

Professional Practice

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What is “Professional Practice”

Graduates of Comp. Science are *expected* to behave in a certain way by:

- Codes of Conduct (e.g. BCS and ACM) define the discipline
- Legislators lay down regulations and laws
- Employers for whom you will work have expectations
- Colleagues with whom you will work may also expect behaviours

General “ethical” principles (which you’ve already seen) are part of this

But “professional practices” go further...

They include issues specifically relating to discipline of Comp. Science

Simon's Seven "C"s of Professional Practice

- Confidentiality: preventing the release of sensitive information
- Capability: ensuring you have skills & competence to perform a task
- Coverage: attempting all tasks that should have been addressed
- Completion: finishing all tasks to an adequate level
- Conformance: awareness and adherence to the laws/governance
- Culpability: accepting responsibility (and maybe taking the blame)
- Conflict: dealing with conflicts of interest (financial, social or political)

How best to consider these ?

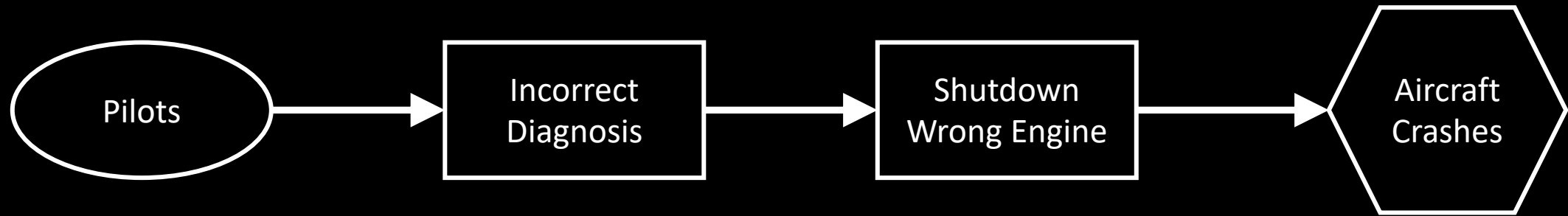
- We could talk about these in theory and at length
- This is however very tedious to listen to
- Much better to use a case study
- Illustrate key elements of professional practice...
- And demonstrate why they are so important !

East Midlands “Kegworth” Air crash



Who was to blame ?

So basically the pilot was to blame



All fairly clear-cut ?

Or is it...

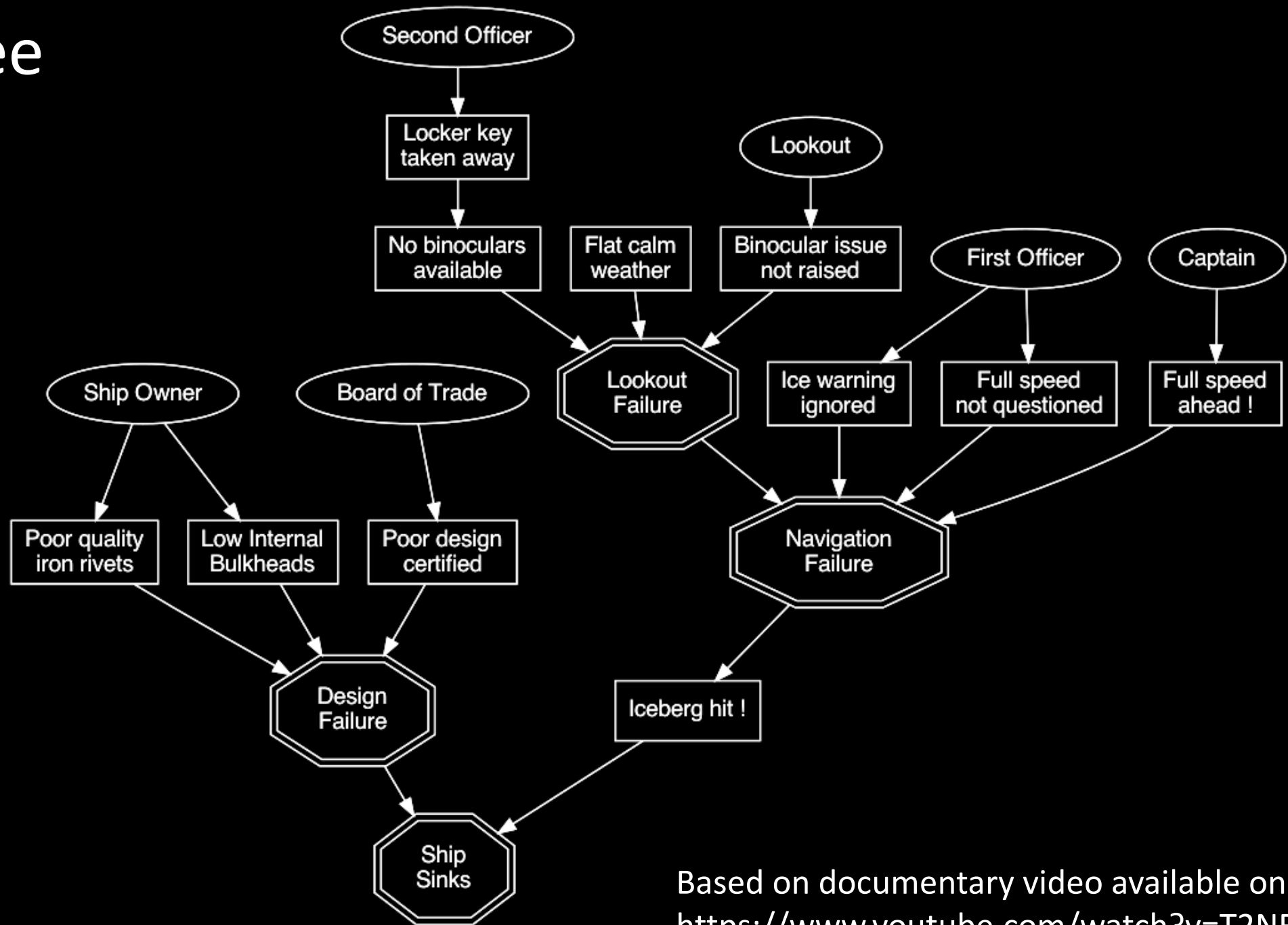
What sunk the Titanic ?





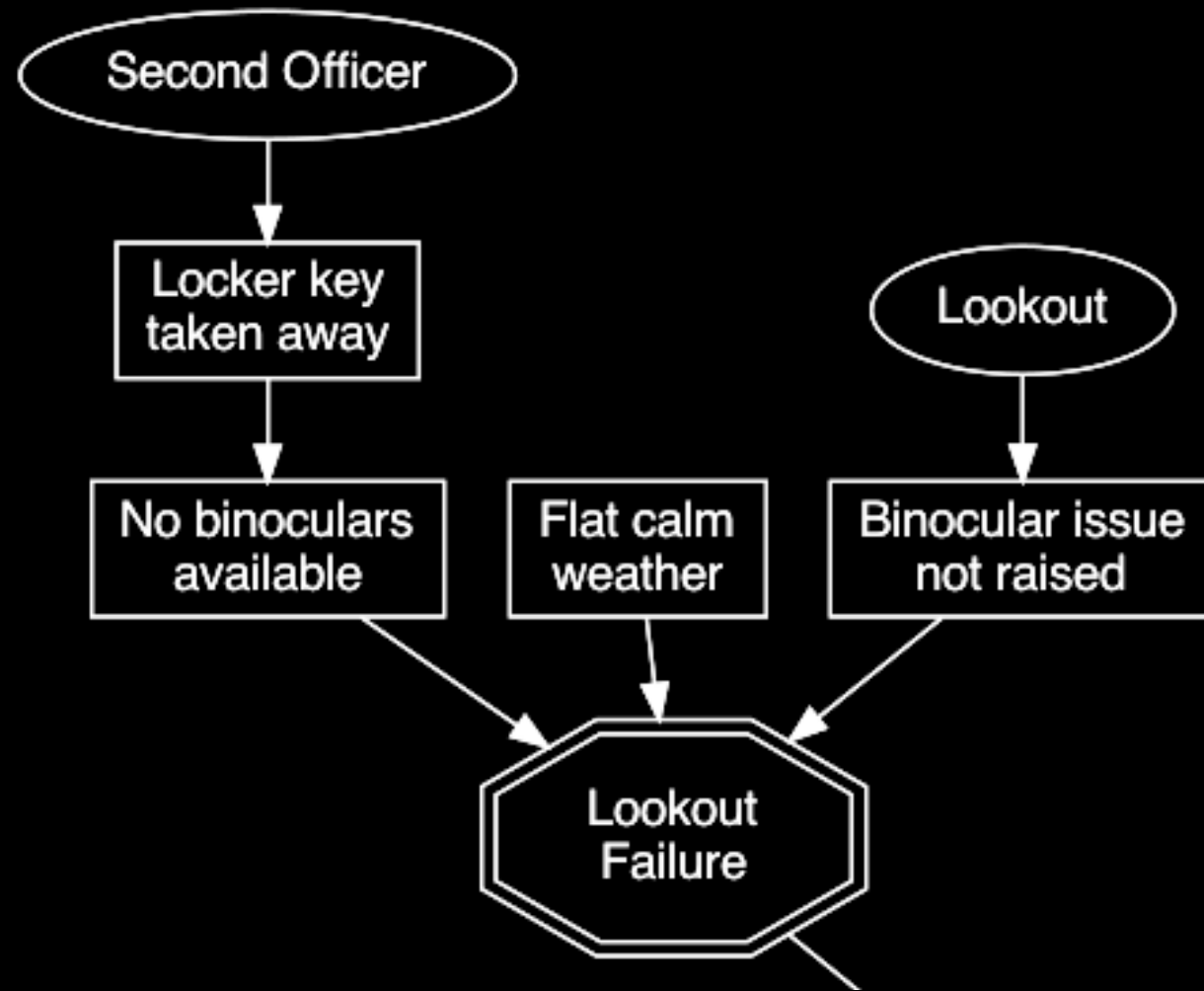
Let's think about it in more depth...

Fault Tree

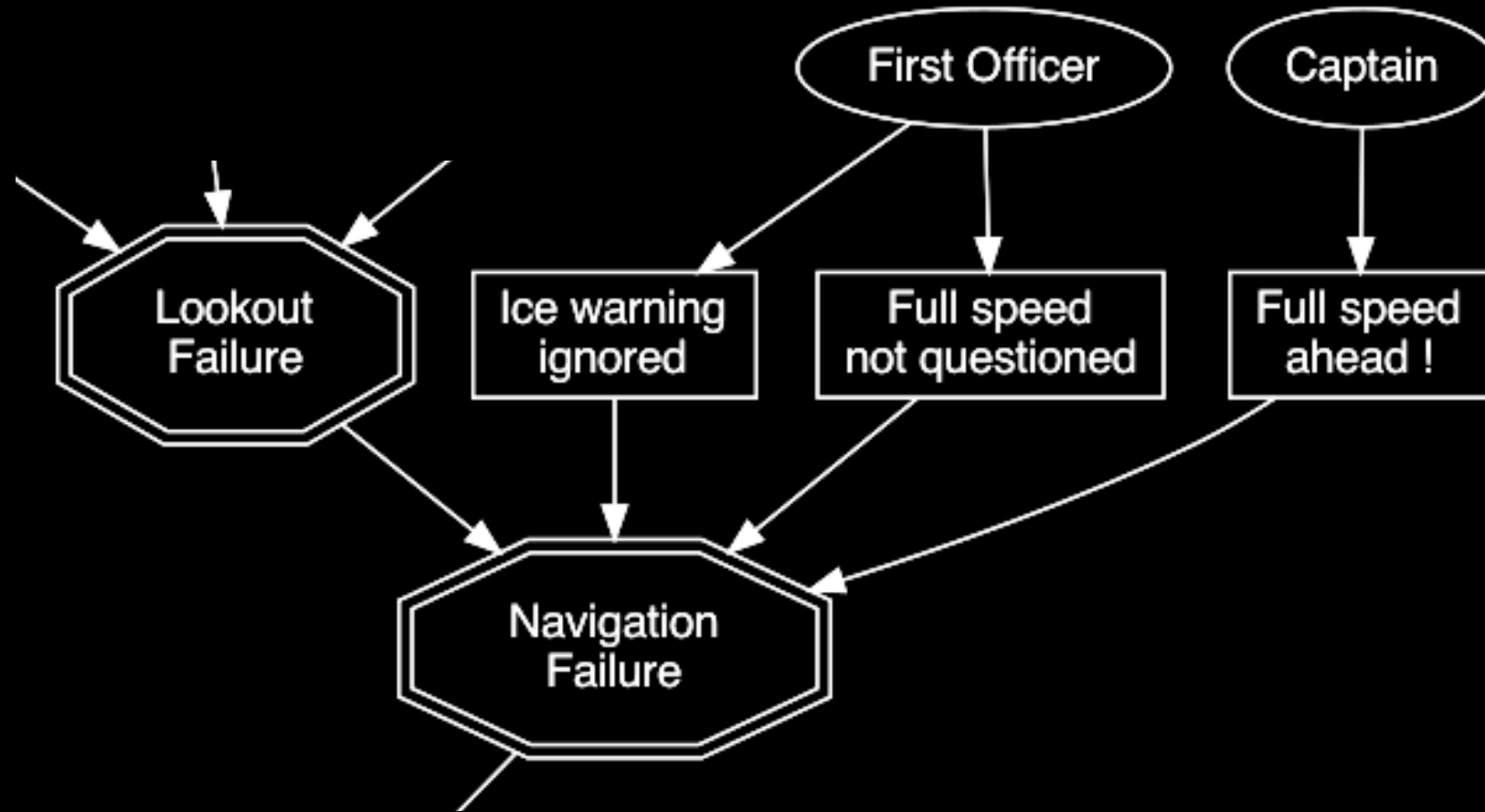


Based on documentary video available on YouTube:
<https://www.youtube.com/watch?v=T2NFMzbt0FE>

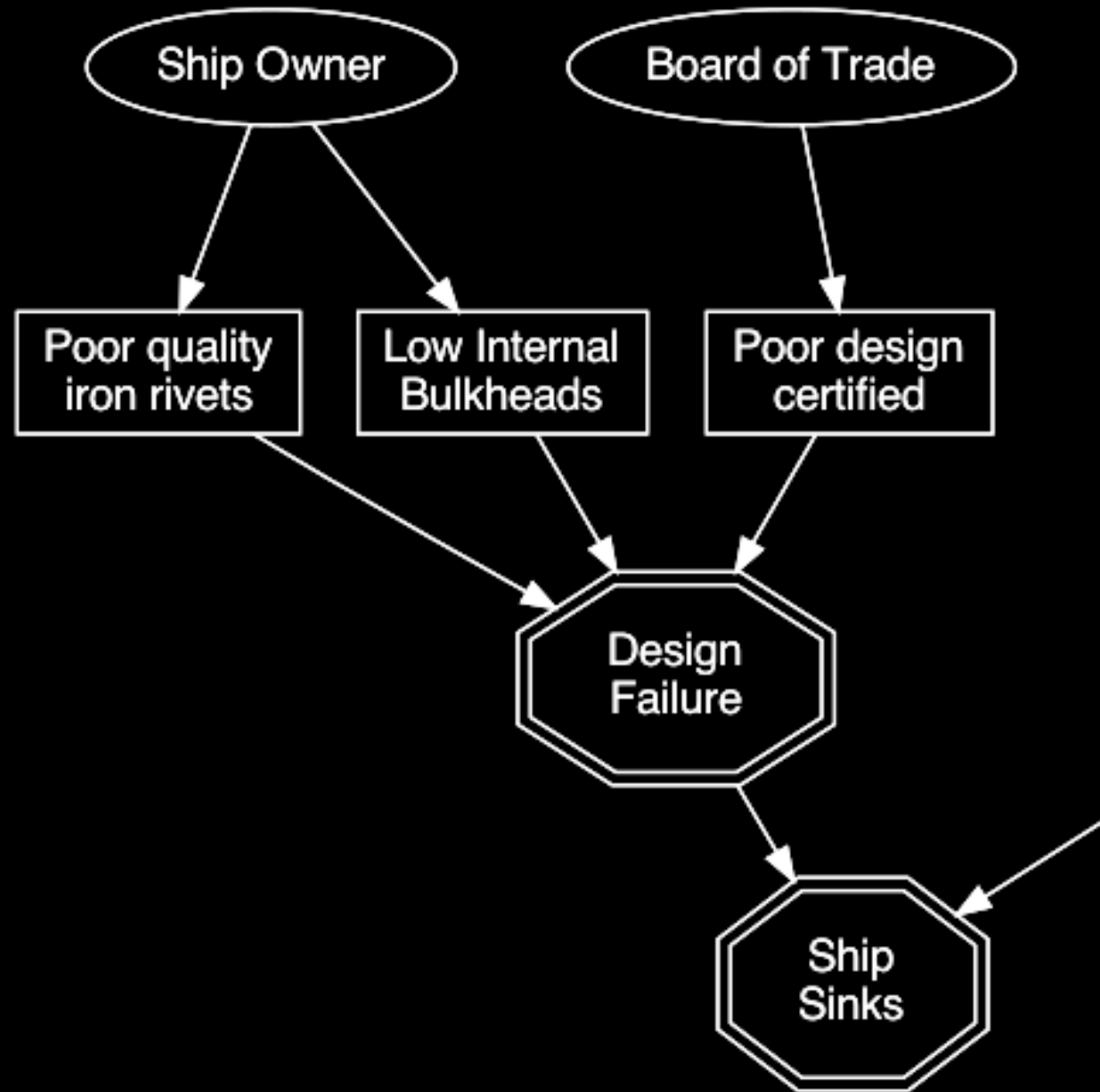
Fault Tree



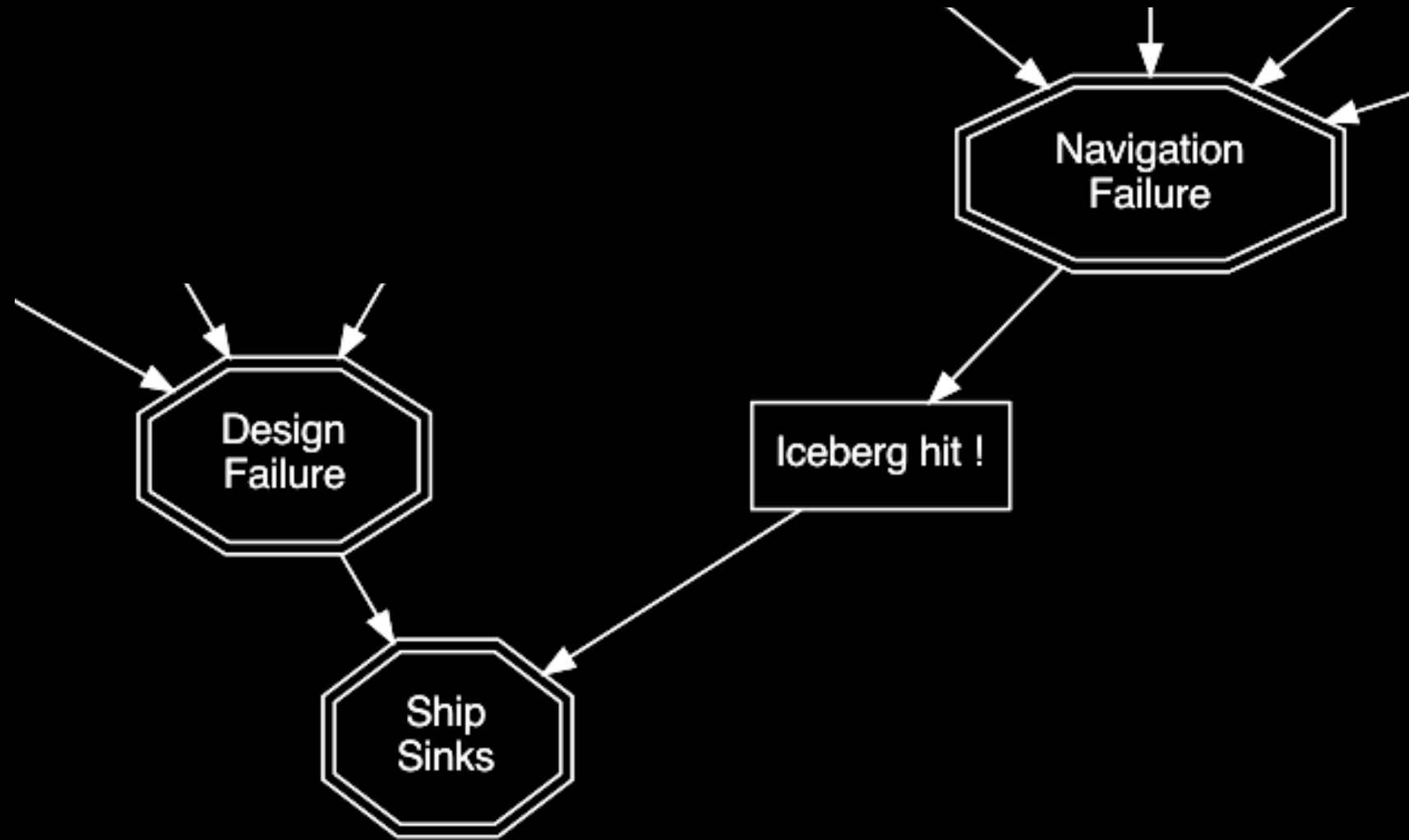
Fault Tree



Fault Tree



Fault Tree



With this in mind, let's return to Kegworth...



Still blame the pilots ?

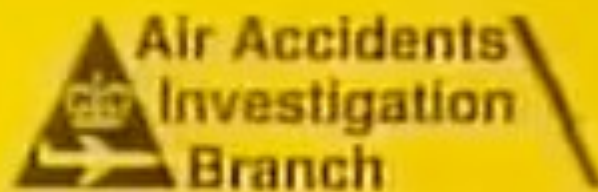
What about the training programme ?



Pilots' mistake wasn't even primary failure !



Final thoughts about regulation



Report on the accident to
Boeing 737-400 G-405ME
near Kegworth, Leicestershire
on 8 January 1989

Who was to blame ?

- Pilots flying aircraft
- Passengers
- Air traffic control
- Airline
- Other pilots in airline
- Aircraft Manufacturer
- Cockpit Designers
- Engine Manufacturer
- Civil Aviation Authority (regulators of airlines)
- Air Accidents Investigation Branch (government)

<https://tinyurl.com/who-was-to-blame>

First Assessment

- The 1st assessment is based on the Kegworth case study
- You'll need knowledge of the domain and causes of the crash
- So it would be a good idea to re-watch the videos !
- You'll be asked to undertake software engineering activities:
Analysis, Requirements, Design, Testing etc.
- You WON'T need to use any development support tools
(Intellij, JUnit, GitHub, Kanban etc.)

Questions ?