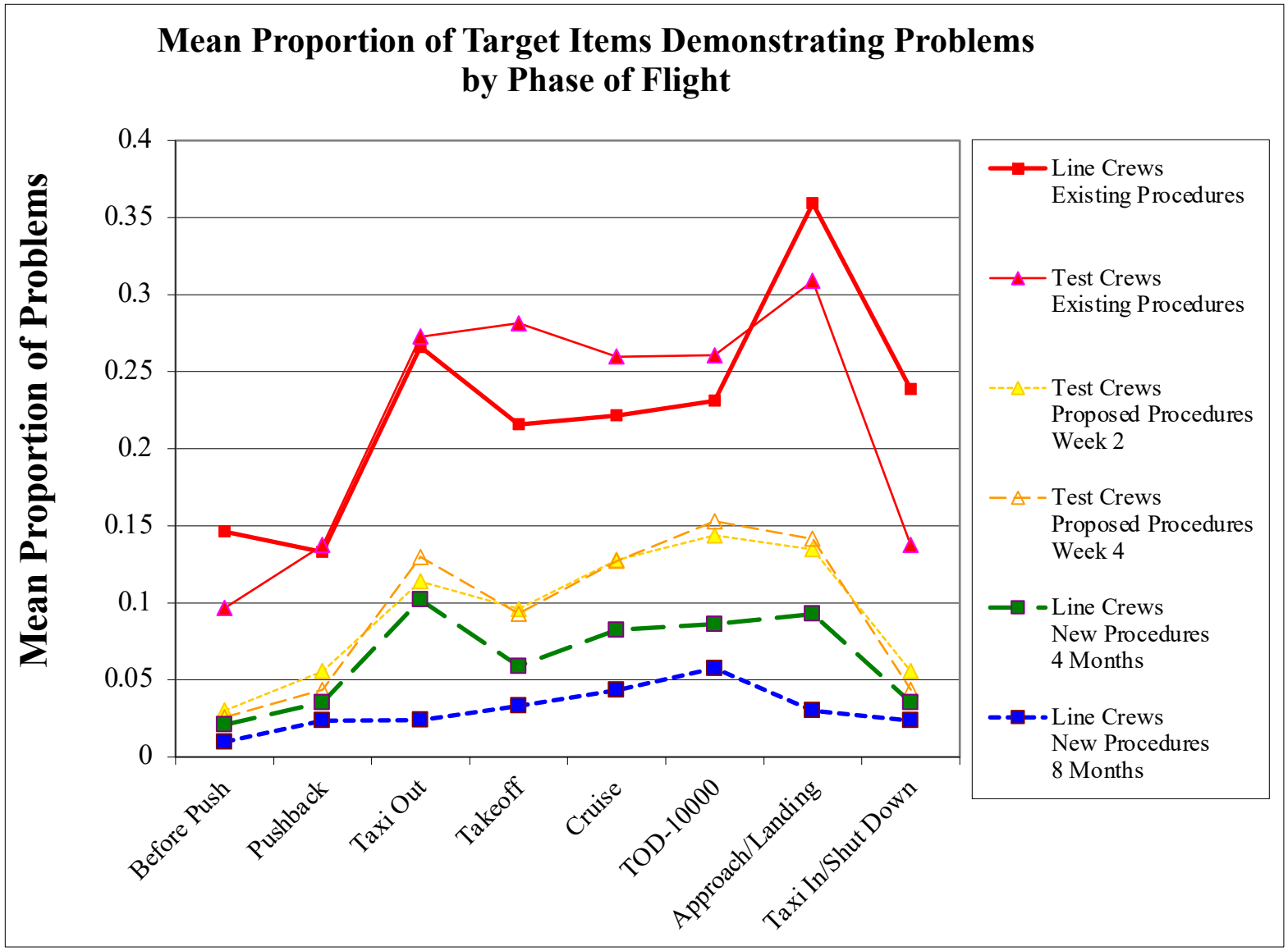
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A Collaborative Project with a major airline

- A complete redesign of all normal operations procedures and checklists.
- A detailed analysis of existing procedures and of the reality of the operation (incl. line observations, workarounds, techniques).
- An iterative procedure design, development, and testing process.
- An extensive validation and evaluation process.


Mean Proportion of Target Items Demonstrating Problems
by Phase of Flight
Mean Proportion of Problems
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Before Push
Pushback
Taxi Out
Takeoff
Cruise
TOD-10000
Approach/Landing
Taxi In/Shut Down
Line Crews
Existing Procedures
Test Crews
Existing Procedures
Test Crews
Proposed Procedures
Week 2
Test Crews
Proposed Procedures
Week 4
Line Crews
New Procedures
4 Months
Line Crews
New Procedures
8 Months

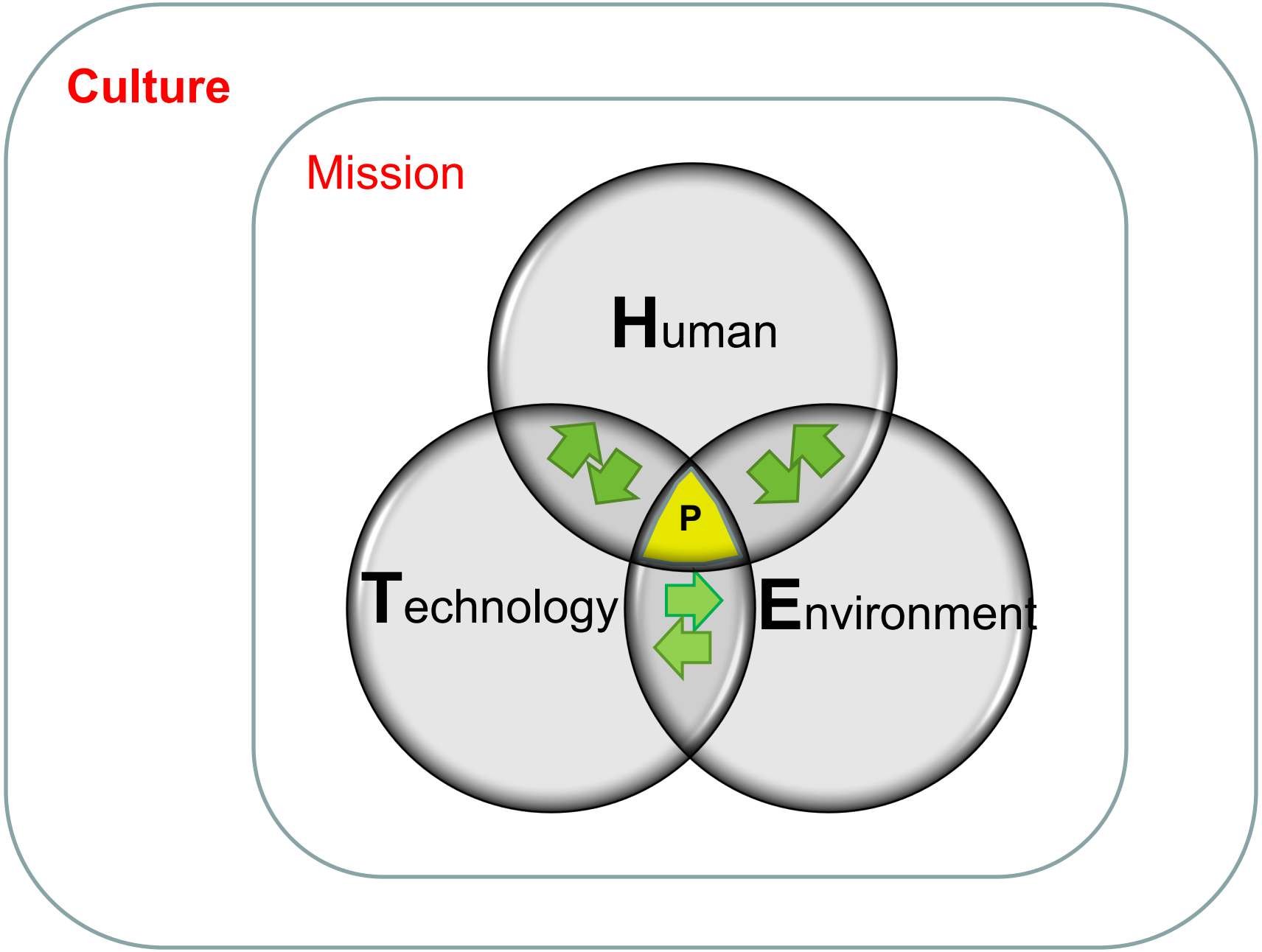
So what did we get?

- A significant reduction in error across all phases of flight.
- A significant improvement in standardization across crews.
- A very strong acceptance of the new procedures.
- A significant improvement in crews' experience.

But how did we do it?

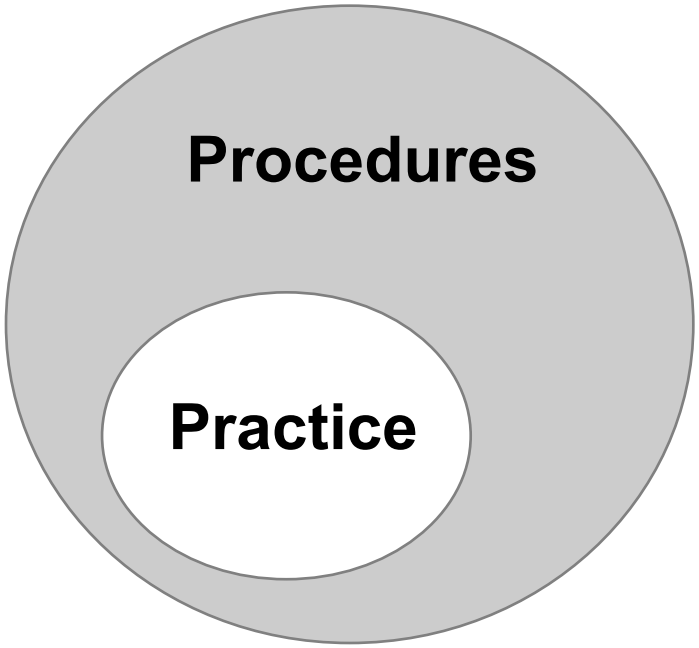
By Taking a Comprehensive Approach.

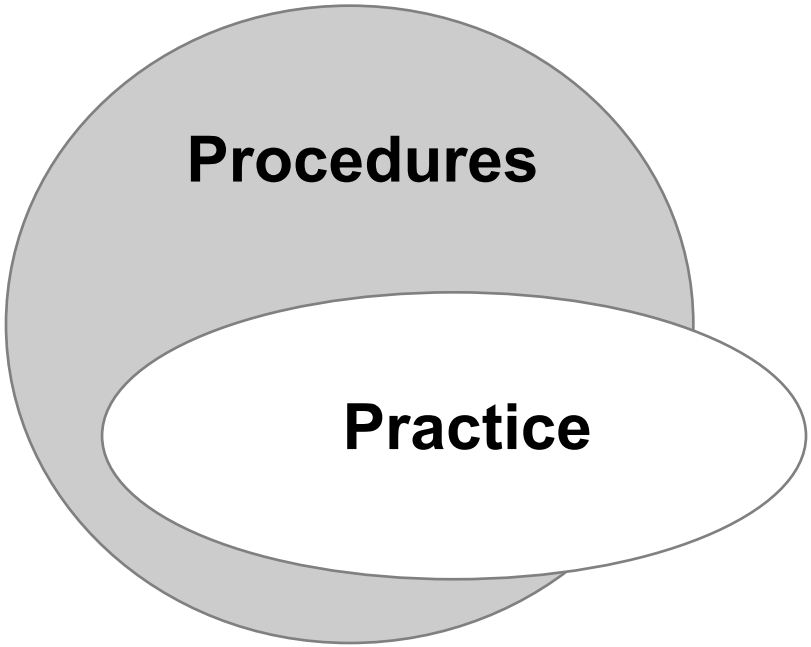
- By understanding the complexity of the operation and of the operator.
- By creating a clear, coherent, consistent, and comprehensive guidance throughout.
- The 4C's, THE Model, and the 4P's.

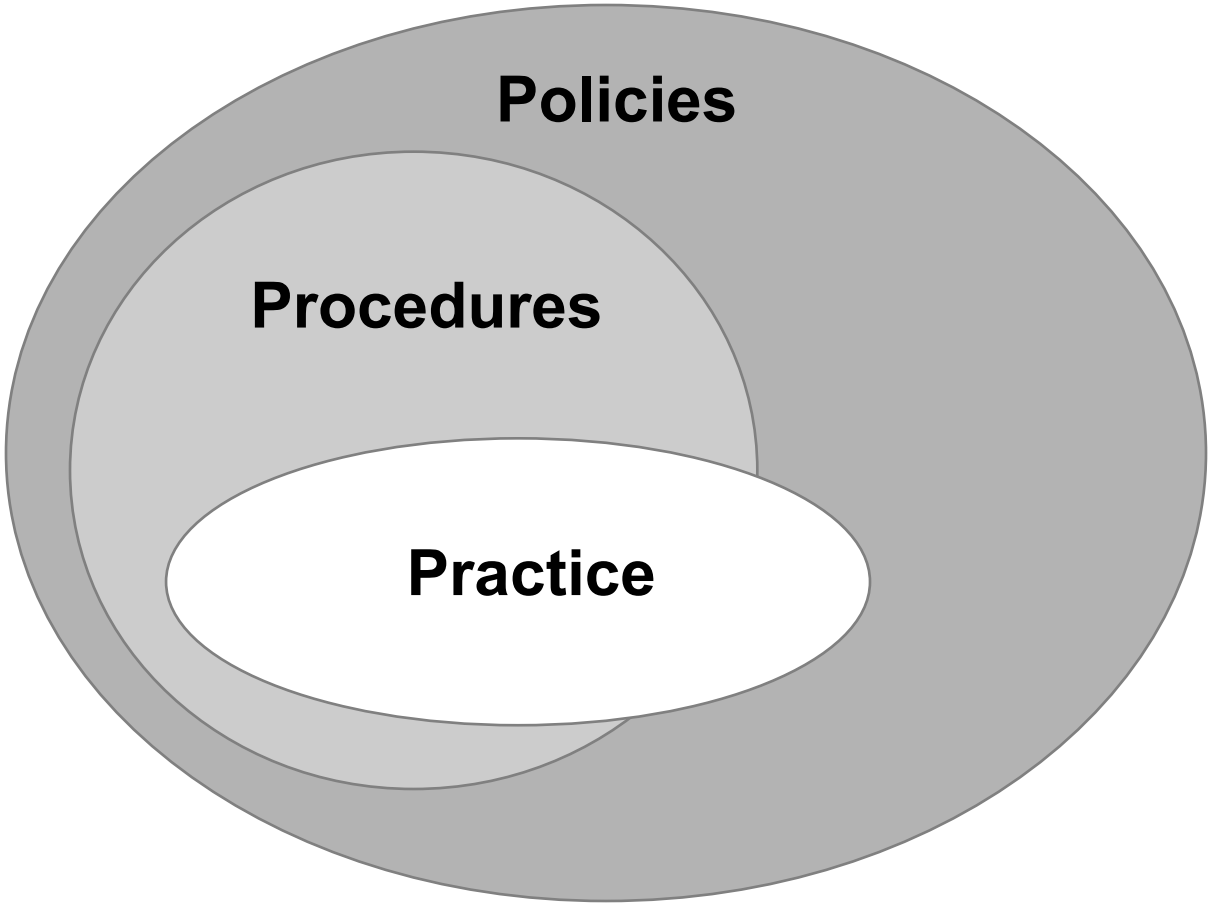


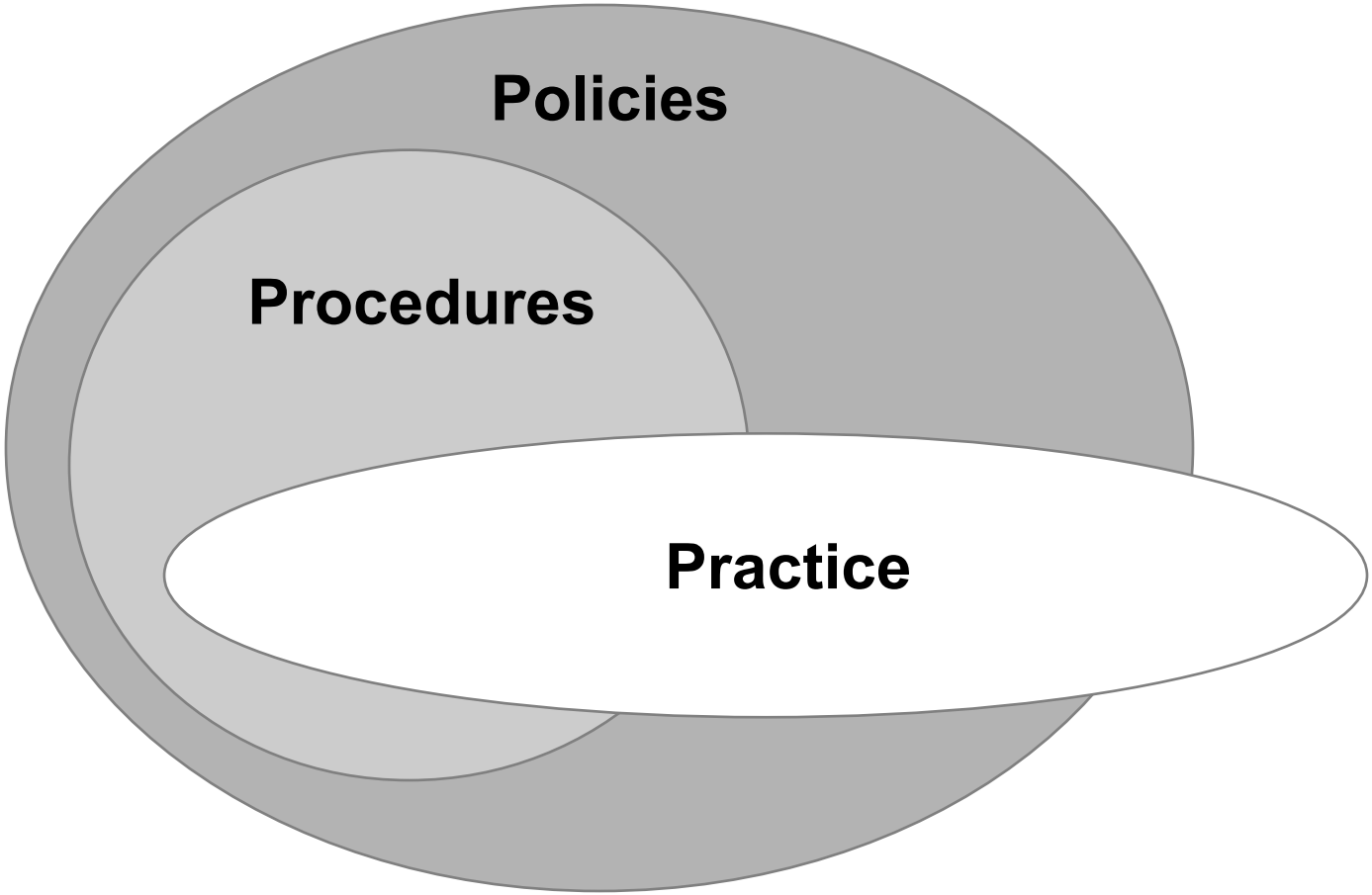
THE Model

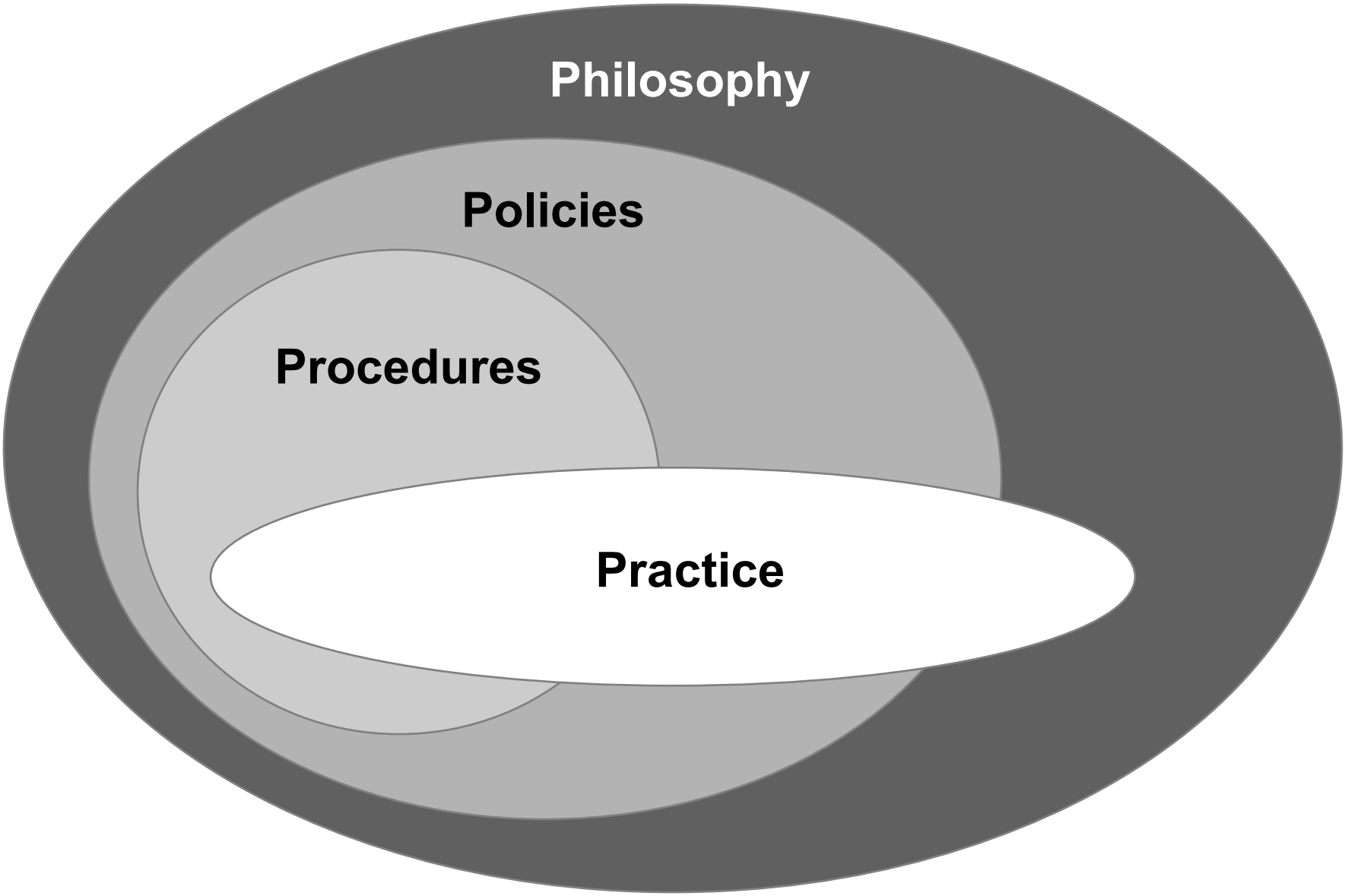

Practice


Procedures
Practice

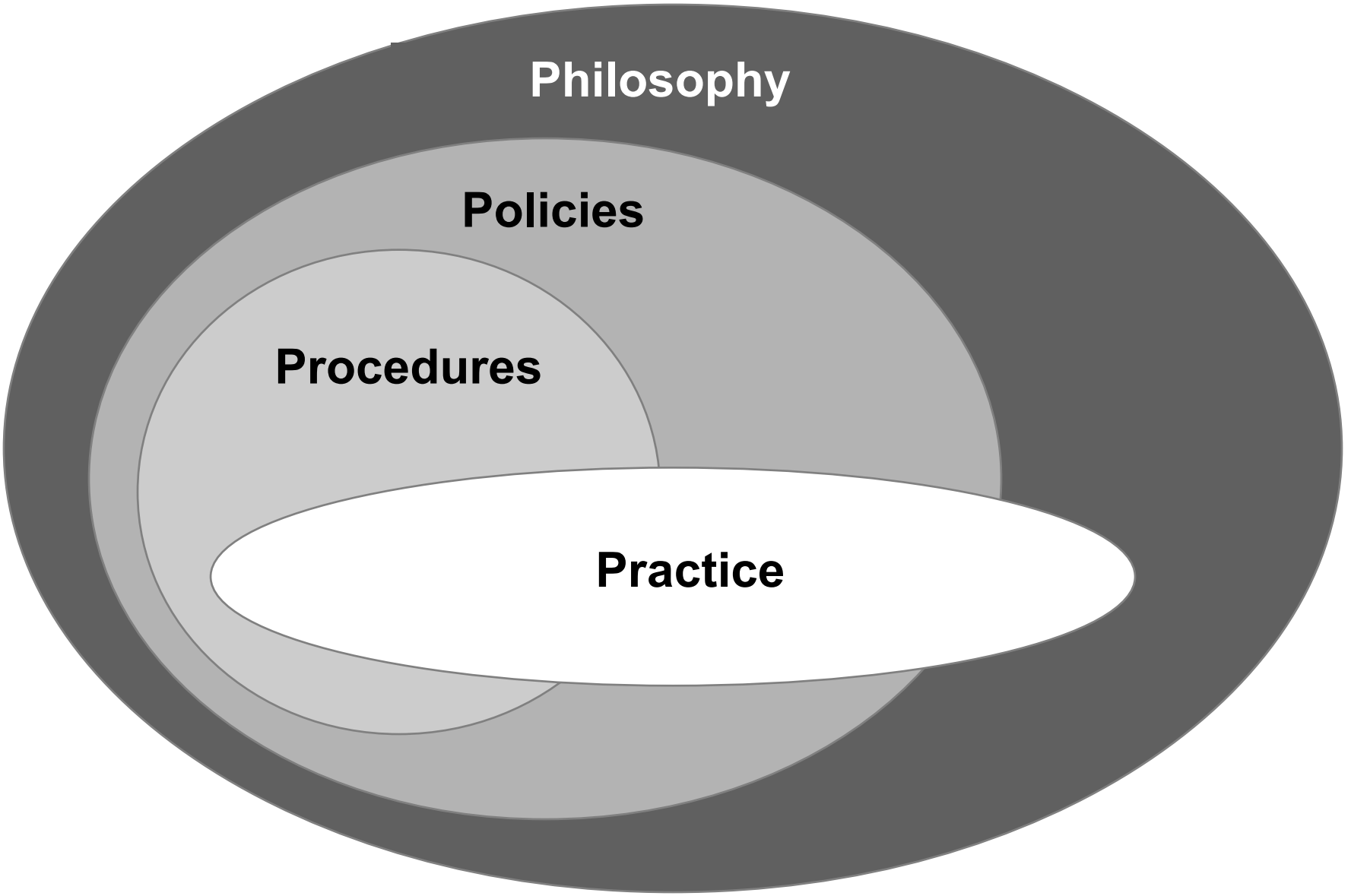

Procedures
Practice


Policies
Procedures
Practice

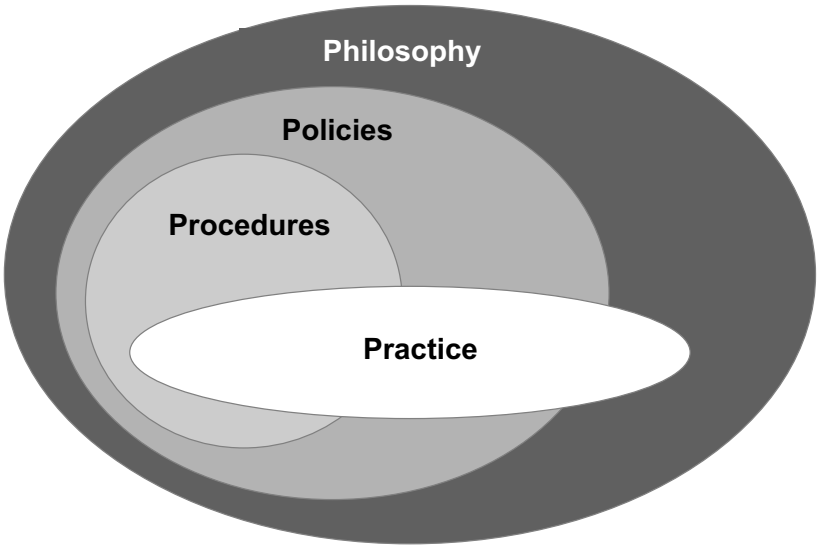

Policies
Procedures
Practice


Philosophy
Policies
Procedures
Practice

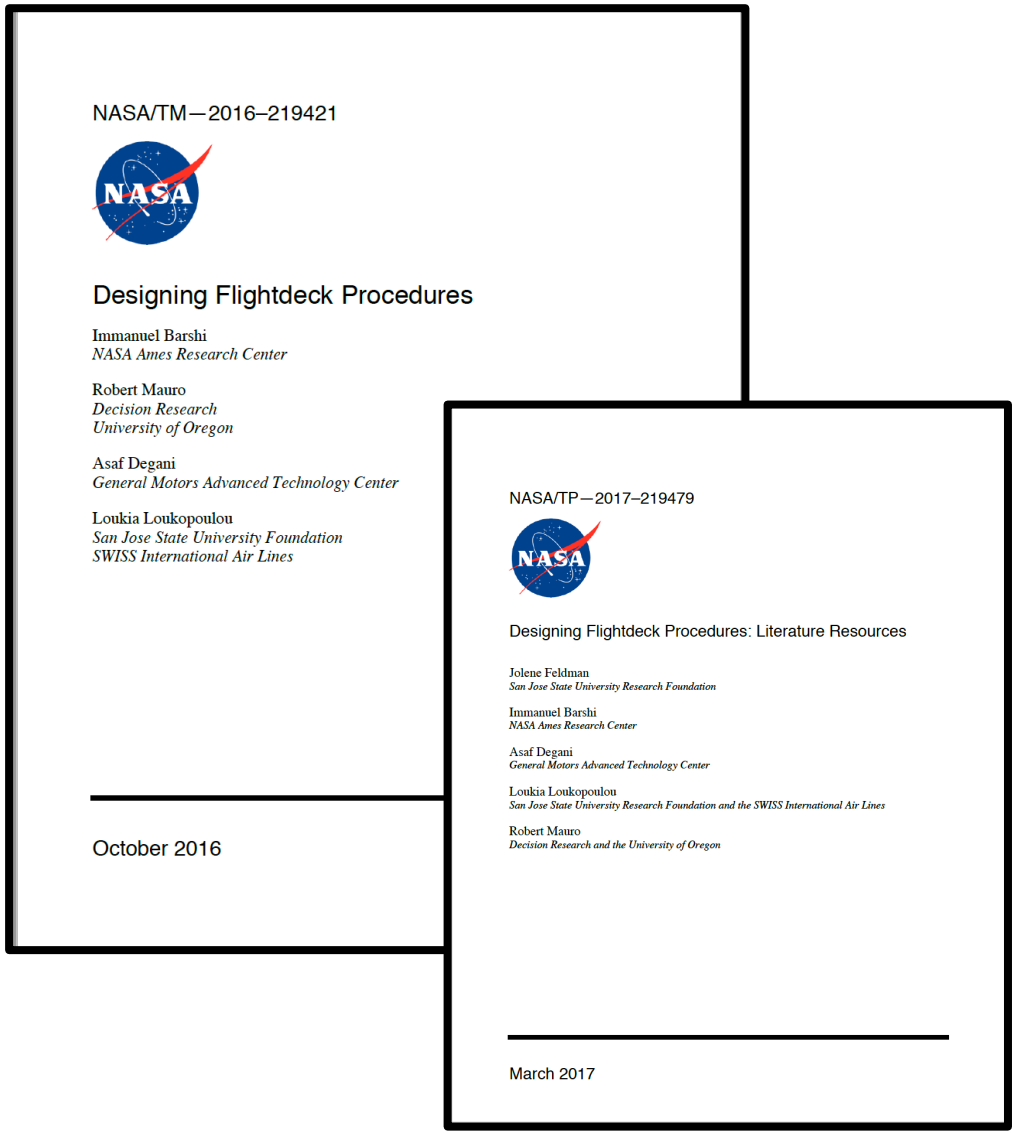
The 4P's



The 4P's



- Not a theoretical model.
- The result of observations.
- That's the way it's out there right now.
- The question is whether you want to make it explicit or not.



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Designing Flightdeck Procedures: Literature Resources

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