The Iranian Hostage Rescue

Desert One Bottom Line

- Needed 6 helicopters for the mission to succeed.
- Each was assumed to have a 75% chance of completing the mission.
- Sent 8 helicopters.
- What was the probability that 6 or more of the helicopters would complete mission?
  - Only 67%. We lost the bet.

Desert One in Detail

- The hostage rescue, *Operation Eagle Claw*, was an audacious plan involving:
  - all 4 services
  - 8 helicopters (USMC RH-53s)
  - 12 planes (4 MC-130s, 3 EC-130s, 3AC-130s, and 2 C-141s)
  - numerous operators infiltrated into Tehran ahead of the actual assault.
- The basic plan was to infiltrate the operators into the country the night before the assault and get them to Tehran, and after the assault, bring them home.

Desert One, Continued

- The first night, three MC-130s were to fly to a barren spot in Iran and offload the Delta force men, Combat Controllers, and translators/truck drivers.
- Three EC-130s following the Combat Talon's would then land and prepare to refuel the Marine RH-53s flying in from the US Carrier Nimitz.
- Once the helicopters were refueled, they would fly the task force to a spot near the outskirts of Tehran and meet up with agents already in-country who would lead the operators to a safe house to await the assault the next night.
- The helicopters would fly to another site in-country and hide until called by the Delta operators.

Desert One, Continued

- On the second night, the MC-130s and EC-130s would again fly into the country, this time with 100 Rangers, heading for Manzariyeh Airfield.
- The Rangers were to assault the field and hold it so that the two C-141s could land to ferry the hostages back home.
- The three AC-130s would be used to provide cover for the Rangers at Manzariyeh, support Delta's assault, and suppress any attempts at action by the Iranian Air Force from nearby Mehrabad Airbase.
- Delta would assault the embassy and free the hostages, then rendezvous with the helicopters in a nearby football stadium. They and the hostages would be flown to Manzariyeh Airfield and the waiting C-141s and then flown out of the country.
- All the aircraft but the 8 helicopters would be flown back; the helicopters would be destroyed before leaving.

Key Point

- Beckwith and Seiffert had agreed that they would need a minimum of 6 flyable helicopters at Desert One for the mission to continue.

- Beckwith had asked for 10 helos on the carrier to cover for possible malfunctions, but the Navy claimed they could not store more than 8 on the hangar deck.
  - Resource: *Air Force Magazine*

Desert One, Continued

- Conversations with team members reveals that since the helicopters were all to be destroyed, the Navy was also very reluctant to lose more of its RH53 forces in the Gulf.
  - Also used for long-range mine sweeping.

- Each RH53 held 55 passengers. The mission load dictated the minimum number of helicopters.
  - Hostages, assault team, and in-country personnel all needed a ride out of Tehran.

Flight Plan


Soviet Union
Mashhad
Tehran
Helicopter rendezvous in hills
Manzariyeh air base
Tabas
Desert One
Afghanistan
Yazd
Iraq
Iran
Kuwait
Pakistan
Planned route of C-130s carrying Rangers from Wadi Qena
USS Nimitz
USS Coral Sea
Six C-130s with Delta Team
Saudi Arabia
Oman
Masirah

What Happened

- A month before the assault, a CIA Twin Otter had flown into the first landing area, known as *Desert One.* A USAF Combat Controller had ridden around the landing area on a light dirt bike and planted landing lights. That insertion went well, with no contact, and the pilots reported that their sensors had picked up some radar signals at 3,000 feet, but nothing below that.
- Despite these findings, the helicopter pilots were told to fly at or below 200 feet to avoid radar. This limitation caused them to run into a *haboob* (dust storm) that they could not fly over without breaking the 200 foot limit.
- Two helicopters lost sight of the task force and landed, out of action. Another had landed earlier when a warning light had come on. Their crew had been picked up, but the aircraft that had stopped to retrieve them was now 20 minutes behind the rest of the formation.
- Pilots were flying with NVGs and did not have instrument lights to use when they hit the dust storm, which proved to be very disorienting.

What Happened, Continued

- Battling dust storms and heavy winds, the RH-53's continued to make their way to Desert One. After receiving word that the EC-130's and fuel had arrived, the two aircraft that had landed earlier started up again and resumed their flight to the rendezvous. But then another helicopter had a malfunction and the pilot and Marine commander decided to turn back, halfway to the site. The task force was down to six helicopters, the bare minimum needed to pull off the rescue.
- The first group of three helicopters arrived at Desert One an hour late, with the rest appearing 15 minutes later. The rescue attempt was dealt it's final blow when it was learned that one of the aircraft had lost its primary hydraulic system and was unsafe to use fully loaded for the assault. Only five aircraft were serviceable and six needed, so the mission was aborted.

What Happened, Continued

- Things got worse, though, when, due to obscured vision, one of the helicopters moved to another position and drifted into one of the parked EC-130's.
- Immediately both the C-130 and RH-53 burst into flames, lighting up the dark desert night. The C-130 was evacuated and the order came to blow the aircraft and exfiltrate the country.
- However, in the dust and confusion, the order never reached the people who would blow the aircraft. There were wounded and dying men to be taken care of, and the aircraft had to be moved to avoid having the burning debris start another fire.
- Because of this failure to destroy the helicopters, top secret plans fell into the hands of the Iranians the next day and the agents waiting in-country to help the Delta operators were almost captured.

Aftermath

- Although President Carter appeared on television the next day to announce the failure of the mission and to accept the blame, Congress and the Pentagon launched inquiries to determine the reasons for the tragedy.
- The Pentagon probe was handled by a board of three retired and three serving flag officers representing all four services; it was led by retired Admiral James L. Holloway, III. The commission's report listed 23 areas “that troubled us professionally about the mission--areas in which there appeared to be weaknesses.”
- “We are apprehensive that the critical tone of our discussion could be misinterpreted as an indictment of the able and brave men who planned and executed this operation. We encountered not a shred of evidence of culpable neglect or incompetence,” the report said.
- The commission concluded that the concept and plan for the mission were feasible and had a *reasonable chance for success.*

Aftermath, Continued

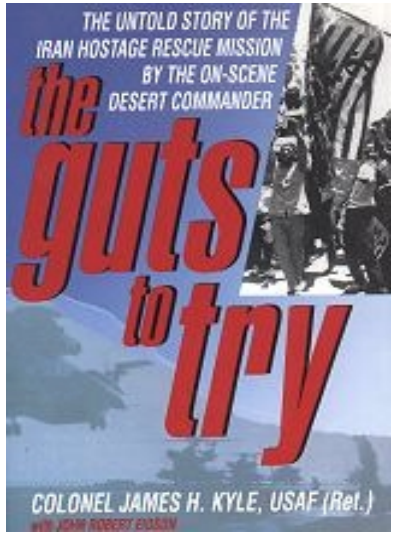
- But, it noted, "The rescue mission was a high-risk operation…People and equipment were called upon to perform at the upper limits of human capacity and equipment capability. *There was little margin to compensate for mistakes or plain bad luck."*
- The major criticism was of the "ad hoc" nature of the task force, a chain of command the commission felt was unclear, and an emphasis on operational secrecy it found excessive.
- The commission also said the chances for success would have been improved if *more backup helicopters had been provided*, if a rehearsal of all mission components had been held, and if the helicopter pilots had had better access to weather information and the data on the RH-53s' BIM warning system.
- And it suggested that Air Force helicopter pilots might have been better qualified for the mission.

Aftermath, Continued

- However, the report also said, “The helicopter crews demonstrated a strong dedication toward mission accomplishment by their reluctance to abort under unusually difficult conditions.” And it concluded that, “two factors combined to directly cause the mission abort: an *unexpected helicopter failure rate* and the low-visibility flight conditions en route to Desert One.”
- Beckwith openly blamed the helicopter pilots immediately after the mission. However, in his critique to the Senate Armed Services Committee, he attributed the failure to Murphy's Law and the use of an ad hoc organization for such a difficult mission.
- “We went out and found bits and pieces, people and equipment, brought them together occasionally, and then asked them to perform a highly complex mission,” Beckwith said. “The parts all performed, but they didn't necessarily perform as a team.”

Aftermath, Continued

- He recommended creating an organization that, in essence, was the prototype of the Special Operations Command that Congress mandated in 1986.
- Kyle, in his book on the mission (*The Guts to Try*), rejected the Holloway commission's conclusions and basically blamed Seiffert and the helicopter pilots for not climbing out of the dust cloud, for not using their radios to keep the formation intact, and for the three helicopter aborts.
- He argued that the task force never had less than seven flyable helicopters. All that was lacking, he wrote, was "the guts to try."



Aftermath, Continued

- Seiffert praised Beckwith and Kyle as professional warriors but disagreed with their criticism of him and his helicopter pilots.
- He equated his decision to ground the chopper with the failed hydraulic system to Beckwith's refusal to cut his assault force, and he refused to second guess the two pilots who had aborted earlier.

Aftermath, Continued

- Seiffert said he was confident that, had they gotten to Tehran, the mission would have succeeded. Kyle was equally certain, writing that: "It is my considered opinion that we came within a gnat's eyebrow of success."
  - This is doubtful—there were lots of other opportunities for things to go wrong.
    - What about the C130s and C141s? What about the helicopters on the next nights? What about the tactical chances of success on the ground?
    - A lot of things ALL had to work, and there was little or no redundancy.
- Beckwith wrote in his memoirs that he had recurring nightmares after Desert One. However, he noted, "In none have I ever dreamed whether the mission would have been successful or not."

The Casualties

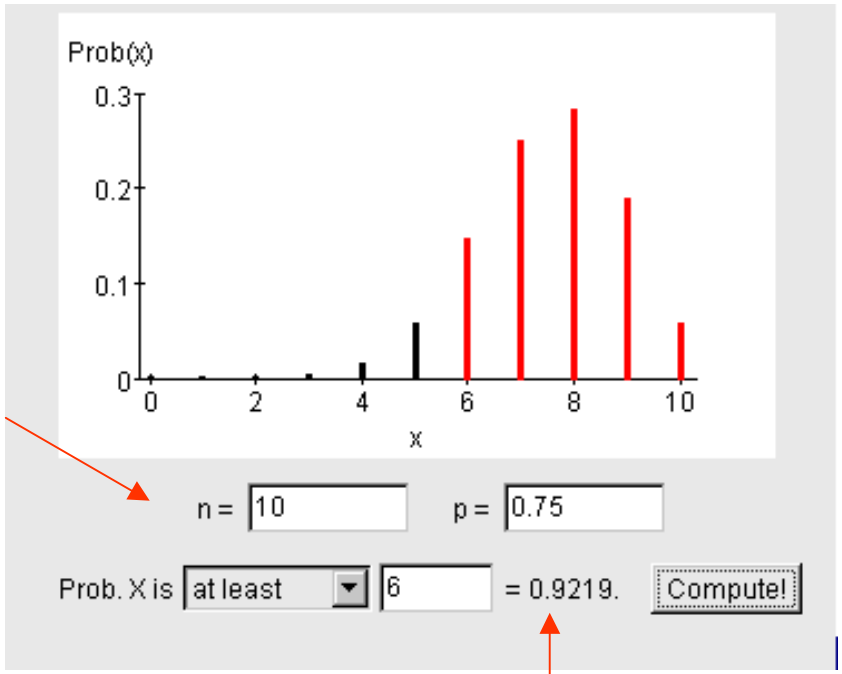
- There is a memorial in Arlington National Cemetery to the men killed on the mission.
    - MAJ Richard Bakke, USAF
    - MAJ Harold Lewis, USAF
    - MAJ Lyn McIntosh, USAF
    - CPT Charles McMillan, USAF
    - TSG Joel Mayo, USAF
    - SSG Dewey Johnson, USMC
    - SGT John Harvey, USMC
    - CPL George Holmes, USMC

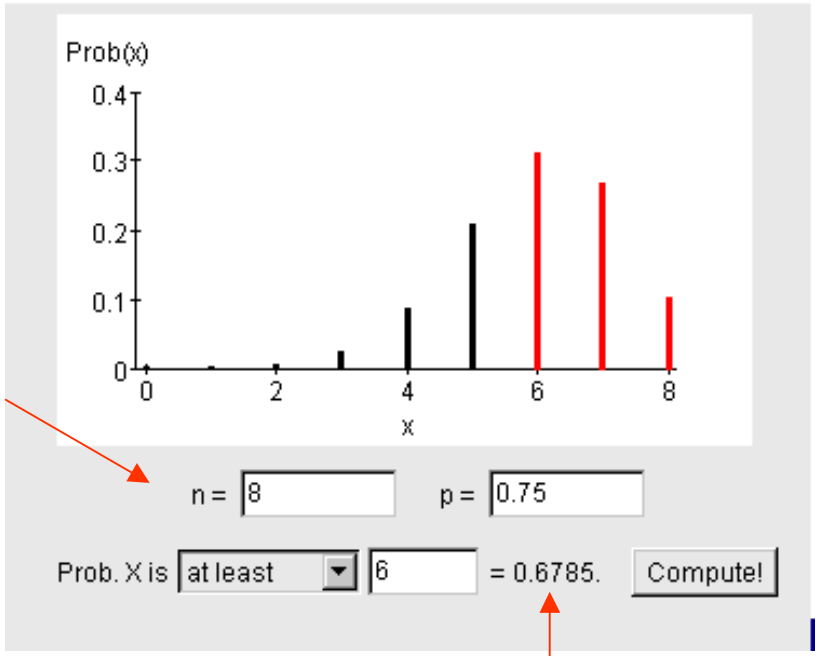
The Arlington Memorial

Probability Issues

- Number of successes required: 6 helicopters.
- Number of trials originally planned: 10 helicopters.
- Probability of success: 75% per helicopter.
  - But what is the probability in a *haboob*?
- P(six or more survive | n = 10) = 92%.
- Only eight helicopters allowed.
  - P(six or more | n = 8) = 67%.
- Assumes independence.

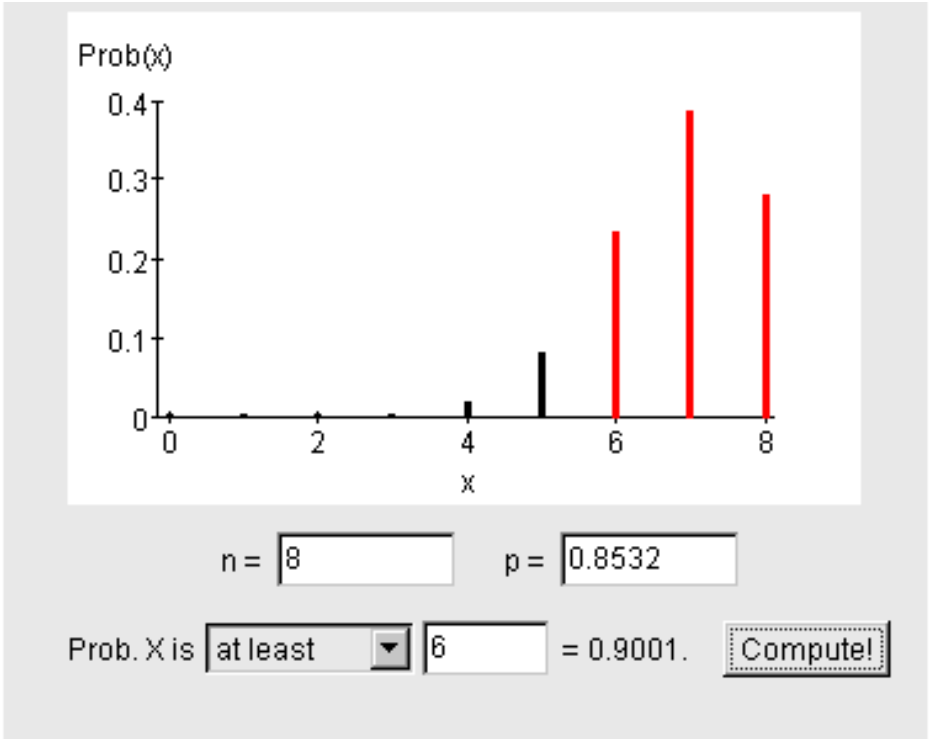
N =10 vs. N = 8


Prob(x)
0.3
0.2
0.1
0
0
2
4
6
8
10
x
n = 10
p = 0.75
Prob. X is at least 6 = 0.9219.
Compute!


Prob(x)
0.4
0.3
0.2
0.1
0
0
2
4
6
8
x
n = 8
p = 0.75
Prob. X is at least 6 = 0.6785.
Compute!

Afterthought

- If you send 8 and want a 90% chance of having 6 or more, what is p?



Comment

- Unlikely anyone did such an analysis, because no one would have bet on an 85% success rate for each of the helicopters.
- If you want a 95% chance of 6 or more, sending 8, need p = .89.
- If you want a 99% chance of 6 or more, p = .94.

Comment

- Even if 6 helicopters *had* worked, what about the other aircraft?
  - Needed MC-130s to ferry troops.
  - Needed EC-130s to ferry fuel.
  - Needed C-141s to evacuate.
  - Needed AC-130s for air support.
- What was the overall aviation chance of success?
  - That is an upper bound on the mission chance of success.

Conclusions

- We are 15+ years too late for Desert One, but we should make sure this generation of officers can do probabilistic military planning. We owe it to the ghosts of the 8 men who died on the desert floor.