One Atmosphere

Innovation in Sub-Sea Systems

# BACKGROUND

| | |
|---|---|
| 2009 | Inflation Concept moved to Avn |
| 2010 | CTD Prep |
| 2011 | CTD awarded by Defence |
| 2012 | Conduct CTD |
| 2013 | CTD Successful completion |
| 2014 | CTD Phase 2 Integration with Airbus Group AP |
| 2015 | Phase 2 Complete |
| 2015 | Civillian R&D commence |
| 2015 | Defence Innovation Research Funding awarded |
| 2016 | A109 sideward Floatation Demonstrated |
| 2016 | Production Preparation Mil/Civ |

# MILITARY APPLICATION

# Pegasus

- Lightweight
- Underwater inflation
- High tensile strength buoyancy bags (Super fibre technology)
- Role equipment

Incidents involving helicopters
operating over the sea have caused many deaths.

Lack of post crash safety systems
have been identified as a cause for the preventable deaths.


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# Winter testing in Tasmania.

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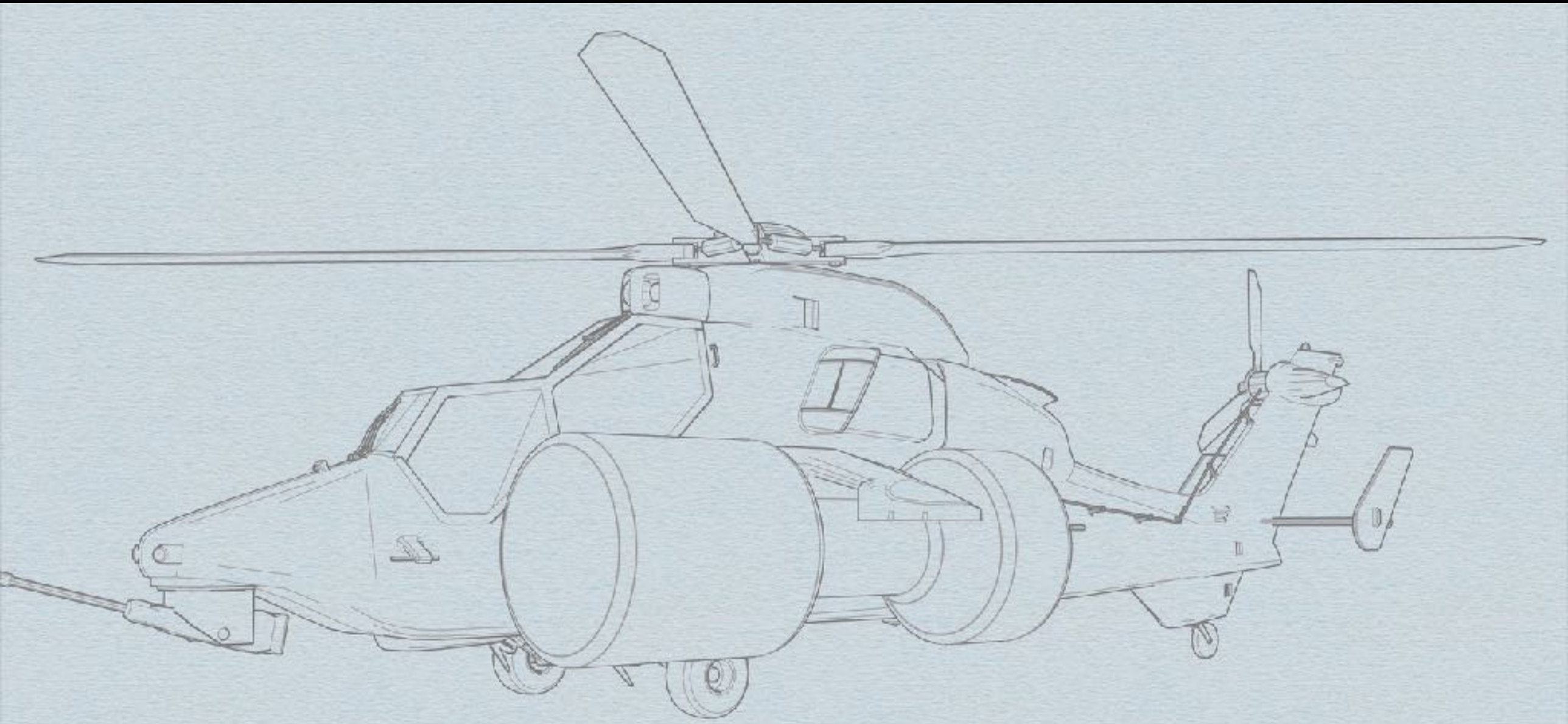


# Different shape = Floating variation

# CIVIL APPLICATION

Current floatation systems that allow an aircraft cabin to be completely flooded are inadequate as evidenced by the drowning statistics for North Sea operations (CAA Stats).

OA is developing a supplementary floatation system that greatly enhances survivability by ensuring breathing space is available to passengers and aircrew (takes drowning out of the equation).

Requirement is to achieve a legislative effect to that takes technological advancements into consideration to prevent the drowning of passengers and aircrew. (i.e. legislate breathing)

Newly developed Lightweight and rapid inflating systems have been developed and proven (ADF DSTG CTD*).

*Australian Defence Force, Defence Science Technology Group, Concept Technology Demonstration

One Atmosphere has begun the certification process for the Australian Defence Force and EASA.

OA Staff include:

- Operational Airworthiness Expertise
- Technical Airworthiness Expertise
- Software Certification Expertise
- Civil and Military Aircrew

**Certification has been considered from day 1.**

# Ditched Aircraft Stability

**One Atmosphere is developing a controlled method of conducting capsizing allowing us to gather the required data for modelling* in all sea states.**

**This will enable assumptions to be reduced and achieve the most survivable outcome for passengers and aircrew.**

*Current contractual requirement for Australian Defence Force, Defence Science Technology Group.

# 90 Degree Floating Aspect (Asymmetric)

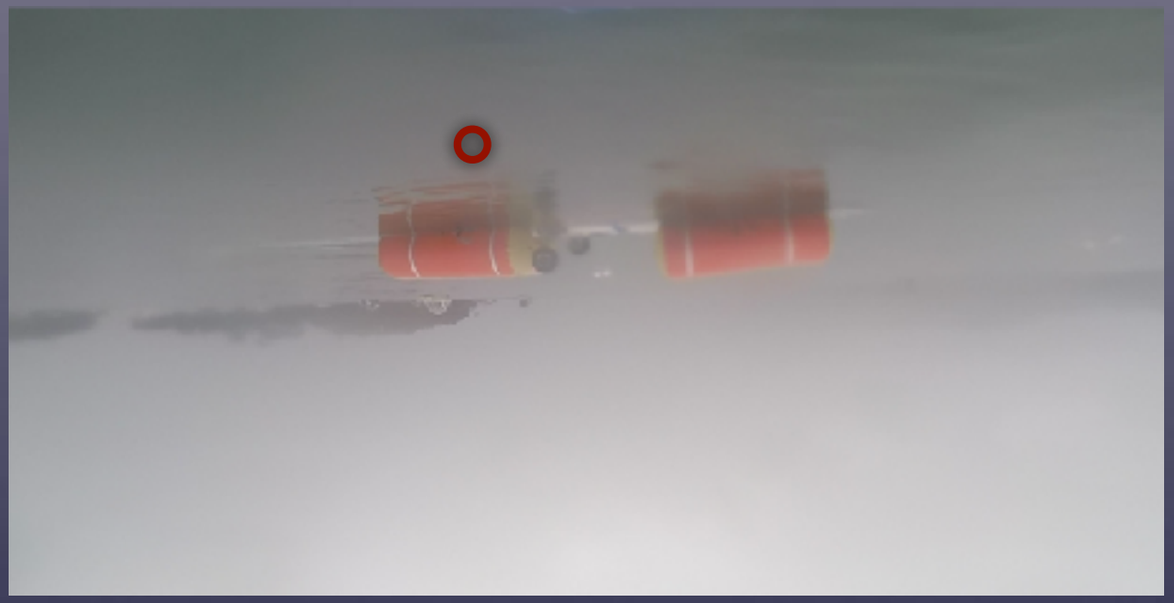
Advantage: Cabin volume over 90% air for increased survivability
Disadvantages: Egress more difficult
Potentially unstable in elevated sea states
Unknown flotation aspect (two outcomes for training)

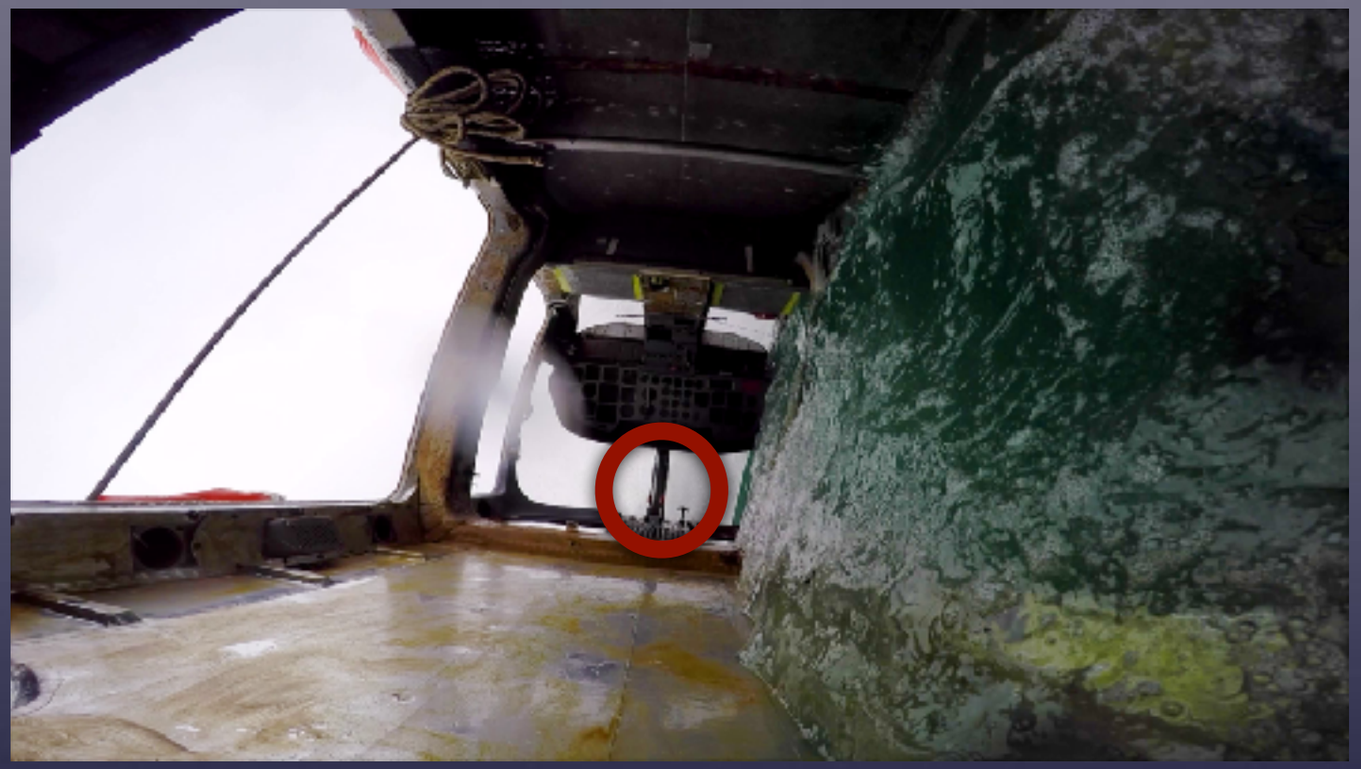
# 35 to 45 Degree Floating Aspect (Asymmetric)

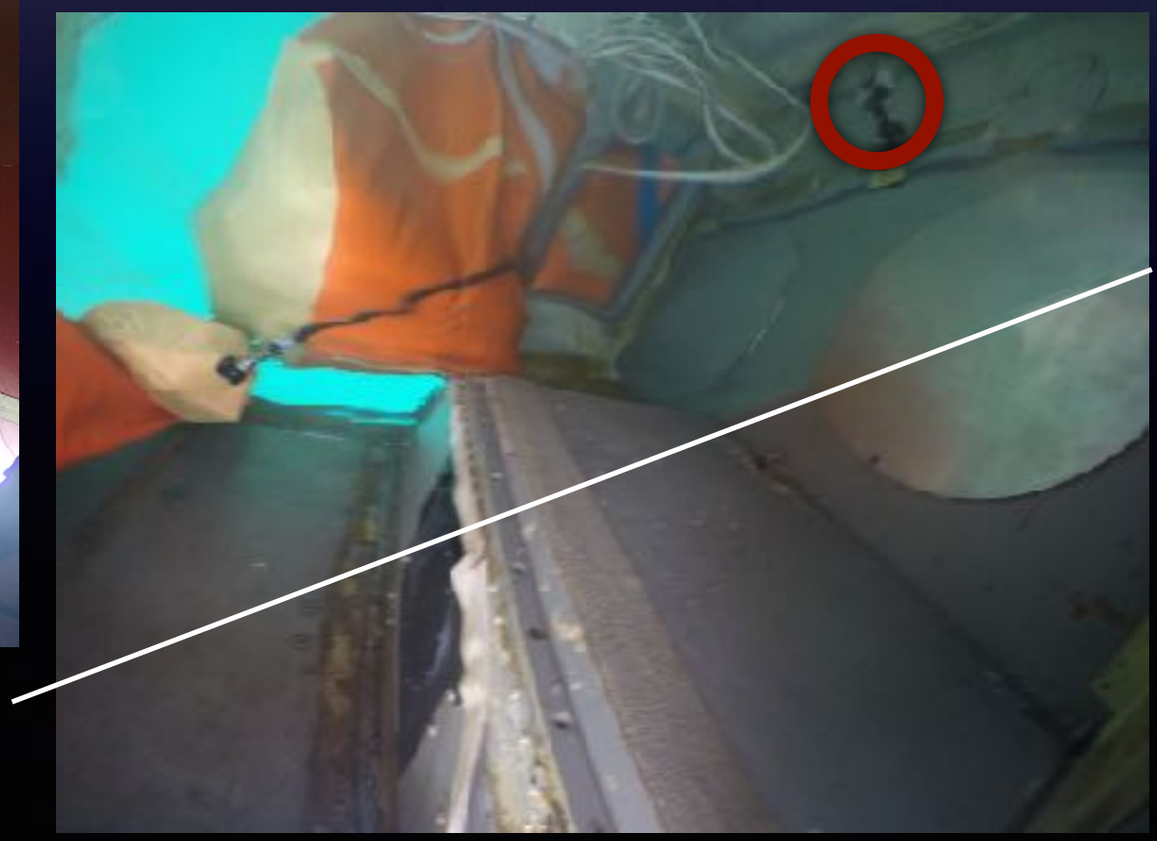
Advantage: Airframe stable, unlikely to re-capsize
Disadvantages: Cabin volume over 70% water, many occupants under water
Unknown flotation aspect (two outcomes for training)

# Cabin out of water (Symmetrical)

Advantage: Cabin volume over 90% air for increased survivability
Easy egress routes
Airframe stable, unlikely to re-capsize
Disadvantages: Inverted, likely in air release of seat belt





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