Team Leadership

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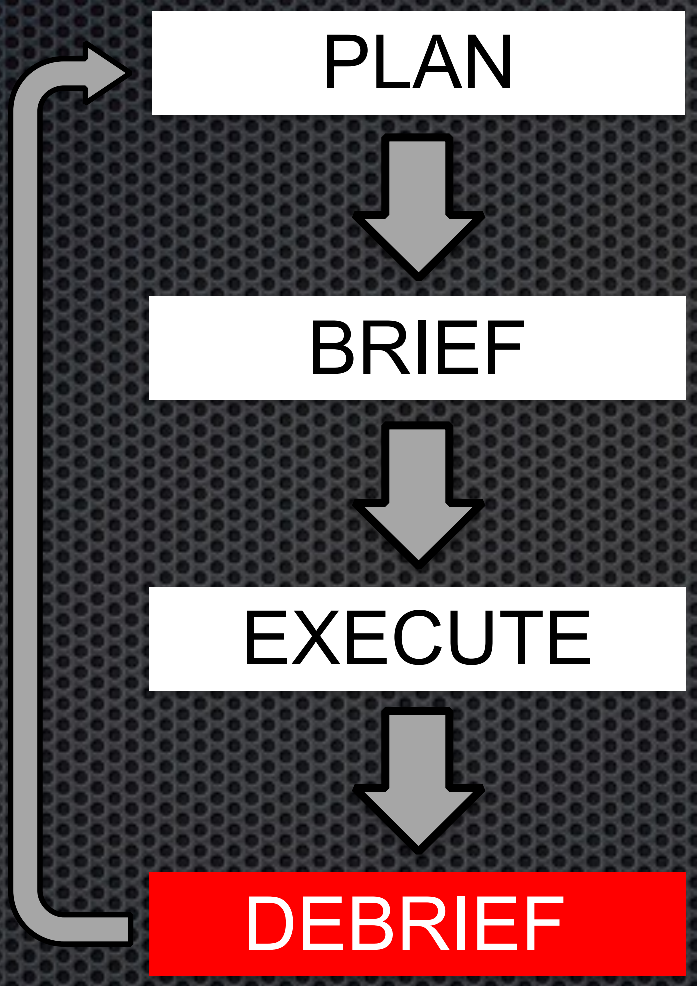
Intro

- Disclaimer
- Work Experiences
    - AFCERT
        - APT intrusions
        - Insiders
        - DDoS
        - Outages (Network & Weather)
        - IT upgrades

Problem Statement

- Scale of network & threats plus:
  - Lack of focused IT leadership training
  - **Critical** self-analysis missing in our community
- Solution and results
- Scope of the solution

The Basic Principle



PLAN

BRIEF

EXECUTE

DEBRIEF

Endstate
Outline of the effort / mission

Endstate
All team members understand the plan

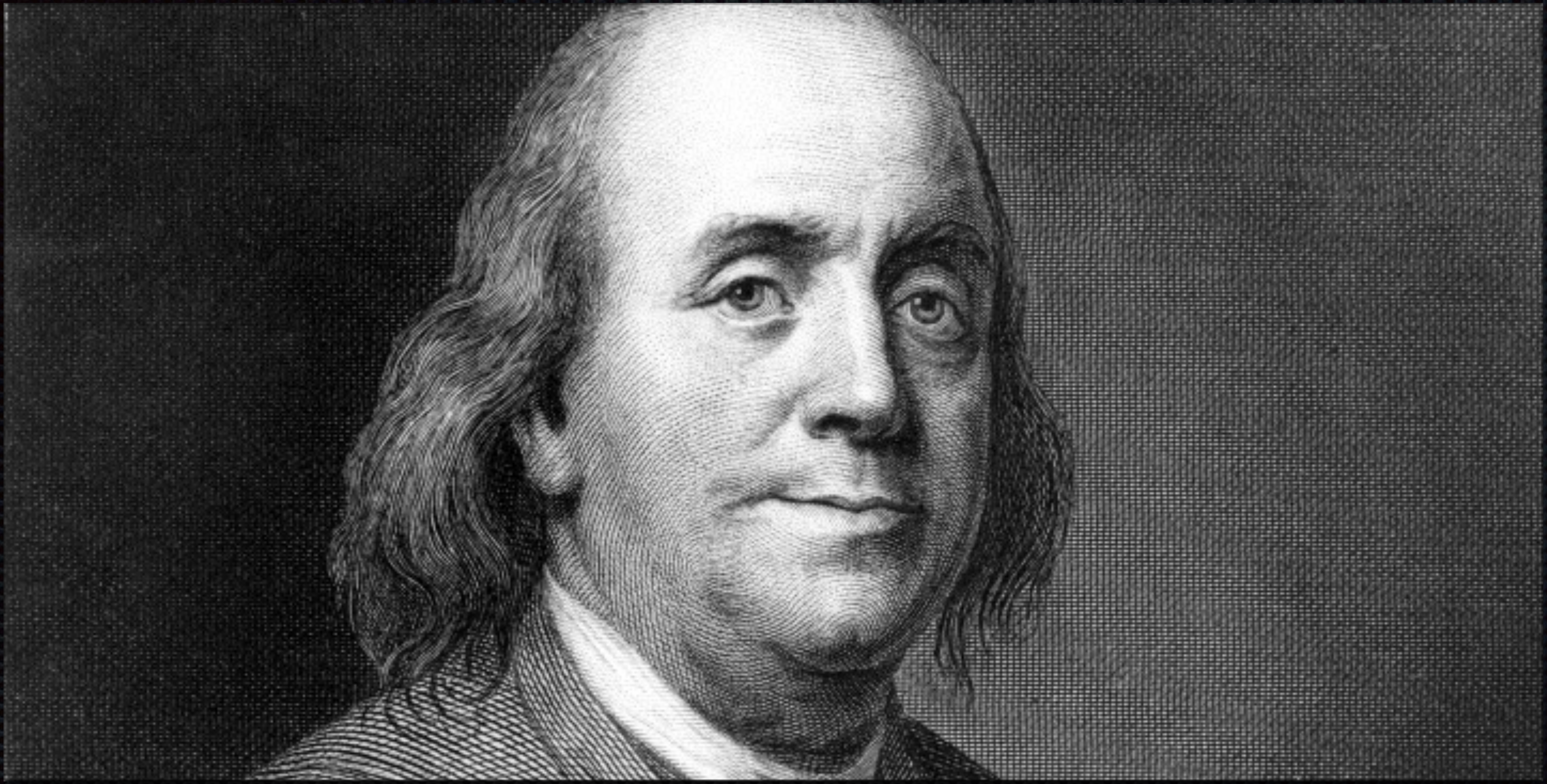
Endstate
All expected tasks completed

Endstate
Lesson Learned / Best Practices identified

NASA

Formula 1

GE



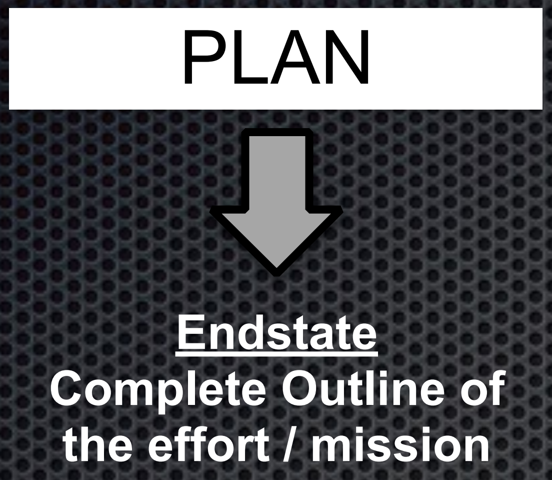
“If you fail to plan, you are planning to fail.”

Benjamin Franklin

Planning

- Good leaders are good planners
- Problem: Most people feel very uncomfortable as planners
- We discovered that it is best to have a structured planning format
    - Keeps it standardized
    - Becomes muscle memory
- SUCCESS = Everyone on your team is comfortable with planning
- Our method

Lead the planning effort/team



PLAN

Endstate

Complete Outline of the effort / mission

- Mission
- Enemy
- Environment
- Effects
- Capabilities
- Plans / Phases
- Contingencies
- Communications

If the plan sucks, you can only blame yourself

Example Plan

Spoiler Alert

MPC Objectives

Specified Objectives

- Develop IR plan for company X against APT

Implied Objectives

- Develop Coord card
- Follow company planning standards
- Coord with IT department
- Coord with ops division

Mission Objectives

Specified Objectives

- MA of compromised net
- Clear APT
- ID & fix

Implied Objectives

- Limit customer impact
- Limit business impact

MPC Timeline

1800L - Initial Order Breakout
1830L - Prior to Initial Coord
2000L - Initial Coord
2100L - Comm Plan Dev
2200L - Contract Dev
0000L - Contingency Dev
0300L - Coord Card Dev
0400L - ROC Drill Script Development
0500L - MPC stop

MPC Milestones

□ Order Breakout
□ ME3C-(PC)^2 Tactical Plan
□ Coord Card
□ Brief plan to operators
□ Develop Leadership Brief
□ ROC Drill Script

Leadership Positions

MPCC: Sam Smith
MSN/CC: Bill
DMPCC: Tim Jones
Time Keeper: Joe
Scribe: Phillip
Presentation: Vincent
RFI Lead: Lisa

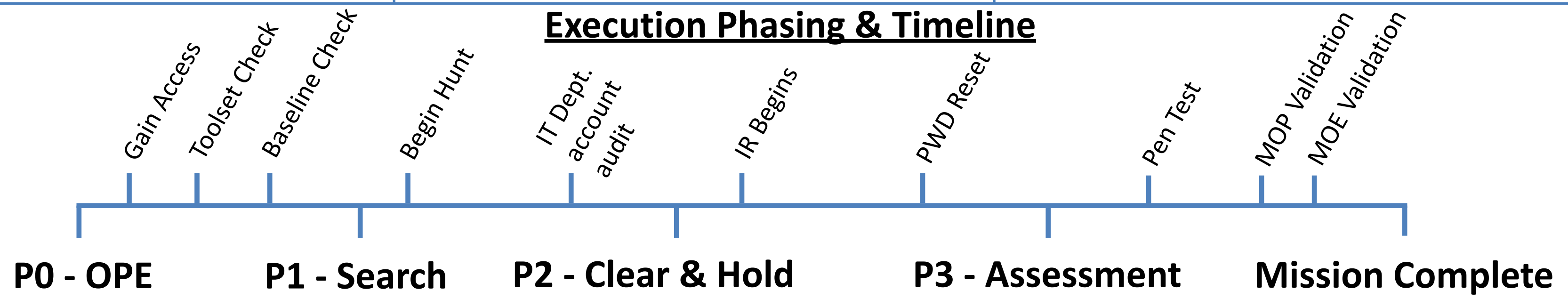
Classification

Brief: Confidential
Facility: Confidential

RFI’s

- Intel Updates?
- Mission partners
- Business Impact
- Attribution
- LE notification?
- Legal Dept coord
- PII leak
- Customer Notice?

Execution Phasing & Timeline



Gain Access
Toolset Check
Baseline Check
Begin Hunt
IT Dept. account audit
IR Begins
PWD Reset
Pen Test
MOP Validation
MOE Validation

P0 - OPE
P1 - Search
P2 - Clear & Hold
P3 - Assessment
Mission Complete

Planning Workspace

Mission

Business Intent: Protect customer data & company brand name
Tactical End-state: IT resources available for core business process and free of APT
Facts: Database X is not compromised
Assumptions: APT active 90+ days
Constraints (must do): Notify of PII compromises
Restraints (must not do): Take server X offline

Environment

Targets: APT IPs & known IOCs
Terrain: Corporate subnet X & Server Farm Y
Impact Concerns

- Customer impact
- Business impact

Enemy

Intel: What we know
MD: Wiper malware
ML: Corporate Espionage
Intel Gaps: Attribution
Enemy Ops Rhythm: Unknown

Effects

Deny lateral movement
Remove APT presence
MOE: Shareholder’s happy with response
MOE: APT re-attempts access
MOE: Pen test failure
MOP: 99.999 uptime of compromised net
MOP: 100% of known IOCs adjudicated

Capabilities

Operational Rhythm:

- SOC to perform continuous monitoring
- CERT to perform IR
- Hunt Team to pro-actively look for adversary IOCs
- IT Dept. to audit & reset passwords

Capes/Lims: Standard Corporate Toolset
Dependencies: Access

Plan

Execution Battle Rhythm

- **Phase 0: OPE**
  - Actions
    - Accesses confirmed
    - Toolset Checks
    - Confirm Baselines
  - Triggers
    - WS Checks & Baselines MC
- **Phase 1: Search**
  - Actions
    - Hunt Team executes hunt plan
    - IT Dept. audits accounts
  - Triggers
    - IAPT Detected
- **Phase 2: Clear & Hold**
  - Actions
    - CERT IR begins
    - Password reset
  - Triggers
    - IR Actions complete
- **Phase 3: Assessment**
  - Actions
    - Pen test results validate hardening
    - MOPs & MOEs validated

Contingencies

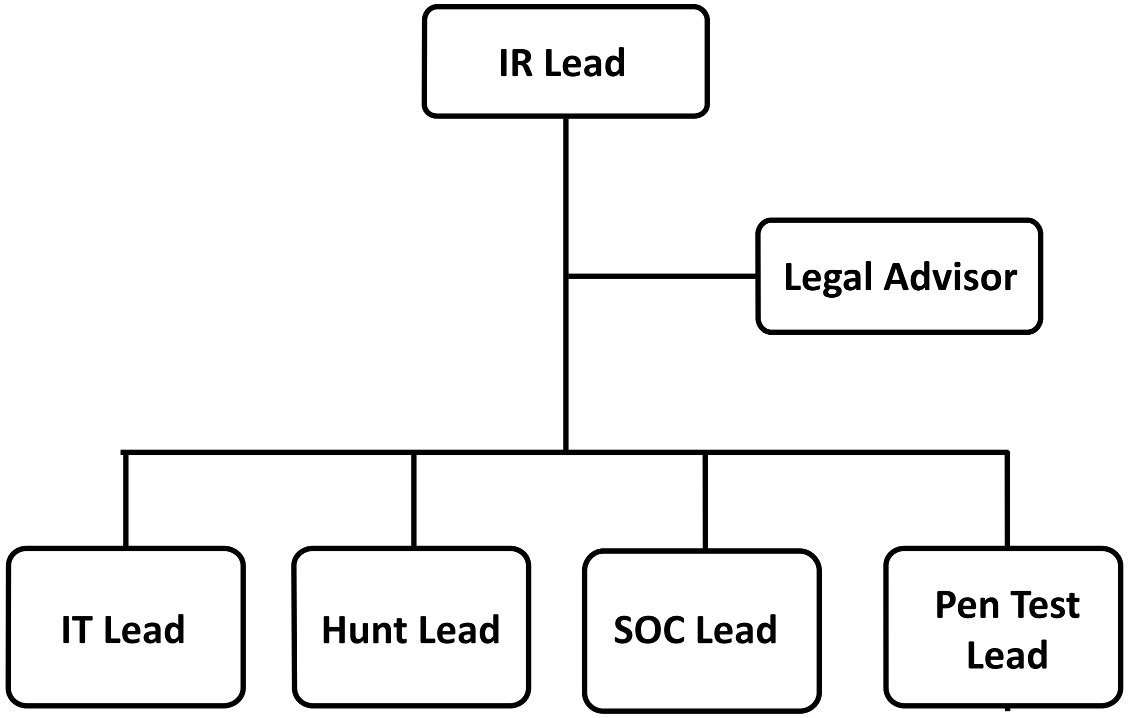
Failed Assumptions
Major event failures (access, lock-outs)

Parking Lot

ROC DRILL Timeline

- Access granted
- APT detected
- Compromised account located
- Password reset initiated
- Access lost
- Services drop
- Main Server Crash
- Tools don’t work
- Pen test success/failure
- Customer PII leaked
- Customer complaints pour in

C2



IR Lead

Legal Advisor

IT Lead

Hunt Lead

SOC Lead

Pen Test Lead

Specific / Anticipated Communications

#	Criteria	Authority	Communications	Action
1.	Comp PWD	IT Dept	“PWD X locked out”	IOC added
2.	Access needed	IR Lead	“Access - System X”	IT Dept confirms
3.				
4.				

Comm Plan

Pri/Sec/Ter Comms

- Trigger points & procedures to transition to backup Comms

Brevity

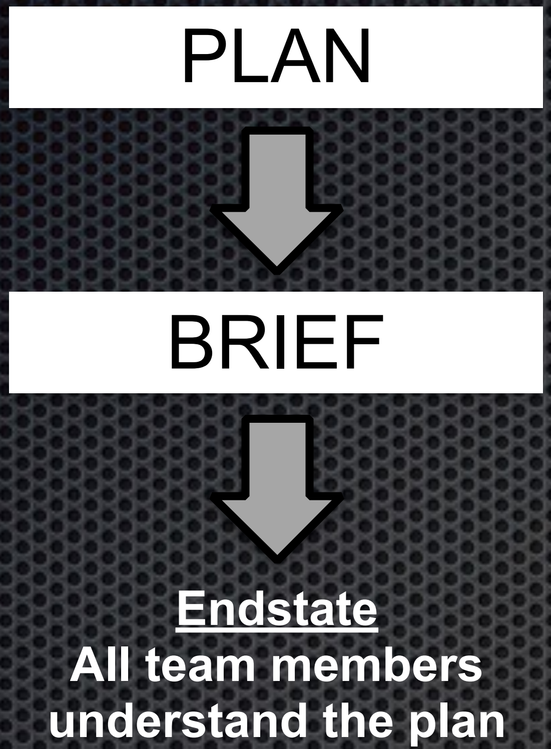
Call Signs

Collaboration (VTC, Corporate IM, SharePoint)

Deliverables produced during/after Execution

- Format
- Suspense

Lead by briefing the team


PLAN

BRIEF

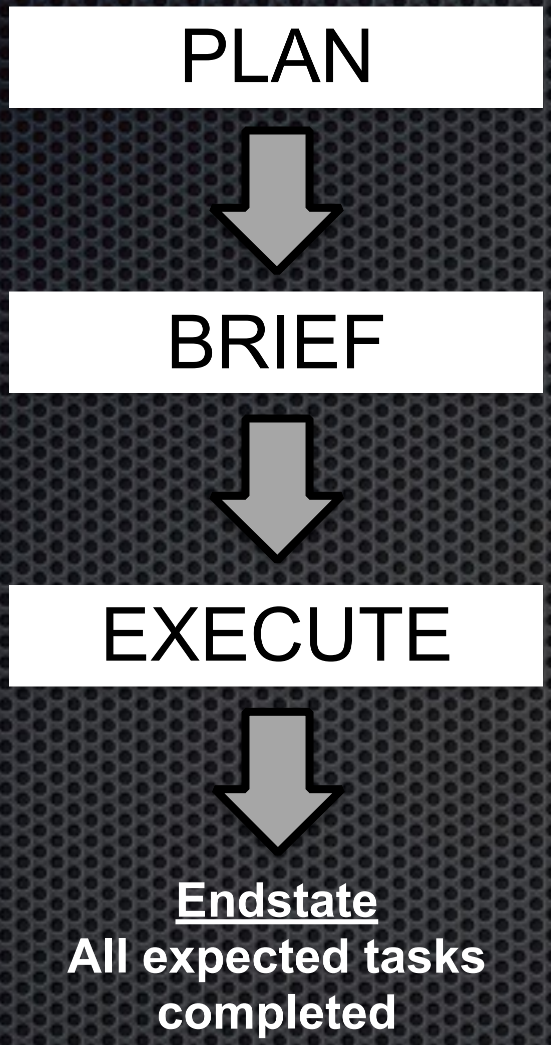
Endstate

All team members understand the plan

- Mission Leader Conveys Plan
  - Cover the whole mission
  - Opportunity for team to ask questions/weigh-in on planning
- Brief includes:
  - Team objectives, tasks & expectations
  - Assessment plan
  - Visual timeline of events
  - Roles/Responsibilities/Resources
  - Assumptions and Contingencies

The brief sets the tone for the whole effort

Lead during execution



PLAN

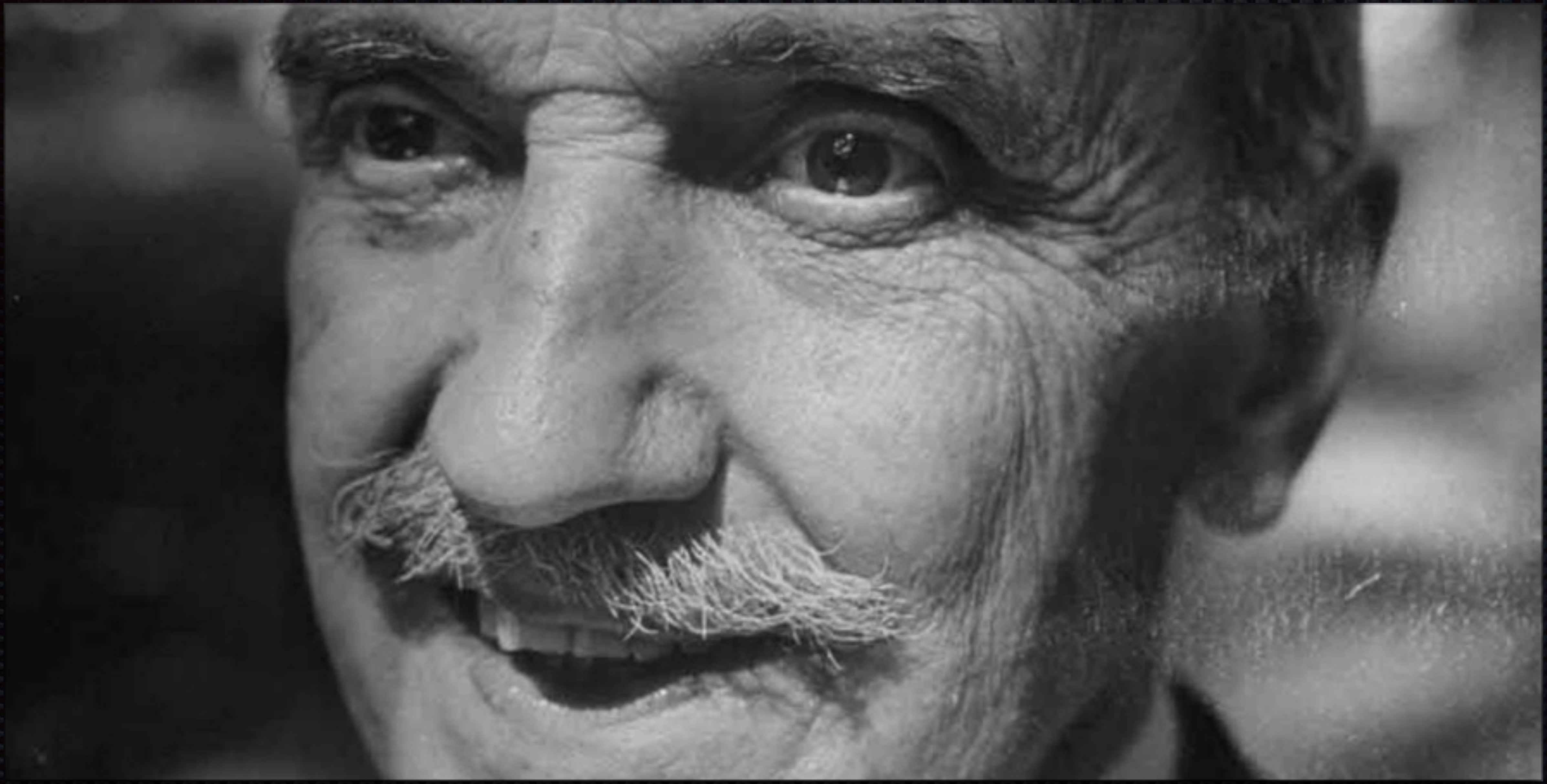
BRIEF

EXECUTE

Endstate
All expected tasks completed

- Execute in accordance with established guidelines & procedures
  - Directive Guidance
  - Checklists
  - Company policies
- Everyone should be noting observations throughout
  - Driven by assessment planning
  - Leader can assign focus areas to individuals

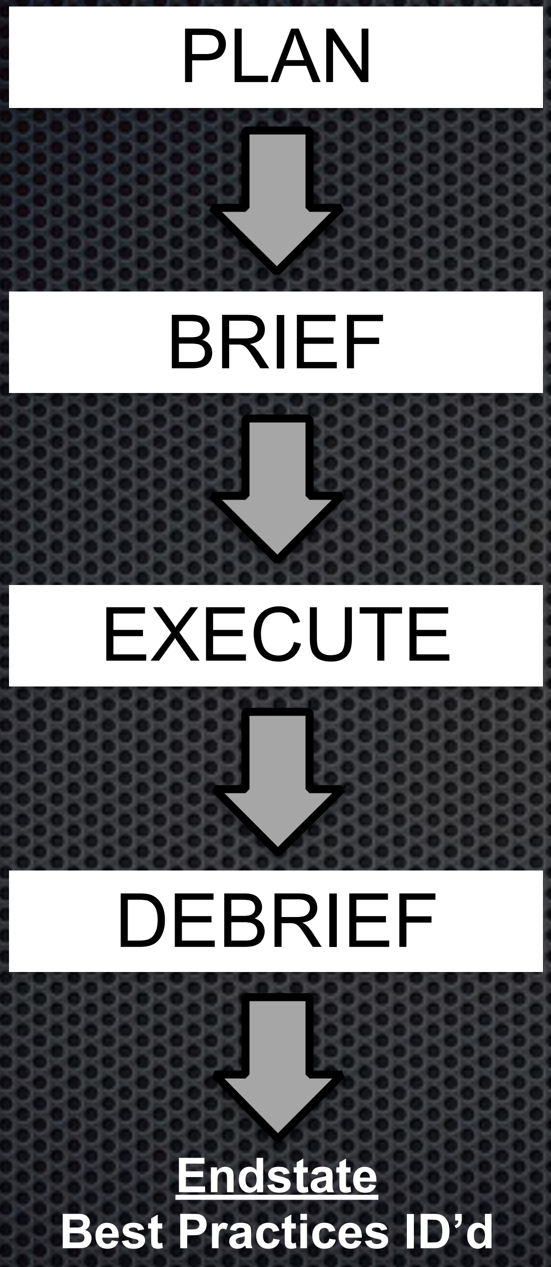
Deviations OK, but should be debriefed



“Those who cannot remember their mistakes are condemned to repeat them.”

George Santayana

Lead the Debrief



- Reconstructing / analyzing an event to avoid repeat mistakes & clone success
- Led by leader; entire team participates & Rank is a non-factor!
- Tied to overall plan/objectives
  - Did we stick to the plan?
  - Was the plan sufficient?
- Structured Flow
  - Repeatable
  - Aids in avoiding pitfalls/bad habits

Debrief Basics

- A.K.A. a Hotwash or AAR
  - Busbahnhof vs. Postbahnhof
  - Institutional learning
- Must be internally focused
  - Salad Gate 2011
  - The Bathtub faucet

Common Debrief Mistakes

- Not internally focused
- Jumping to Fix Action before identifying the Root Cause
  - Avoid: “I already know what went wrong…Here’s simply what we do”
  - You can have suspicions, but always run through the process
- Not owning up to mistakes
  - Leave your ego and self preservation at the door!

Dinner Party Example

- Objectives
  - 1) Feed guests delicious meal
  - 2) All guests leave happy/have good time
  - 3) Doesn’t interfere with baby’s routine

- Specified Tasks
  - Make dinner
  - Provide entertainment
  - Clean the house

- Implied Tasks
  - Decide what recipes to use
  - Go to the grocery store
  - Create dinner music playlist
  - Gather party games

- Constraints & Restraints
  - Has to end before baby’s bath time
  - Can’t serve alcohol to minors

- Assumptions
  - All guests will be omnivores
  - Guests do not have food allergies

- Assessment Criteria
  - Guests plates are cleaned
  - Guests joking and laughing
  - Guests are sad when it’s babies bath time and have to leave

Dinner Party Debrief

<u>Reconstruction</u>

- 0800 – woke up
- 1200 – ate lunch
- 1300 – wife and I begin cleaning
- 1345 – note: cleaning taking too long
- 1400 – baby is fussy
- 1400 – I start taking care of baby
- 1445 – baby falls asleep (finally)
- 1500 – left for the grocery store
- 1600 – return from store/start cooking
- 1645 – noticed missing key ingredients
- 1650 – used soy sauce for beef bouillon
- 1715 – Set table/prepare entertainment
- 1730 – guests begin arriving
- 1830 – Dinner served
- 1845 – guests hardly touched food
- 1850 – subject of food quickly deflected
- 1930 – guests only mingling/party dead
- 1945 – guests leave earlier than plan'd

- DFP: Why did the guests dislike the food? (Obj 1 & 2)
  - ~~The guests' tastes are subjective~~
  - I failed to feed them delicious food
    - I failed to prepare the food in accordance with the recipe
      - I did not have all of the ingredients
        - RC → I failed to purchase all needed ingredients needed when at the grocery store
          - I didn't know better

IF: create grocery list with required ingredients

Lesson Learned: When preparing for a dinner party, I will remember to buy all of the required ingredients by creating a grocery list to remind me of what ingredients are needed so that the guests will like the food.

Dinner Party version 2.0

- Objectives
  - 1) Feed guests delicious meal
  - 2) All guests leave happy/have good time
  - 3) Doesn't interfere with baby's routine
- Specified Tasks
  - Make dinner
  - Provide entertainment
  - Clean the house
- Implied Tasks
  - Decide what recipes to use
  - Make a grocery list
  - Go to the grocery store
  - Create dinner music playlist
  - Gather party games
- Constraints & Restraints
  - Has to end before baby's bath time
  - Can't serve alcohol to minors
- Assumptions
  - All guests will be omnivores
  - Guests do not have food allergies
- Assessment Criteria
  - Guests plates are cleaned
  - Guests joking and laughing
  - Guests are sad when it's babies bath time and have to leave

Dinner Party 2.0 Debrief

Reconstruction

- Reconstruction
- 0800 – woke up
- 0900 – made ingredient/grocery list
- 1200 – ate lunch
- 1300 – wife and I begin cleaning
- 1500 – left for the grocery store
- 1600 – return from store/start cooking
- 1715 – Set table/prepare entertainment
- 1730 – guests begin arriving
- 1830 – dinner served
- 1845 – conversation is lively/jovial
- 1900 – most guests plates empty
- 1900 – guests A, C, & D asks for seconds
- 1900 – guest B has only eaten salad
- 1900 – guest B looks frustrated
- 1915 – All guests enjoying party games
- 1930 – guest B snacking heavily - veggies
- 2045 – guests have to be kicked out
- 2100 – baby put to bed

- DFP: Why guest B dislike the food? (Obj 1 & 2)
  - I failed to prepare food to her liking
    - ~~I failed to assess guest food preferences or diet restrictions~~
      - ~~I didn't know better~~
    - RC → I failed to give the guests food options
      - I assumed all guests were omnivores
        - I didn't know better

IF: make a contingency plan for guests that may want/need other food options

LL: When planning for a dinner party, I will not only plan for everyone to like the same type of food by having a contingency plan in place for people who may want/need other food options (e.g. vegetarian) so that every guest enjoys the dinner.

Dinner Party version 3.0

- Objectives
  - 1) Feed guests delicious meal
  - 2) All guests leave happy/have good time
  - 3) Doesn't interfere with baby's routine
- Specified Tasks
  - Make dinner
  - Provide entertainment
  - Clean the house
- Implied Tasks
  - Decide what recipes to use
    - Include vegetarian recipe
  - Make a grocery list
  - Go to the grocery store
  - Create dinner music playlist
  - Gather party games

- Constraints & Restraints
  - Has to end before baby's bath time
  - Can't serve alcohol to minors
- Assumptions & Contingencies
  - All guests will be omnivores
    - Have vegetarian option
- Assessment Criteria
  - Guests plates are cleaned
  - Guests joking and laughing
  - Guests are sad when it's babies bath time and have to leave

Challenges

- Corporate anti-bodies to change
- Lack of qualified planners
- Egotism in the debrief

Takeaways

- PBED may seem daunting at first, but you will get better over time
- Don't fight the process, trust in it
- If you repeat a problem even with implementing an FA, then:
  - You did not find the true root cause or FA was not sufficient
- Archive your previous executions & previous LLs
- It's an operational rhythm… more importantly, it's a lifestyle / culture
- The magic is in the debrief

Questions?