



ADVANCED COURSE IN ENGINEERING

Competence | Commitment | Courage | Compassion

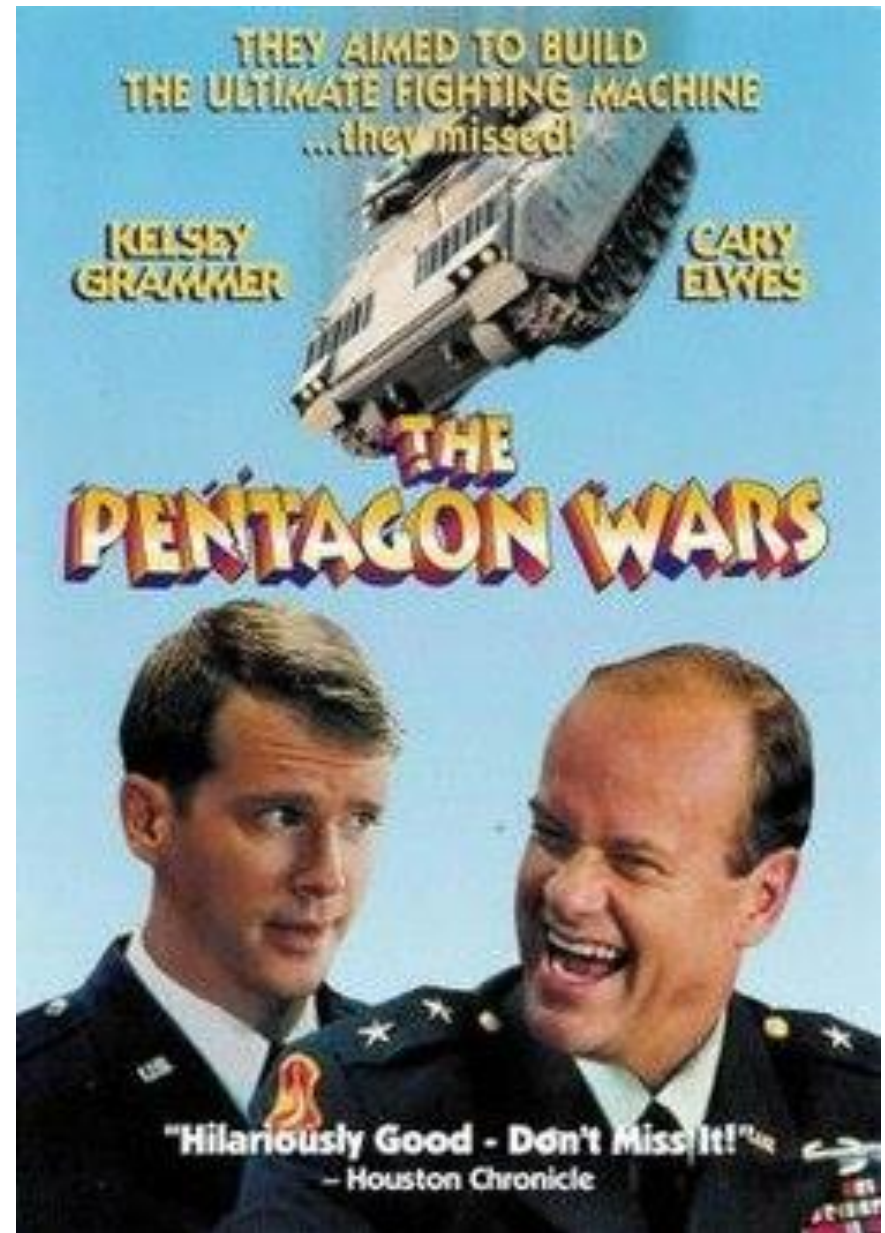
To Be or To Do

Capt Daniel Fitzgerald

21/22 July 2021

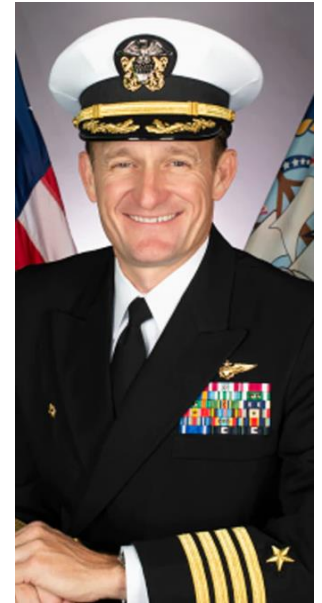
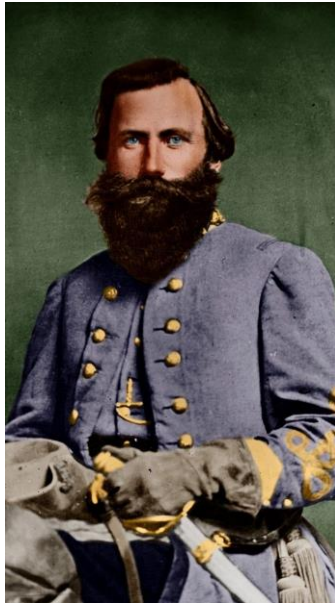
Overview

- Purpose
- Relevance
- Case Studies
- Summary



Purpose

- At some point in your life, you will be forced to make a decision...
- When faced with a moral dilemma where do your priorities lie?
- What if your orders go against what you believe is right?
- Is it always right or wrong or is there an ambiguous middle ground?



Relevance

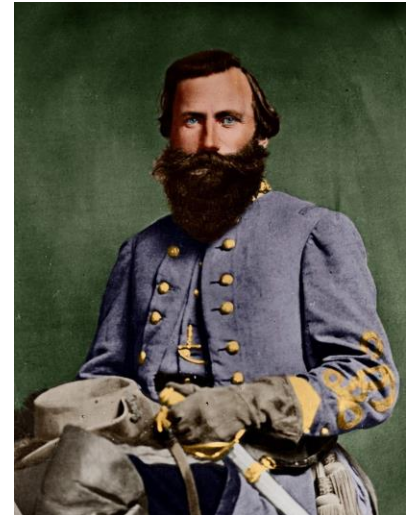
- Competence
 - To know what is right
- Courage
 - To do what is right
- Compassion
 - To guide your decisions
- Commitment
 - To persevere in the face of adversity

- Leading Change
 - Innovation and Adaptation
- To Be or To Do
 - Character and Competence
- Leading Up
 - Risk and Failure
- Building Teams
 - Cultures and Tribes



Case Study: Lt Stephen Brown / J. E. B. Stuart

- Doing what is right no matter the cost
 - Forced march from Maryland to Gettysburg
 - Water for his troops - Arrested
- Reclaiming lost honor at the expense of others
 - Circumnavigating the enemy
 - No intel for Lee - No action taken
- Discussion:
 - How do you get the courage to do this when your career and freedom are at stake?
 - How does this fit with the culture of the officer corp at the time?
 - What was the situation?
 - What were the risks of this action?
 - Were they acting malicious?



Case Study: Col Jim Burton

- Culture of the Pentagon in the 70's & 80's
- F-111, F-15/16, B-1
- F-111:
 - Avg maintenance time 23x more than predicted
 - AF data: bombs missed 4x more in combat
 - VCSAF Mathis was program manager
 - VCSAF ordered radar bombing tests in desert
 - 6 sent to Australia to prove combat effectiveness
 - CSAF briefed SECDEF with chart of reliability
 - Criticism of F-111 was viewed as criticism of VCSAF Gen Mathis



“They never realized that, in the process of compromising their principles so often in order to get there, they would become programmed to continue operating in that same fashion once they arrived at the top.”

Case Study: Col Jim Burton

- Culture of the Pentagon in the 70's & 80's
- F-111, F-15/16, B-1
- F-15 vs F-16:
 - Cost effectiveness study to show fewer F-15s were better than more F-16s
 - Burton noted costs were left out
 - “I had to, If I included those costs, it might have changed the answer. And I was given the answer to begin with.”
 - AF added “enhancements” to make F-16 a night, all-weather fighter-bomber and all-weather interceptor
 - AF own reporting admitted new model not as good as old model, it wrecked the transient maneuverability

“They never realized that, in the process of compromising their principles so often in order to get there, they would become programmed to continue operating in that same fashion once they arrived at the top.”



Case Study: Col Jim Burton

- Culture of the Pentagon in the 70's & 80's
- F-111, F-15/16, B-1
- B-1
 - \$25 million advertised, closer to \$100 million
 - “We were told to fudge the numbers to save a program on a direct order from a two-star general.”
 - Carter cancelled, Reagan resurrected
 - Final cost accepted without testing: \$280 million
- AF sensor fuzed weapon concept, PAVEWAY III, Maverick anti tank missile, DIVAD air defense gun, SINGARS radio, Viper bazooka



“They never realized that, in the process of compromising their principles so often in order to get there, they would become programmed to continue operating in that same fashion once they arrived at the top.”

Case Study: Col Jim Burton

- The Pentagon Wars
- Joint Live-Fire Testing Program
- Bradley Fighting Vehicle chosen as first to be tested
 - Many lives at stake
 - Early in production phase
- Put into production with no vulnerability tests
- Letter to OSD from Army Assistant Secretary Percy Pierre (17 Mar 1980)

“The key factor here is the relative importance of various kinds of testing ... We feel it is counterproductive to conduct destructive testing on such a precious asset ...”

“Revolutions or major changes in the behavior of large organizations usually have a better chance of succeeding if they come from the bottom up, instead of being imposed from the top down.”



Case Study: Col Jim Burton

- The Pentagon Wars
- Evolution of the Bradley Fighting Vehicle
- <https://www.youtube.com/watch?v=aXQ2lO3ieBA>



Case Study: Col Jim Burton

- The Pentagon Wars
- Evolution of the Bradley Fighting Vehicle
- Type of weapons:
<https://youtu.be/iroFAa8P2MU?t=1047>
- Flammability:
<https://youtu.be/iroFAa8P2MU?t=2715>
- Ammo:
<https://youtu.be/iroFAa8P2MU?t=2962>



Case Study: Col Jim Burton

- Army agreed to conduct some vulnerability tests
- “The \$13 Billion Dud” by William Boly claimed Bradley aluminum armor was more dangerous than steel - Vaporifics
- Romanian weapons substituted for Soviet ones
- Hosed inside down with water beforehand
- Stopped taking measurements of toxic gases
- Test animals killed minutes after tests with claims that there were no after effects
- BRL tried to delay live fire testing for 2 years - by that time production would near completion



Case Study: Col Jim Burton

- Burton's "Rubicon Memo"
 - Discussed with wife and children
 - May be out of a job and blacklisted
 - Both children in college with out of state tuition
 - "We can always get along somehow"
- Accused Army and BRL of purposely conducting unrealistic tests, they were not useful, and could put 50000-70000 lives at risk
- Burton wanted a new management team and realistic "full-up" testing
- Met with Army leadership - they were furious
 - "We don't want to test it because we know what will happen. It will just blow up and people will get all excited over that and want to cancel the Bradley." - Lt Gen Robert Moore
- Army directed BRL to complete full-up testing



Case Study: Col Jim Burton

- Burton informed his position had been eliminated
 - They RIF'd Burtons position instead of 2 others
 - He sent copies of all memos to relevant offices
 - “Lots of little brothers and sisters”
 - Story hit press but Burton did not comment
 - Would stay in job until tests complete
- Burton informed he would be transferred to Alaska
 - He made copies of his transfer notice and passed them out
 - Press and Congress got wind - SECAF cancelled
- Phase 1 tests completed
 - Army hid Burtons report
 - Intentionally skewed data
 - Computer models way off in both directions so Army averaged the errors and claimed accurate
 - Burton concerned with casualties - Army concerned with vehicle



Case Study: Col Jim Burton

- Congressional Hearings
 - Informed testimony was classified
 - Threatened to say he was being censored
 - Testimony was unclassified 1hr before hearing
- Minimum Casualty Baseline
 - Ammo exploded to outside
 - Store TOW missiles outside
 - Move fuel to outside
 - Line troop compartment with Kevlar lining
 - Troops access ammo through sliding doors
- Phase 2 tests
 - 2 5-gallon water cans placed behind aim point
 - Burton calculated no difference in probability
 - 25% of test shots aimed at water cans
 - Burton wrote “Water Can Memo”



Case Study: Col Jim Burton

- Burton informed of assignment to Wright-Patt
 - 7 days to accept or retire
 - Many feared this would strengthen cause to cancel
 - Arrangements for him to stay and monitor tests and return to monitor Minimum Casualty Baseline
 - His boss kept this info from him until 20 min after
- Burtons last memos
 - Called out the Army for test shot choice
 - Only 29% of combat shots could be expected to land in area Army was testing
- Post retirement
 - Forced to finish Phase 2 testing
 - Random shot dispersion and full-up tests
 - Design significantly changed to make vehicle safer
 - Legislation mandating all new weapons go through live-fire testing



Case Study: Col Jim Burton

- Is the fight worth it?
- James Gavin's "On to Berlin" - Ineffective bazookas
- <https://www.youtube.com/watch?v=YTbVwH8xg8E>

“During Desert Storm, more soldiers’ lives were saved as a result of Bradley live-fire testing than we can count.”
Army Maj Gen Peter McVey



Case Study: Col Jim Burton

- Impact of one person's actions on others and the organization as a whole
- <https://youtu.be/iroFAa8P2MU?t=5599>
- Discussion:
 - Put yourself in Burton's shoes
 - What were the consequences of going against the culture?
 - How did a leader's virtues or experience inform their decision-making?
 - Did leaders understand capabilities, effects, and limitations?
 - Did leaders squander opportunities to minimize risk?
 - What do you do when you know you are right but no one will listen?
 - What assumptions about technology affected analysis?
 - Was the relationship between leader and follower able to endure hardship?
 - Where does your group think Col Burton falls on the To Be or To Do roll call? Why?



“Revolutions or major changes in the behavior of large organizations usually have a better chance of succeeding if they come from the bottom up, instead of being imposed from the top down.”

Case Study: Capt Brett Crozier

- Key Players:
 - Capt Brett Crozier, Captain of the USS Teddy Roosevelt
 - Thomas Modly, Acting Secretary of the Navy
 - US Navy
 - San Francisco Chronicle
- Intent:
 - Present the facts
 - Guide discussion
- Timeline of Events
- Discussion



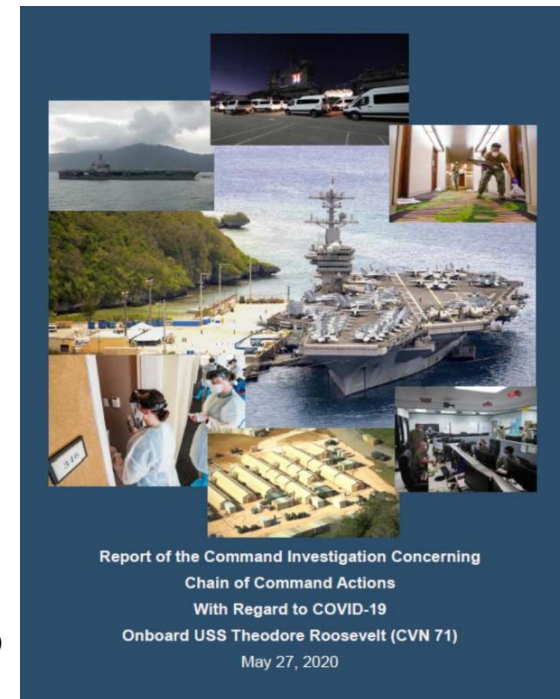
Case Study: Capt Brett Crozier

- ASECNAV Modley's Speech to the crew of the USS Roosevelt
- Apology
 - "I want to apologize to the Navy for my recent comments to the crew of the TR. Let me be clear, I do not think Capt. Brett Crozier is naïve nor stupid. I think, and always believed him to be the opposite. We pick our carrier commanding officers with great care,"
 - "Capt. Crozier is smart and passionate. I believe, precisely because he is not naive and stupid, that he sent his alarming email with the intention of getting it into the public domain in an effort to draw public attention to the situation on his ship. I apologize for any confusion this choice of words may have caused."
- Discussion



Case Study: Capt Brett Crozier

- Navy's Command Investigation Report (27 May):
 - “Capt Crozier will not be reassigned to USS Roosevelt”
 - “His email was sent with the well-being of the crew as his top concern”
 - “Capt Crozier did not act according to the standards expected of commanding officers”
 - “Capt Crozier did not forcefully and expeditiously execute the best possible and available plan, or do enough, soon enough.”
 - “Capt Crozier failed to effectively communicate his concerns up the chain of command, at key moments, despite numerous opportunities to do so.”
 - “The email and letter Capt Crozier sent was not delivered outside his chain of command and was not intended by him to be released to the media.”
 - CNO's Opinions



Case Study: Capt Brett Crozier

- Discussion
 - How did leaders handle incompetent followers or their own incompetence?
 - Did leaders squander opportunities to minimize risk? Why?
 - Did organizations adequately prepare for the circumstances?
 - How accurately did leaders foresee the consequences of their decision?
 - Did leaders communicate objectives and/or clarify ambiguity?
 - Where does your group think ASECNAV Modly and Capt Crozier fall on the To Be or To Do roll call? Why?



Summary

- Which way will you go?
- Col John Boyd's To Be or To Do speech

- Competence
 - To know what is right
- Courage
 - To do what is right
- Compassion
 - To guide your decisions
- Commitment
 - To persevere



Questions?



Dr. Jack Martin, USAF Assistant Secretary for R&D
presenting Col Jim Burton with the Legion of Merit

Capt Daniel Fitzgerald

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To Be or To Do: GBOTs

- "My individual actions may matter little, but their aggregate impact on the culture I imbue and promote in those around me may one day have a large impact." - Eoin McQuaid
- "As a cyber leader, it is your responsibility to know what is right, and it is your privilege to act on it." - Jacob Foster
- "When your people know you love and support them, they will return in kind. The less you care about yourself, the easier it is to be a leader. Trust that your people will fill in the gap, and you will find the hard decisions are always worth it." - Liam Weinfurtner