



Emergency Management Issues Special Interest Group Annual Meeting

Using Comprehensive Examinations to Determine Qualifications & Proficiency Of Key Decision-Makers For Emergency Situations

or

“Open the pod bay doors, HAL”

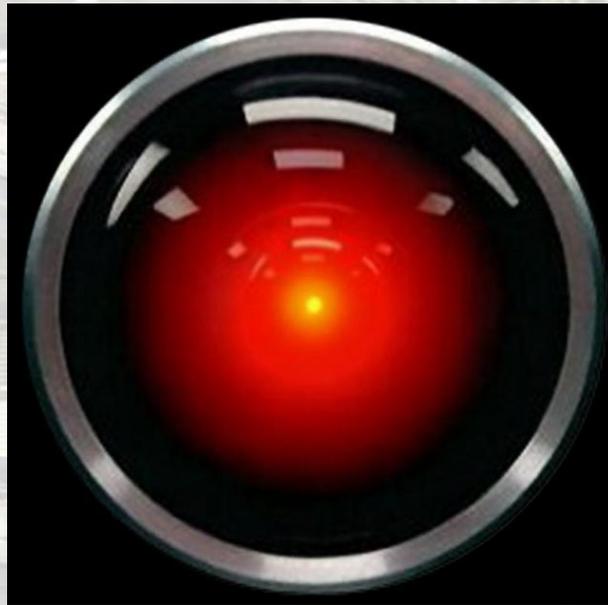
May 2–5, 2011 Charleston Marriott • Charleston, South Carolina



Background:

Dave Bowman: “Open the pod bay doors, HAL”

HAL: “I’m sorry, Dave, I’m afraid I can’t do that.”



Question: Why couldn't HAL open the pod bay doors?



My Thesis
(and I'm sticking to it):

**Because HAL
was not proficient at it!**

Definition of Proficiency

“Skillfulness in the command of fundamentals deriving from practice and familiarity”

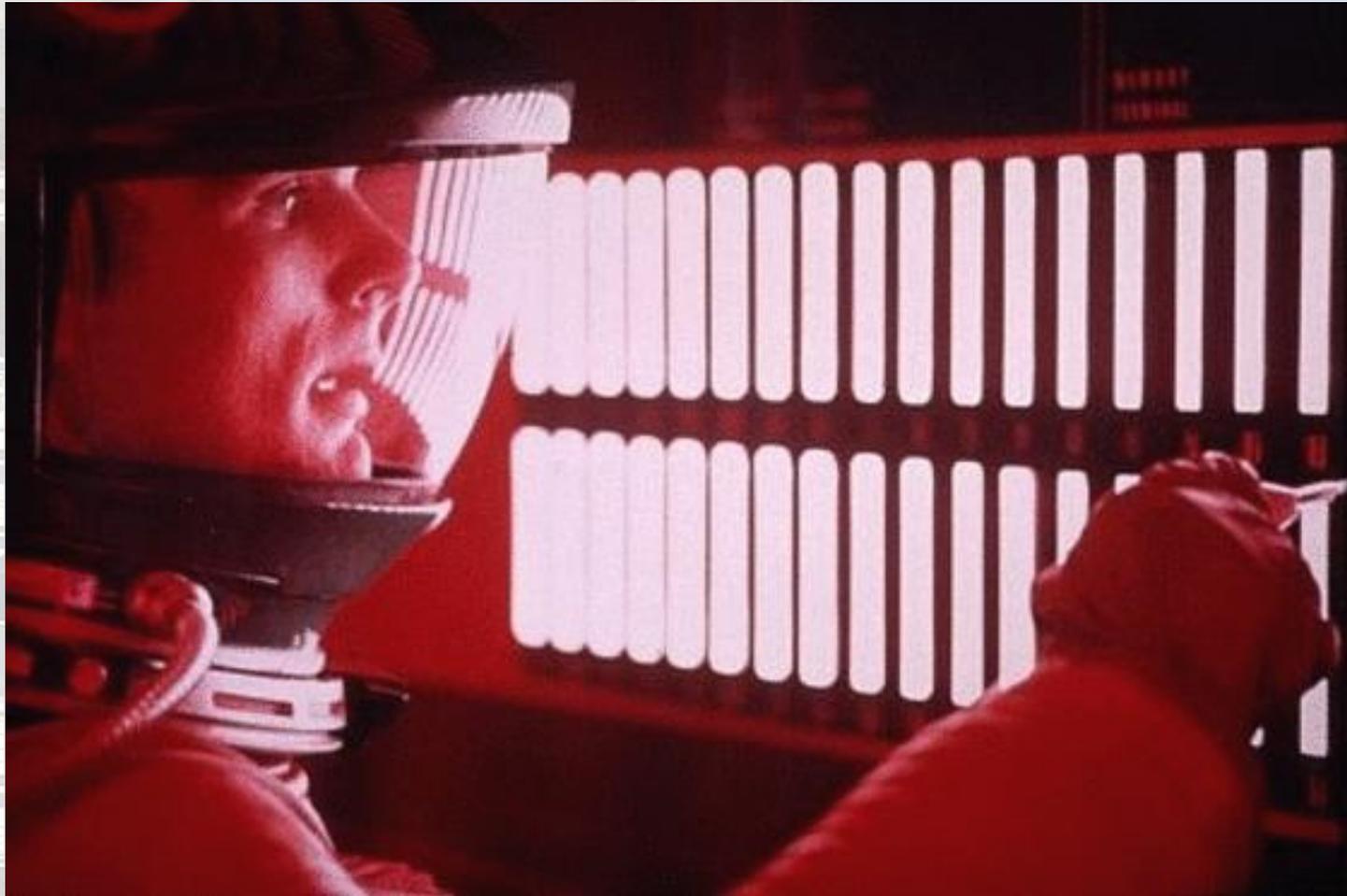


What is Your Evidence, Thom?

After Dave came in manually and without a space helmet—

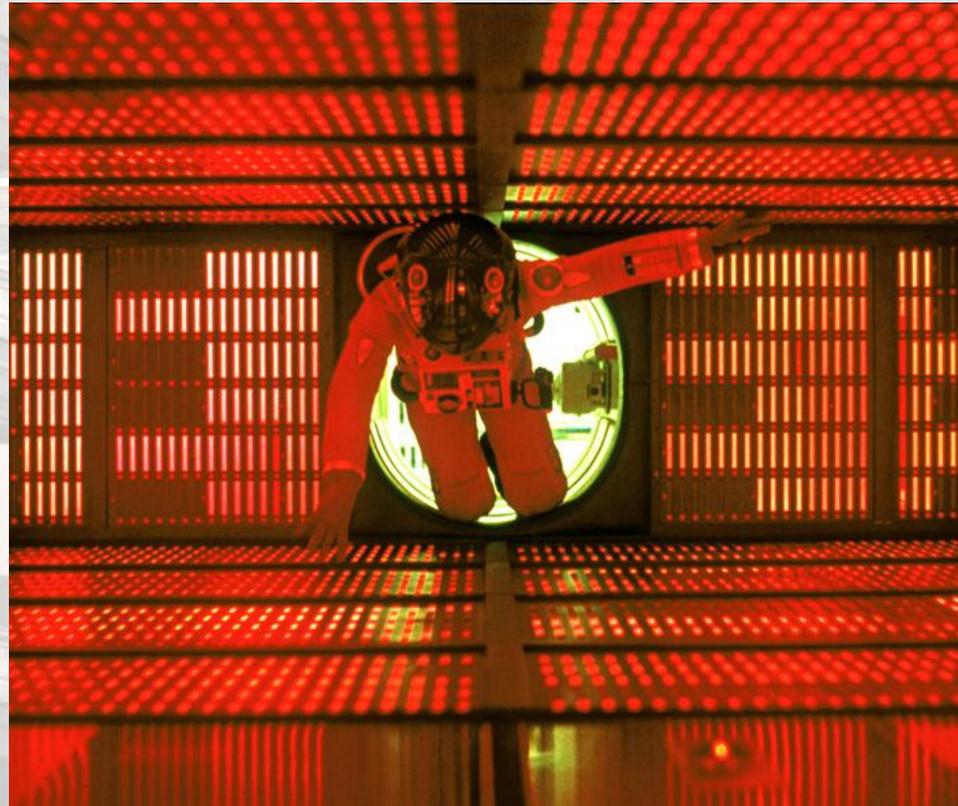
HAL: “Look, Dave, I can see you’re really upset about this...I know I’ve made some very poor decisions recently, but I can give you my complete assurance that my work will be back to normal...And I want to help you.”

Dave's Answer to HAL's Lack of Proficiency:



So, What Can We Do to Help Ensure Proficiency?

- We cannot just shut down responders' higher cerebral functions



So, What Can We Do to Help Ensure Proficiency? (continued)

- Or give them a new brain

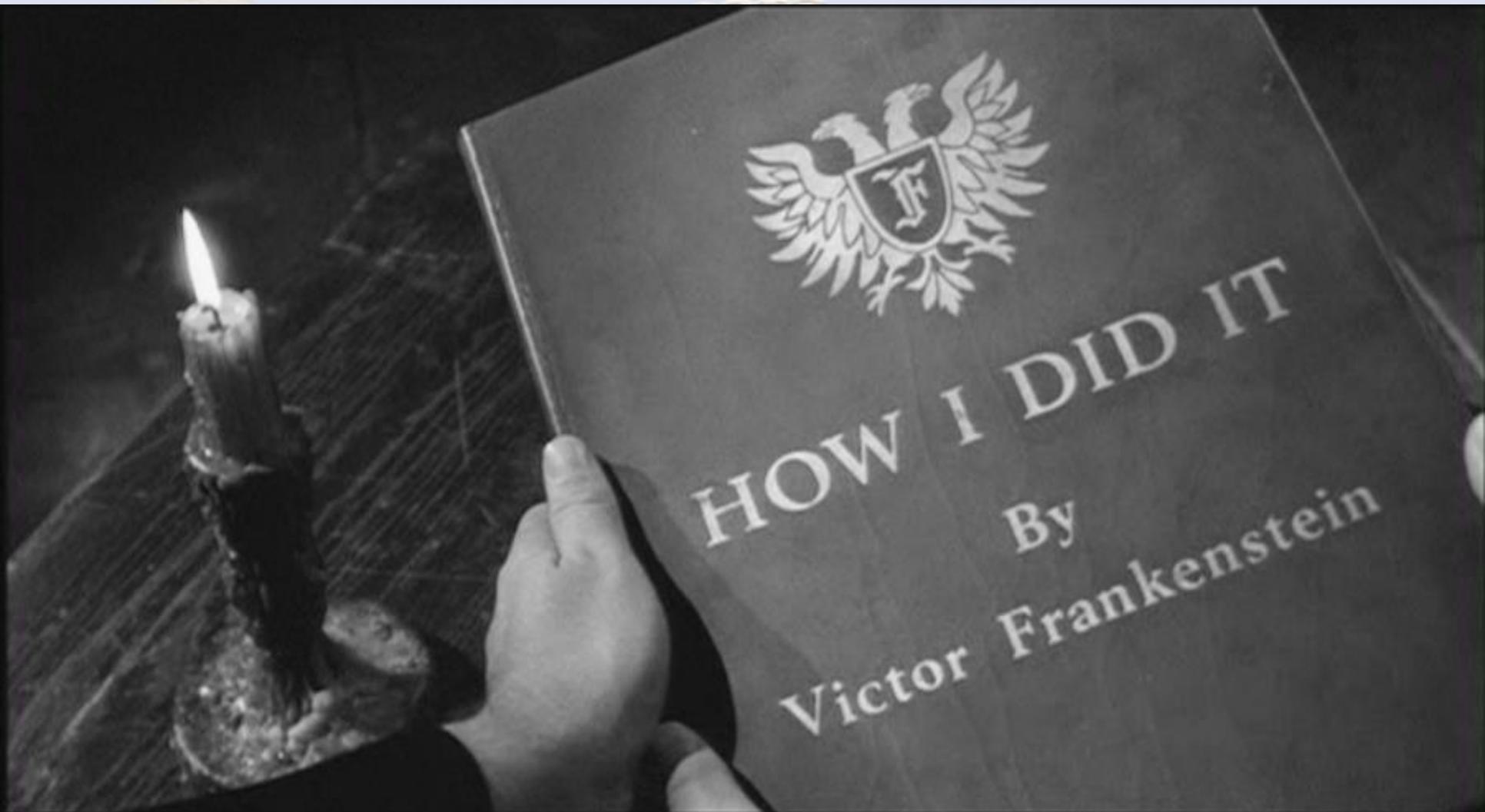


So, What Can We Do to Help Ensure Proficiency? (continued)

- Or transfer some of our brilliant minds into them



How About a Comprehensive Written Examination?



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Written Exams & Proficiency

- Written exams are traditionally used to test knowledge
- They can be used to incorporate elements of proficiency as well if they require the trainee to actually perform emergency functions
- This doesn't necessarily mean operate equipment as they would in a performance test, but rather to use resources and make decisions as they would in an emergency

Written Exams & Proficiency

(continued)

Instructions:

*Using all available information and resources that you would normally use during an emergency event, please answer the following questions. There are 50 questions. You must achieve at least 80% to successfully complete the examination. There is **one best answer** for each of the questions—mark only **ONE** answer for each question.*

Written Exams & Proficiency

(continued)

- Location:
 - At the emergency response “duty” location so they have access to all of their normal resources
- Time:
 - No express limit, but proctoring keeps the pressure on (normally about 2 hours to complete)

Written Exams & Proficiency

(continued)

- Question Format
 - Multiple choice only
 - At least 5 (a through e) apparently logical choices (mistake in logic or use of the resources would lead to one of the logical, but incorrect distractor answers)
 - **NO** “none of the above” or “all of the above”
 - **NO** multiple answers such as “both a & b”
 - **NO** silly answers

Written Exams & Proficiency

(continued)

- Five sections to the exam
 - A. General Categorization and Classification
 - B. Use of Emergency Action Levels
 - C. Protective Actions
 - D. Operational Emergency Notification
 - E. Concept of Operations

Written Exams & Proficiency

(continued)

- Example: Scenario B.3

Event Information: There is an activation of a building fire alarm at Building XX17 and personnel are evacuating. When the Incident Commander arrives on the scene, he reports that there is a fire in Cell 1XW. The Shift Radiation Control Technician is measuring abnormally high radiation levels in the area. When questioned by the LSS, the Incident Commander reports that the FRMS alarm is activated.

Written Exams & Proficiency

(continued)

Question B.3.1: What EAL would you use to evaluate this event? Mark only ONE of the following:

- a) EAL XX17-01
- b) EAL DSCN-01
- c) EAL XX17-03
- d) EAL XX17-02
- e) EAL HS-02

Written Exams & Proficiency

(continued)

Question B.3.2: Given that information, what categorization/classification, if any, would you assign? Mark only ONE of the following:

- a) Operational Emergency Not Classified
- b) General Emergency
- c) Site Area Emergency
- d) Alert
- e) No categorization/classification required

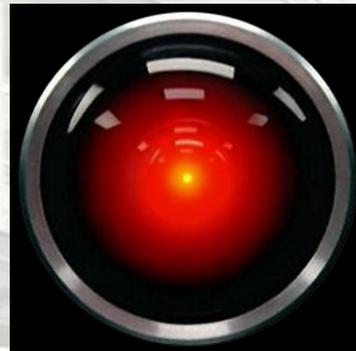
Written Exams & Proficiency

(continued)

- A written exam can give a very good indication of proficiency and use of resources—particularly for key decision-making positions whose focus is use of information and written guides and procedures rather than equipment use
- Followed by performance test to confirm overall proficiency in the position

Back to My Thesis: Solution

- Give HAL a final comprehensive written exam to help determine his proficiency in using his resources to open the pod bay doors!



HAL: “I’m sorry, Thom, I’m afraid I can’t let you do that because...”

Famous last words

HAL: "...the 9000 series is the most reliable computer ever made. No 9000 computer has ever made a mistake or distorted information. We are all, by any practical definition of the words, *foolproof* and *incapable of error*."

Thom: "Yeah, right, HAL, now get out your #2 lead pencil..."