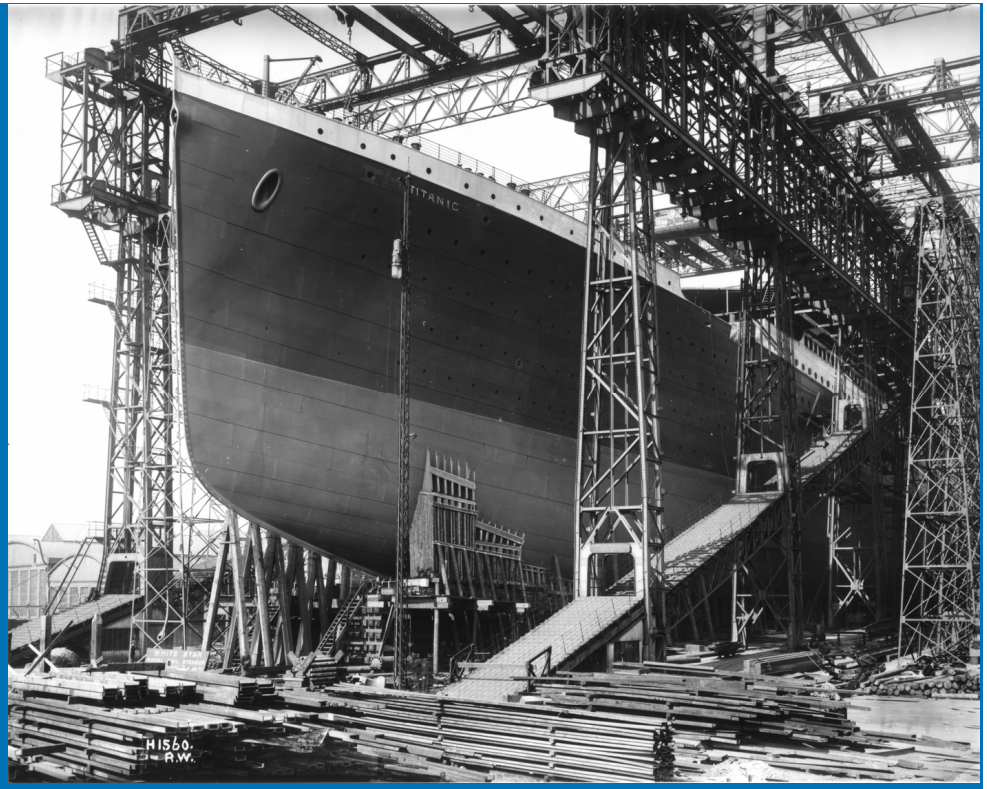


"Lessons From the Past that Assist the Projects of Today to Shape the World of Tomorrow"
www.lessons-from-history.com

"Titanic Lessons for IT Projects"

IT Projects from Hell

Authored by Mark Kozak-Holland, HP Services
xxx xxth, 2007
Presentation example for your event
Lessons-from-History

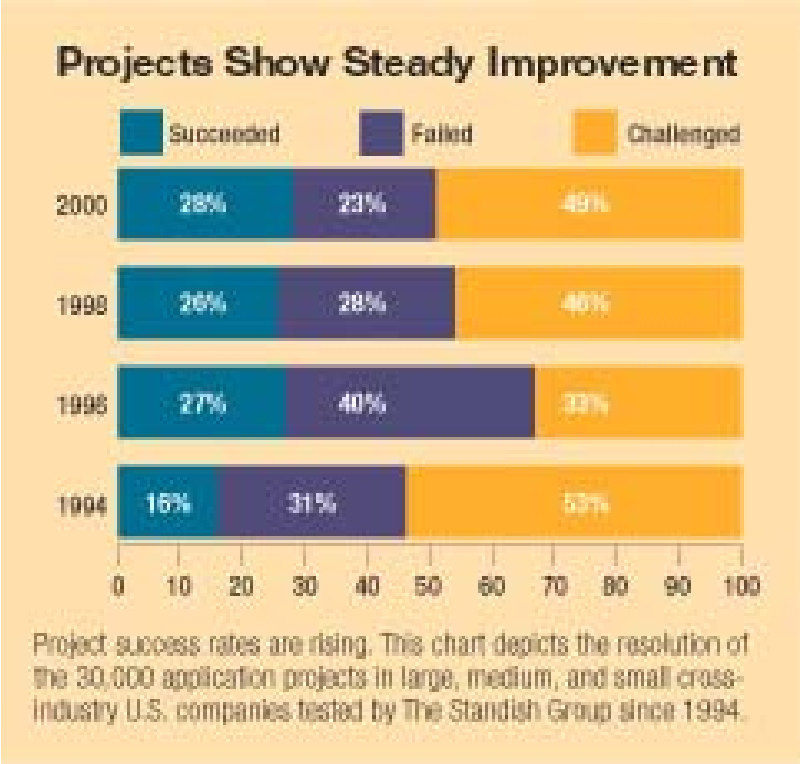
Objectives: Analyze *Titanic's* construction project and voyage and provide a contrary view to popular held belief

- It explains how we can take stock and use lessons learned to help understand key project issues.
- It looks at key decisions made during the project that led to compromises and cutting corners in the project stages.
- It questions why the ship's captain was unable to prevent the disaster.
- It makes a step by step comparison to today's IT projects.

- Please prepare questions for the end of the presentation.

As you probably know the success rate of IT projects is stubbornly low as first shown by the "Chaos" reports from Standish Group

- Only 29% of all IT projects finish on-time, on-budget, and with all the features and functions originally specified.
- Approximately 18% of all IT projects are canceled at some point during the development cycle.
- About 53% of all IT projects are challenged, project is completed/operational but over budget, over time, and fewer functions.
  - Source: "Chaos, a recipe for success," Standish Group, 2004. Part of a series 1994, 1996, 1998, 2000, 2004 - 280,000 projects evaluated



Project success rates are rising. This chart depicts the resolution of the 30,000 application projects in large, medium, and small cross-industry U.S. companies tested by The Standish Group since 1994.

- **Hypothesis:**
  - IT projects set seeds for future operational failures - take months to come to light.
  - Problems in on-line operation attributed back to poor decisions made in IT project.

Check www.lessons-from-history/Project Success or Failure/

Bad IT service performance, IT project success rates, & IT investments are not just a CIO problem but for the whole c-level executive

- **Corporate benchmarking study identified serious deficiencies in senior executive management skills with IT projects. Lack of PM skills cut benefits of IT projects by 25%.**
- **"Project governance practices today focus on making commitments, not keeping them. Executives are involved in selecting and approving projects, but rarely delivering them." 49% experienced one project failure in past 12 months.**
  - **Source: KPMG's Global IT Project Management Survey, July 2005.**
- **The CIO and entire c-level executive need to understand:**
  - **The relationship between IT projects & on-line operations**
  - **What can go wrong in a complex on-line operation? the cost and impact?**
  - **How it can be prevented?**
  - **ROI for creating a strong online operation**

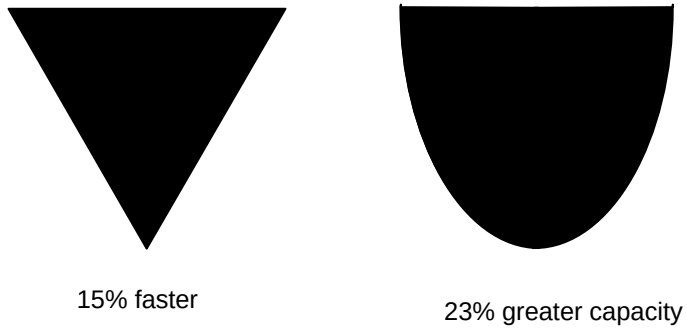


To better understand the relationship between on-line operations and IT projects imagine yourself back in 1912 in one of *Titanic's* lifeboat being rescued by *Carpathia*. You ask yourself:

- How could such a disaster happen?
- Why did the ship collide with ice?
- Why did the ship sink it was supposed to invincible?
- Why didn't the ship slowdown through the ice field?
- Was the ship carrying lookouts?
- Who was in control of the ship?
- Why were there so few lifeboat places?
- Were there no other ships in the vicinity?
- Why did it take so long for rescue?
- Are these just the symptoms and not the causes?
- **We need to go back to 1909 and look at the project itself.**

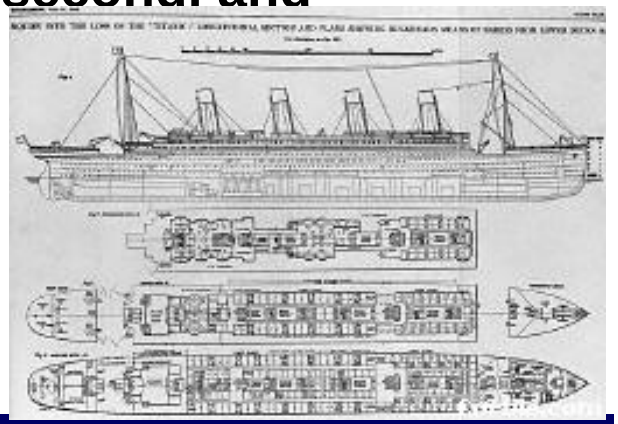
In 1909 White Star was facing stiff businesses pressures no different to corporations today. Executives responded with a new business strategy and took advantage of emerging technology

- Increase in competition and new entrants.
- Aging technology infrastructure, ailing and inferior business services, leading to loss of market share and customers.
- Invested in a technology infrastructure with 3 new super liners to sweep Atlantic.
- Pushed emerging technology to limits.
- Addressed all three passage classes, priority on first-class.
- Improved services by quality of crossing and customer experience.
- Ships built for space and comfort (capacity) and not speed.



The strategy required major new technology investments but the business case was really solid. The business requirements specified a lavish ship with space that addressed 3 classes.

- Project “profitability analysis” showed a breakeven in 2 years.
- The construction project would take 6 years.
- A staggering 75% of revenue driven by first-class passengers.
- The price of:
  - 1st class suite - $4,350, 2nd class suite - $1,750, 3rd class ticket - $30.
- *Titanic’s* class segregation no different to how today’s organizations cater to customer segments.
- By other ship standards third equivalent to second. and second to first.
- Space allocated:
  - 60% for 905 first-class passengers.
  - 7% for 1134 third-class passengers.

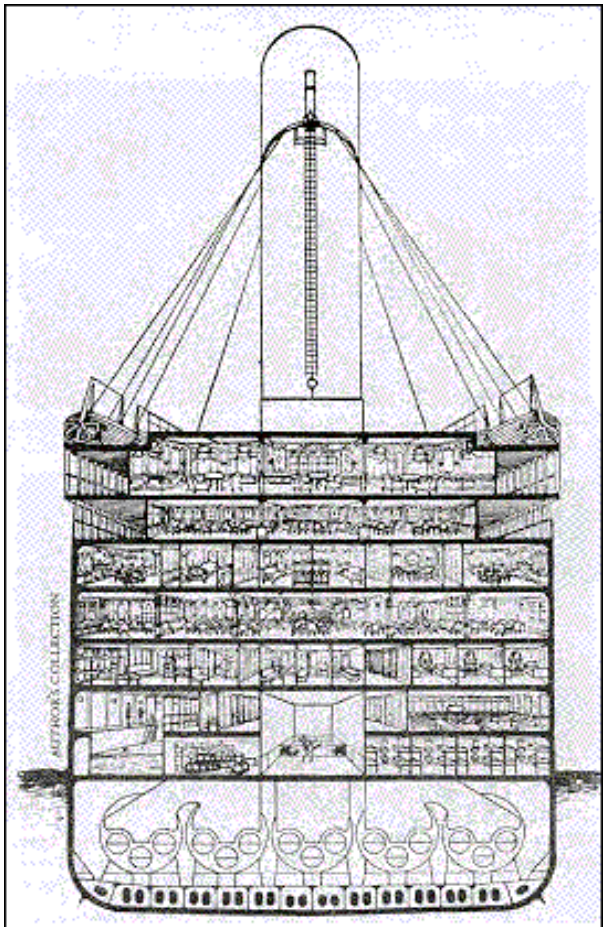


In *Titanic*'s architecture stage like in any IT project Architects faced many investment options

Thomas Andrews

They created a luxury liner with priority to first-class service and accommodation priority on functional requirements (What).

- **Harland and Wolff were the most expensive craftsmen in Europe**
- **Lavish attention and investments to passenger comfort implied an equivalency in safety and operations features or non functional requirements (How).**
- **The designers had investment choices in safety features, from lifeboats to the new technologies like bulkheads, a double-skin hull, and electric doors.**



Cutaway View of RMS Titanic

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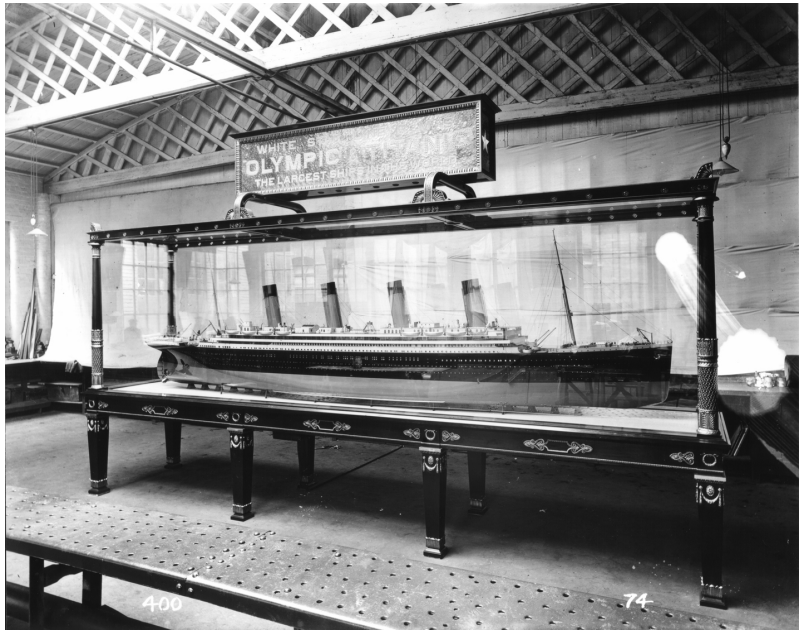
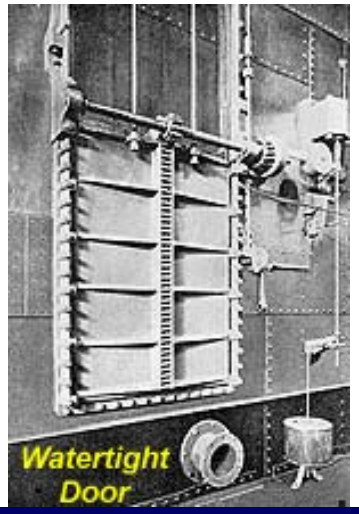
White Star invested in a ship-builder's model the modern equivalent of an IT pilot. They used it to analyze all exposures to the possibility of loss.

- White Star used early modeling techniques to test the designs and identify vulnerabilities.
- Shipbuilders relied heavily on flow analysis or "static testing" to review ship characteristics.
- This was a sound strategy considering the limited testing options available, and it identified problems prior to construction.
- Risks of crossing Atlantic well known with 400 years of travel.



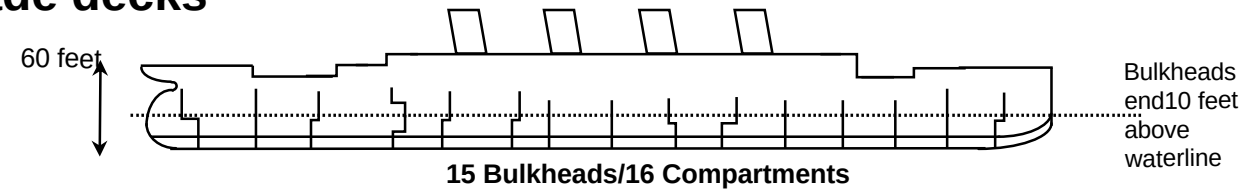
Titanic's construction stage integrated many complex technologies and selected safety features to reduce risks

- Many disparate technologies integrated and controlled from a single point, the bridge.
- In selecting the "availability level" and "safety features" assumptions were made about non-functional requirements. This led to over confidence in ship safety as construction progressed.
- Investment dollars were put into expensive safety features based on new technologies in preference to lifeboats.
- A perception developed that *Titanic* was unsinkable.



Decisions were made that compromised individual safety features and escalated the level of risk

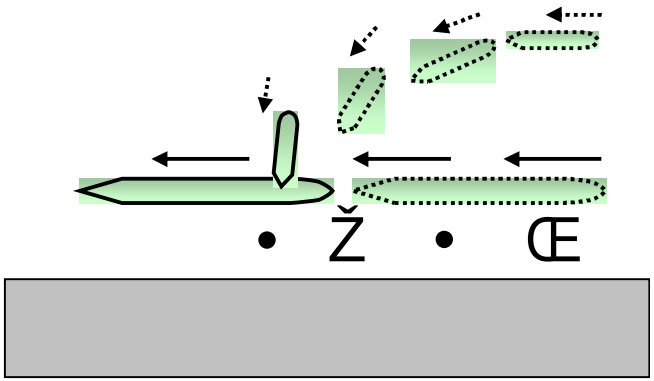
- No *Titanic* construction dollars were diverted from basic safety requirements to enhance the luxurious first-class.
- BUT esthetic factors like spacious public areas compromised the bulkhead wall height, built 10 feet above the waterline.
- The double skin not continued (narrowed interior) was only 7 feet deep and below the waterline.
- 16 lifeboats were fitted rather than the recommended 48 (triple stacked) to provide an uninterrupted view for first-class promenade decks



15 Bulkheads/16 Compartments

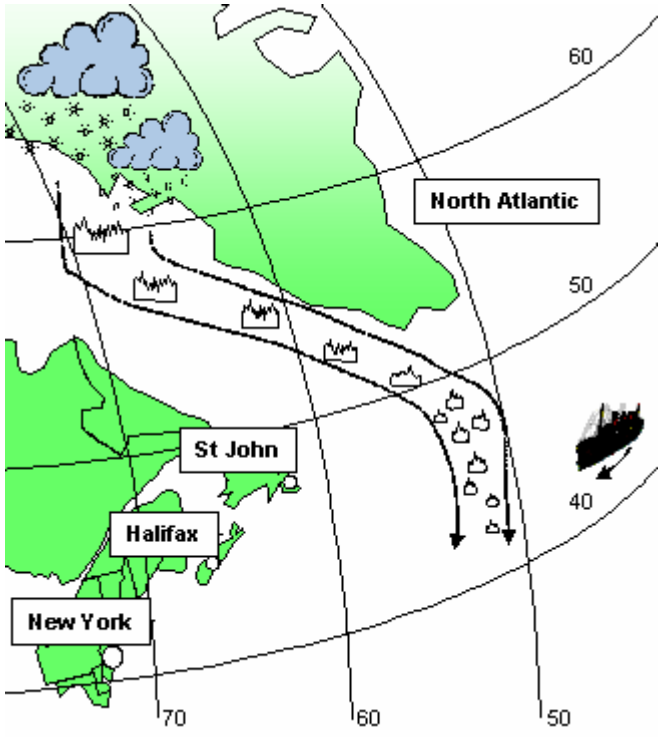
The business pressures for *Titanic* to go live were enormous with the large investments tied up in its four-year construction.

- ***Olympic*** **was in dry dock for repair because of the collision with HMS *Hawke,* one sixth of original cost. This delayed *Titanic's* maiden voyage by a month. *Titanic's* propeller shaft was used on the *Olympic*.**
- **Extensive sea trials and testing were not considered critical partly because *Olympic* was established in service.**
- ***Olympic*** **was a test bed or yardstick for *Titanic*. It is debatable how well the experiences from *Olympic* were transferred.**
- **Formalized change-management/ control theory not been established.**
- **Too much faith in *Olympic's* track record.**



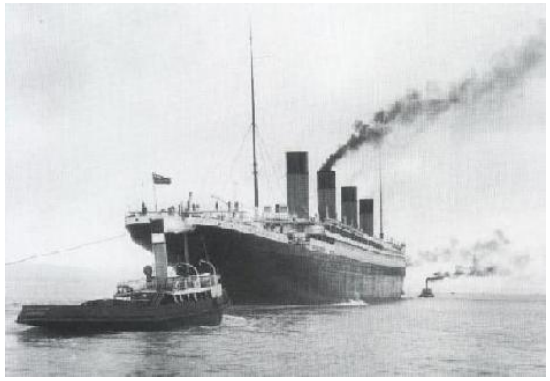
Titanic's captain and officers were well aware of "Iceberg Alley" and the associated risks.

- A well known feature of the North Atlantic to experienced mariners.
- Winter of 1911 unseasonably mild.
- April worst month for icebergs.
- Sailing path moved 10 miles south.
- Fate of French liner *Niagara* known.



At this point in the project it is common to implement Service Level Agreements. Bruce Ismay went further and compromised these.

- **Bruce Ismay published a shipping announcement in the New York Times that *Titanic* would arrive a day early to published schedule. This was a new service level that proved to be fateful in pushing the ship to its operational limits.**
- **The passenger list was a "who's who" of public life, with 300 very famous people, collectively worth of over $500 million. This underlined public confidence in the ship.**



The operating stage required the deployment of the ship into production and her maiden voyage

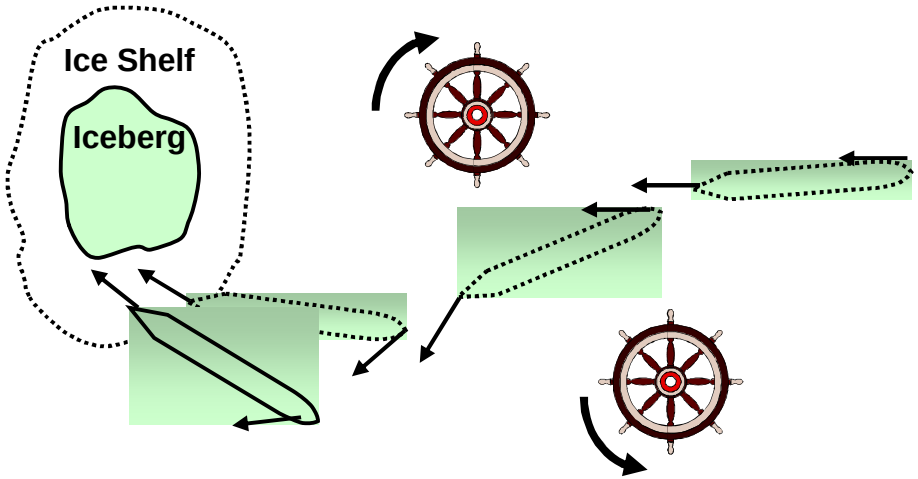
- *Titanic* had a number of built-in feedback mechanisms that were discounted, fudged (ice bucket test), or just ignored.
- Operators overloaded by commercial traffic (noise) did not pass the ice warnings (signal) along in a timely fashion.
- Ice-warning information eventually communicated through the hierarchy to Captain Smith wasn't adequately acted on.
- The captain very resistant to technology relied on "gut" feel and experience and undermined Marconigram information.
- The officers kept their binoculars and did not share them with the lookouts.

An unidentified wireless operator in a shipboard Marconi telegraph room probably similar to the *Titanic*'s. By 1912, all North Atlantic passenger ships carried wireless equipment.

The *Titanic*'s two wireless operators, John Phillips and Harold Bride, were technically employed by the Marconi company but received their paychecks from the White Star Line.

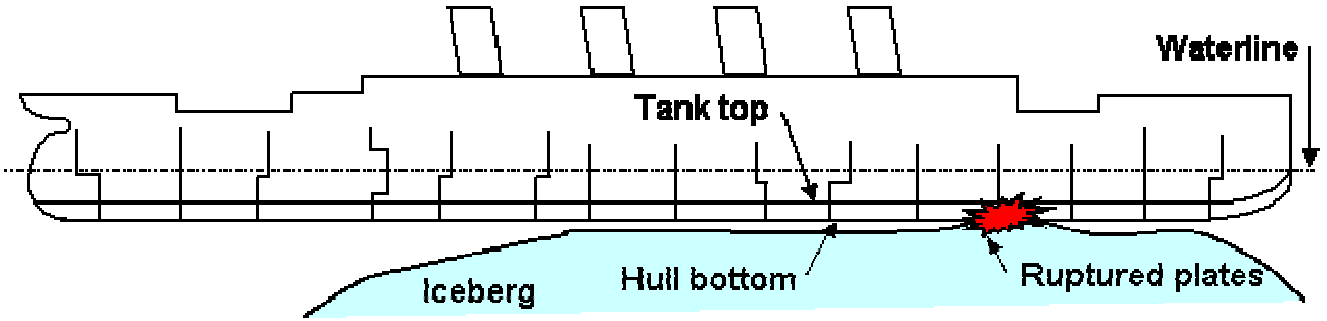
The collision was inevitable and Murdoch almost succeeded pulling off a brilliant maneuver.

- All the feedback systems were compromised.
- The ship reached its peak speed as three additional boilers were lit, more than at any other time in the journey,.
- *Californian's* last radio message was ignored.
- The lookouts warning came 37 seconds before the collision.
- Officer Murdoch tried to dodge the iceberg and decelerate the ship through a "port-around" or "S turn."



Unperturbed the bridge sends two assessment groups to survey the ship for damage.

- No sharp jolt of ship slamming horizontally into immovable object.
- No rebound effect from side swipe or glancing blow.
- No on thrown about, breakfast cutlery in dining rooms barely rattled.
- No deaths, no injuries, no broken bones. The ship quivered or rumbled for several seconds.



Two assessment groups surveyed the ship for damage. Bruce Ismay made a fateful decision to prove *Titanic* could save herself.

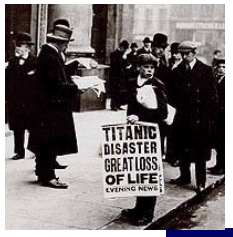
- The first group quickly return with an inaccurate report of no major damage. They had descended only a few decks.
- Ismay's dilemma as there were several options available for recovery.
  - Remain static and put out a distress call.
  - Restart the engines and limp back to Halifax.
- Before second group returned with architect and carpenter the director took the decision to sail off the ice-shelf.
- First wireless message sent to White Star office in New York.
  - "TITANIC PROCEEDING TO HALIFAX. PASSENGERS WILL PROBABLY LAND THERE WEDNESDAY; ALL SAFE. SMITH"
  - All true at 11:53 pm.
- The pumps could not keep up with the increased flooding.
- The architect predicted the ship had 2 hours.

The officers and crew operated in a state of disbelief unable to perform an effective recovery. Panic ensued amongst passengers.

- The disaster assessment took 20 minutes, and 65 minutes before the captain ordered lifeboats filled.
- Poor communication impeded passengers & crew from reacting, possibly deliberate to avoid panic.
- The hierarchical organizational structure and physical segregation controlled information flow.
- Many passengers got up and went back to bed.
- The first life-boat left half full reluctance to get in.
- The crew skeptical that anything was serious. Any recovery plan would have been poorly executed.
- Launching 16 lifeboats took over 90 minutes. The last 2 Englehardts were floated off upside down.

Following *Titanic*'s disaster, both the U.S. and British authorities conducted post-mortems. The U.S inquiry came close to uncovering the cover up.

- US inquiry called 82 witnesses, specialists and technical experts.
- Determined the ship had reached top speed through the ice-field with no attempt to slow down.
- Forced Bruce Ismay to remain in U.S. & grilled him over role as director, and relationship with captain, officers and crew.
- Recommended lifeboat space for every person on all ships from U.S. ports; lifeboat drills; adequate manning of boats; and 24-hour operation of radiotelegraph equipment.



- British inquiry saved White Star from bankruptcy to stop German competition.
- Saw European war looming, needed large ships for troops and materials.
- Condemned Captain Lord for not responding to *Titanic's* flares.
- Criticized British Board of Trade for failing to update lifeboat regulations.
- Today private lawsuits would have brought White Star.
- *Titanic* unnerved western society's faith in technology progress.
- *Olympic*, served distinguished 24 year career before being scraped.

Questions

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