Directorate of Defence Aviation and Air Force Safety

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Scope

- DDAAFS Overview
- ADF Safety Trends and Initiatives
- MRH-90 Technical Investigation

DDAAFS Purpose

Enabling Defence aviation capability through effective and integrated safety programs.

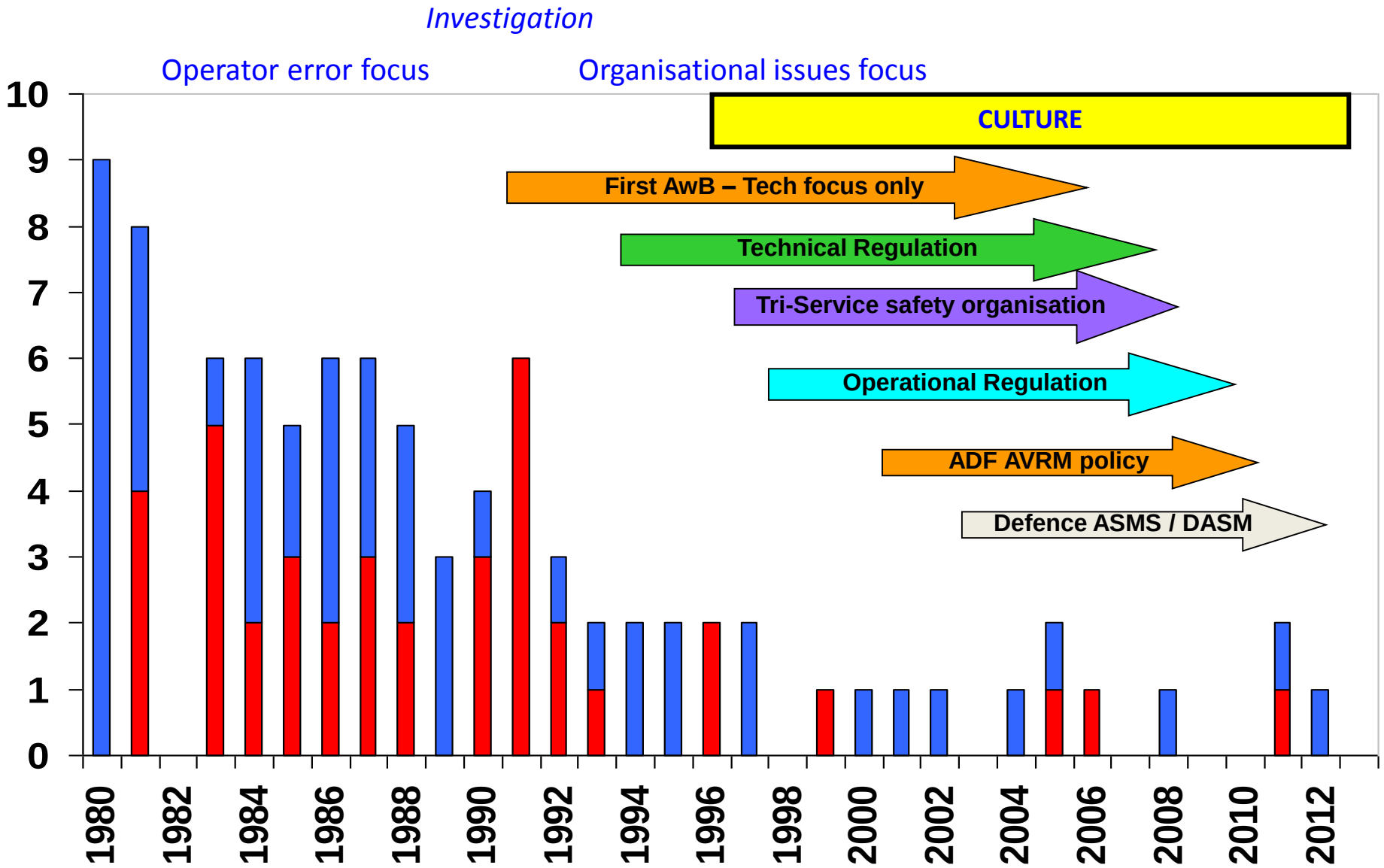
DDAAFS Mission

To provide independent specialist advice to those who influence Air Force and Aviation safety in the promotion and maintenance of safety standards that support capability.

To improve Air Force and aviation safety to enhance capability through positively influencing safety behaviour by fostering and promoting a generative safety culture.

Safety Trends

ADF Cat 5 Aviation Accidents (1980-2014)



Safety Management Systems

12 elements of the Defence Aviation Safety Management System

1	Genuine command commitment
2	A generative safety culture
3	A defined safety organisation structure
4	Communication
5	Documented safety policy
6	Training and education
7	Risk management
8	Hazard reporting and tracking
9	Investigation
10	Emergency response
11	Survey and audit
12	ASMS review

17 ELEMENTS AIR FORCE WORK HEALTH SAFETY MANAGEMENT SYSTEM RAAFSAFE

1	Leadership, Policy and Generative Safety Culture
2	Performance Management
3	Communication and Consultation
4	Governance and System Assurance
5	WHS Information
6	Education, Awareness and Skilling
7	Occupational Health
8	Hazard Identification and Risk Management
9	Systems of Work
10	Plant and Platforms
11	Contractor and Supplier Management
12	Emergency Preparedness
13	Emergency Response
14	First Aid
15	Incident Management and Investigation
16	Rehabilitation
17	Compensation

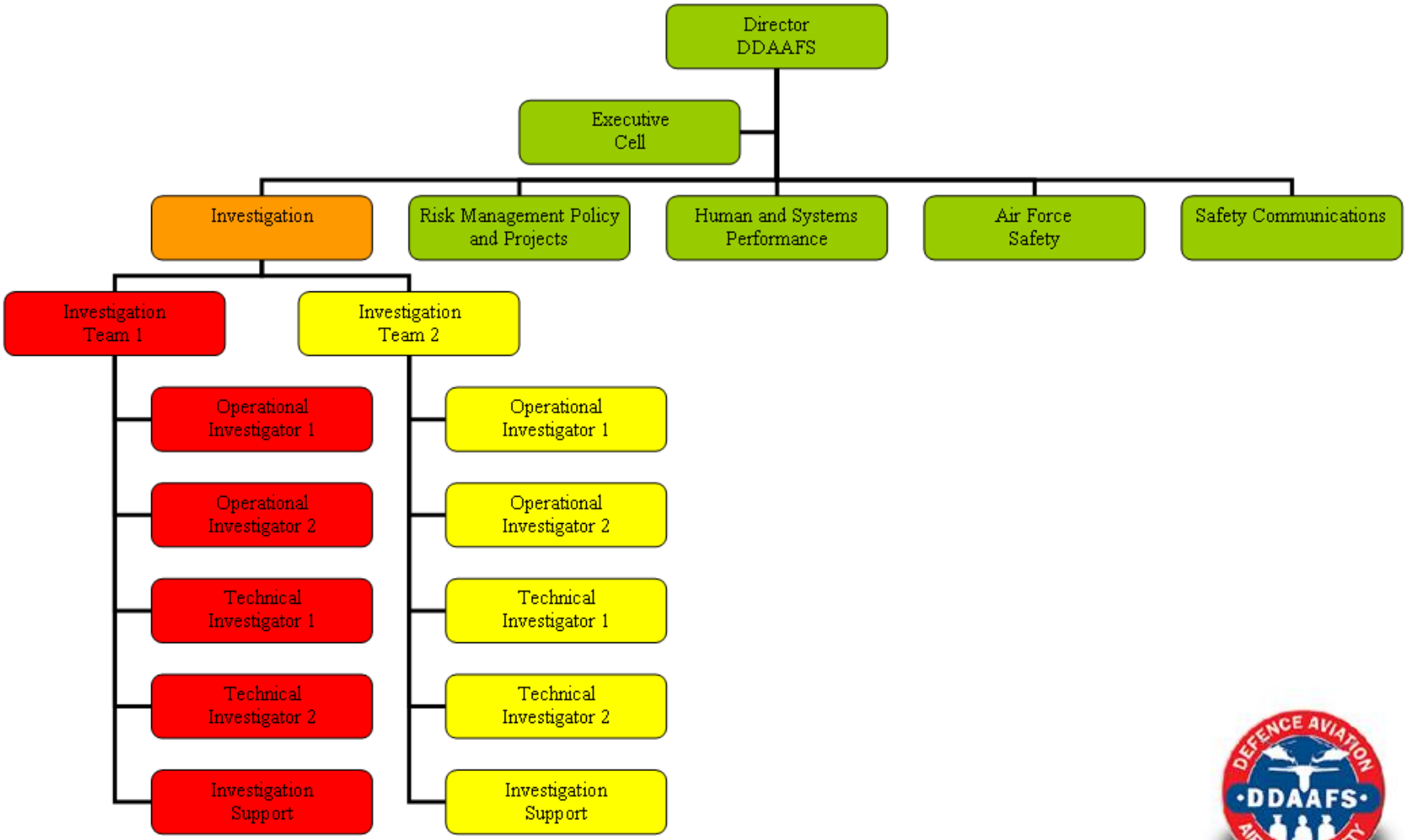
ADF Safety Initiatives

- Full integration of risk management and alignment with current legislation
  - Risk harmonisation (ASMS v WHS v Other SMS)
  - Alignment with national legislation
  - Risk based methodology for occurrence classification
- Improved reporting
  - Common reporting tool - Sentinel
- Safety information and intelligence system
- Serious incident investigation
- Restructure of DDAAFS

DDAAFS Restructure

- Minor restructure planned for 1 Jul 15
- Rationale
  - Create dedicated independent investigation capability
    - Allows continuous improvement of investigation capability
    - Ensure independence of investigation capability
    - Faster completion of safety investigations
  - More coherent policy advice to Defence Aviation Community
  - Strengthening of HF Capability
- Two investigation teams comprised of:
  - Operations
  - Technical
  - Support

New DDAAFS Structure



MRH-90 Main Rotor Head Incident 19 March 2014

WO Brendon Blank
DDAAFS—Rotary Wing (Technical)

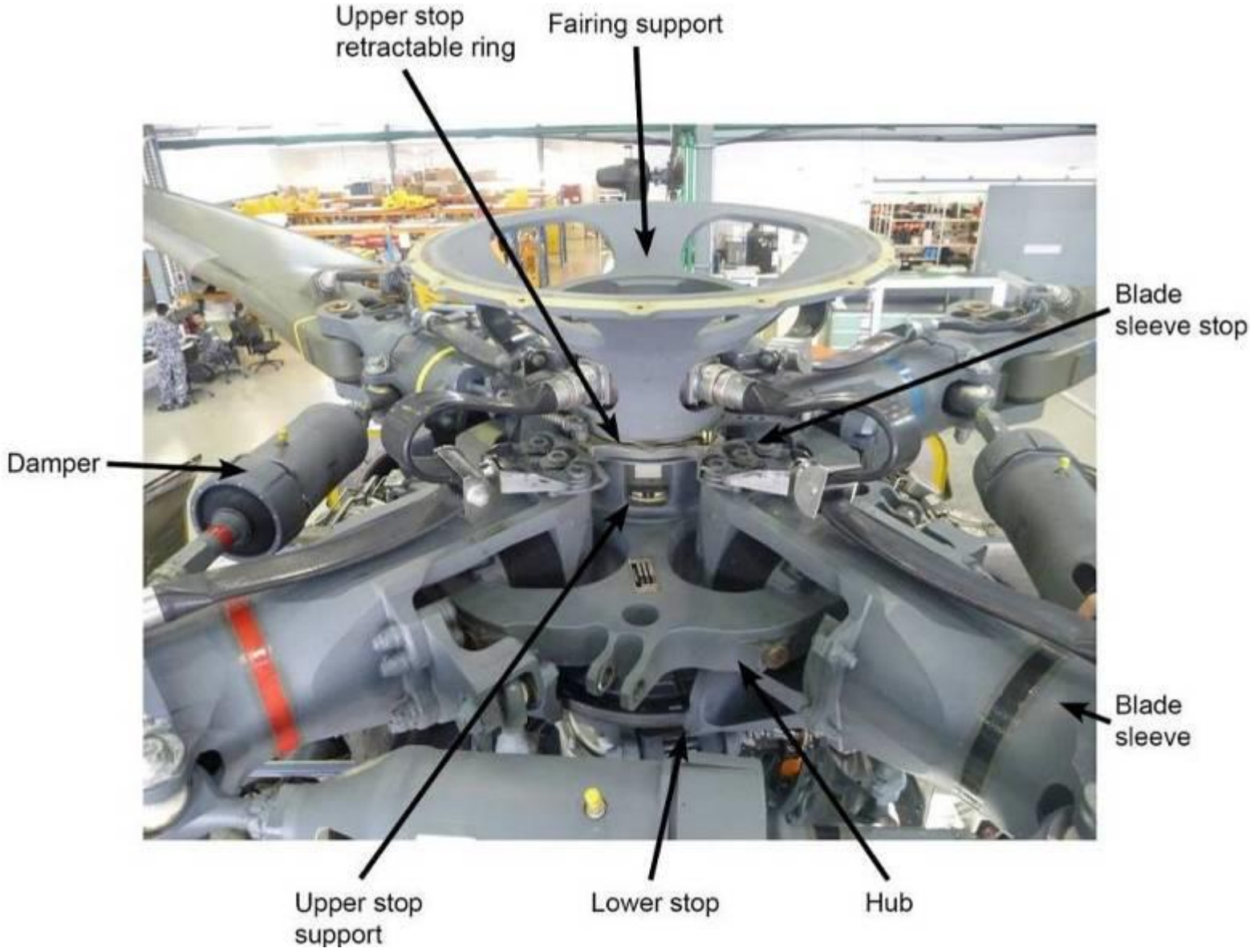
Scope

- Background information
- Sequence of events
- Damage to aircraft
- Contributing factors
- Organisational factors
- Summary and recommendations
- Safety Investigation
- Investigation challenges
- Lessons learned

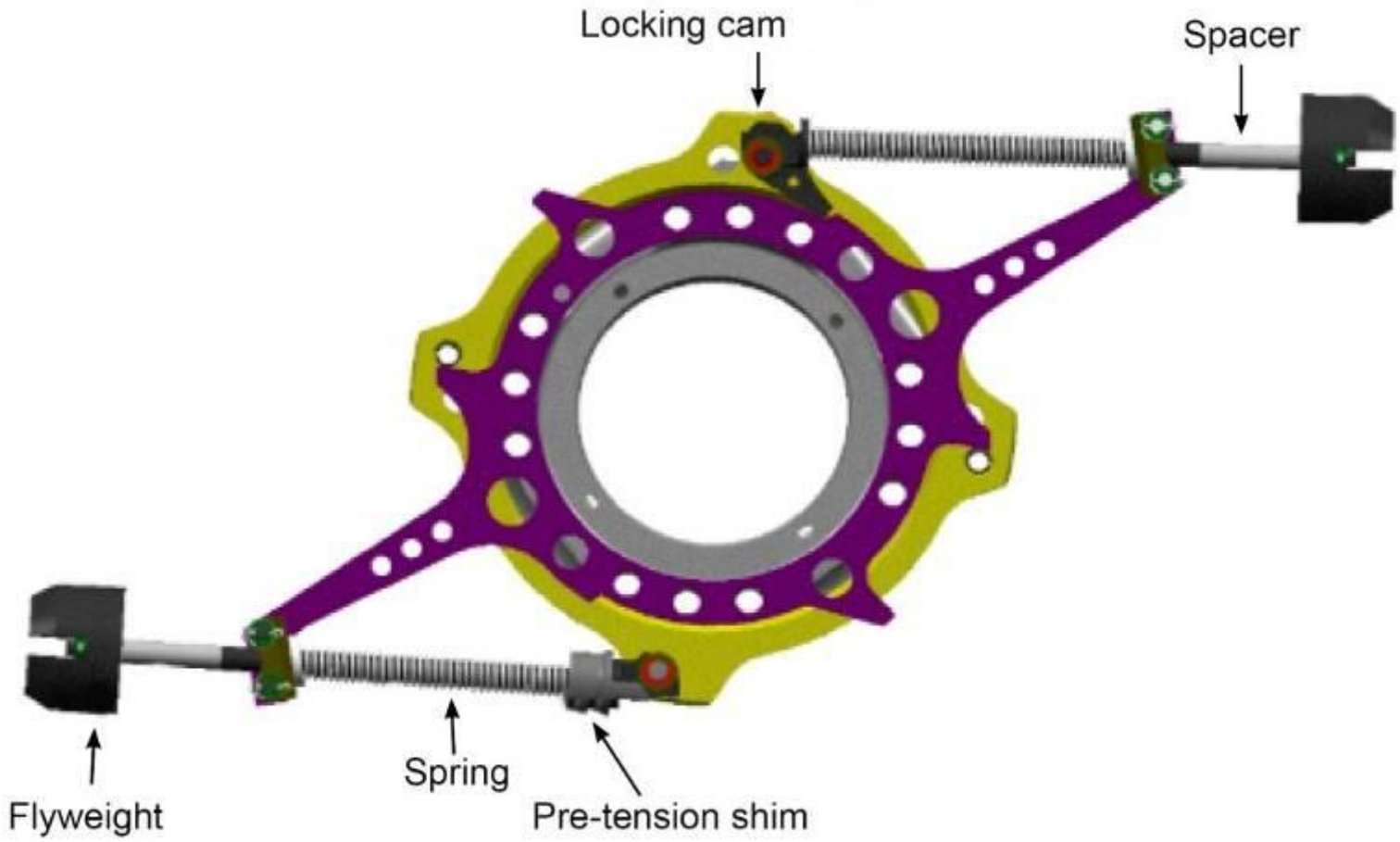
Background Information

- HMAS *Success* - Auxiliary Oiler Replenishment ship
  - Replenishment at Sea and Vertical Replenishment
- MRH-90 - Australian variant of the NH90 Tactical Transport Helicopter
  - 47 for Army and Navy, six planned for Navy use
  - Operated by 808 Squadron at HMAS *Albatross*

Background Information



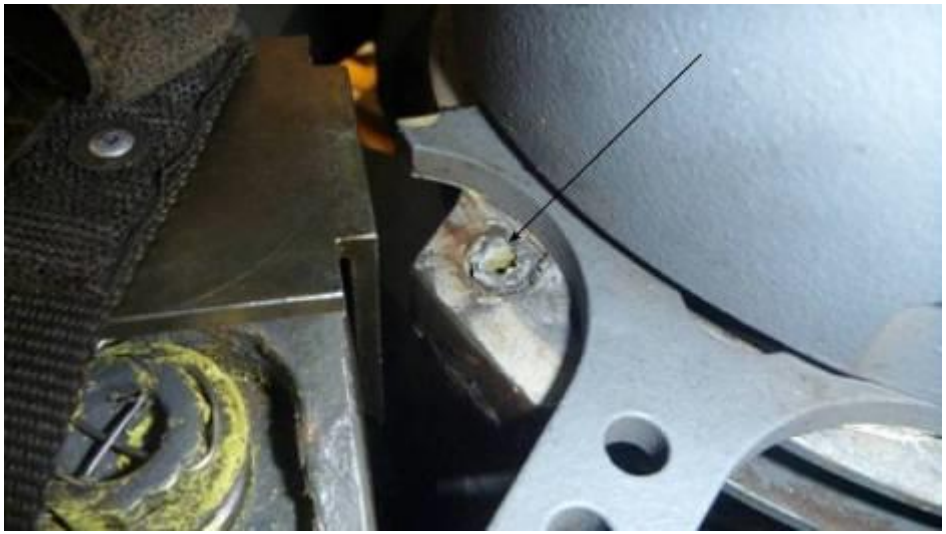
Background Information



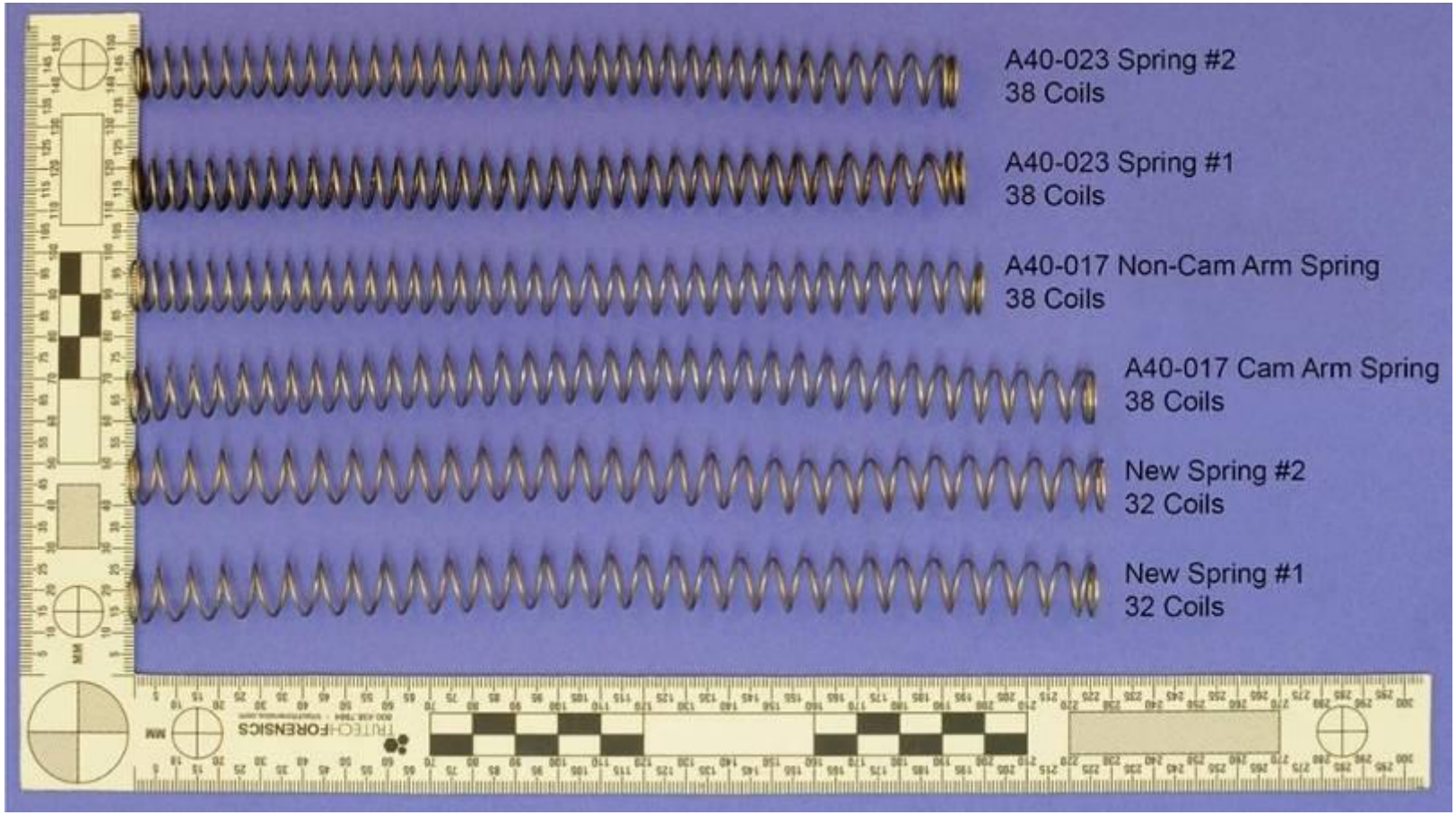
Sequence of Events

- HMAS *Success* Flight 1 – training and development
- Tasked to OP SOUTHERN INDIAN OCEAN (MH370)
- Main rotor blade sleeve replacement
- Engaged ground run then Maintenance Test Flight for vibration analysis
- Blade droop noticed during blade fold process
- Further investigation discovered damage
- Command informed and aircraft secured in ship's hangar

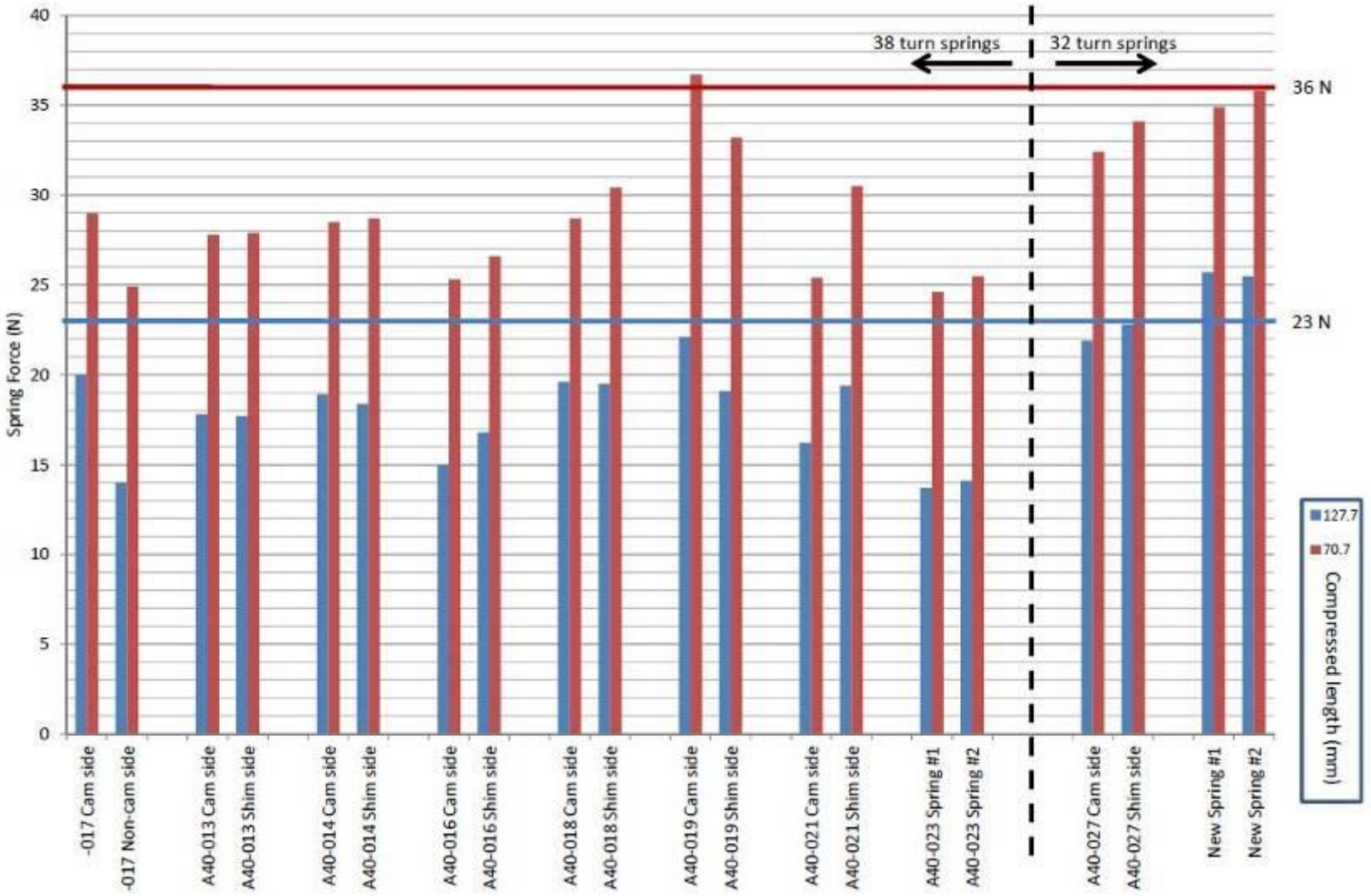
Damage to Aircraft



Contributing Factors



Contributing Factors



Organisational Factors

- Introduction of improved upper stop
- Modification process
  - Design development deficiencies
  - Ineffective amendment to publications
  - Tooling and support equipment not supplied
  - Defect reporting response not prioritised
- Defect reporting versus safety reporting
  - Service instruction detailed defect requirement
  - Materiel damage attributed to maintenance error
  - Did/could affect safety or airworthiness

Summary and Recommendations

- Summary:
  - Main rotor head damage to A40-017 was a consequence of the failure of the upper flapping stop assembly to rotate from the Ground position to the Flight position during start, due to the fitment of non-compliant parts
- Recommendations:
  - Quality control measures directed at prevention of occurrences of this kind
  - Variation to procedures is embedded within the text of the procedure
  - Procedural changes regarding consideration of, provision of, and management of ground support equipment and tooling have been formalised
  - Guidance regarding materiel related occurrences, ensuring compliance with Defence Aviation Safety Manual requirements

Safety Investigation

- Notification of occurrence
- Aviation Incident Investigation Team composition
  - Officer in Charge (RAAF Operations Investigator)
  - Two Operations Investigators – Army (IIC) and Navy
  - Two Technical Investigators – Army and Navy
  - One Human Factors specialist (Psychologist)
  - One Investigation Support
- Planning and preparation for evidence gathering
  - Location of aircraft and witnesses
  - Likely disembarkation of aircraft and witnesses

Investigation Challenges

- Access to incident location
- Environmental challenges at the site
- Limited time at the incident location
- Loss of physical evidence
- Coordination with stakeholders to progress the investigation
- Pressure to remove restrictions
- Competing interests of different stakeholders
- Conflicting work requirements of AIIT personnel

So what?

  - Required flexibility
  - Necessitated continuous focus

Lessons learned

- Deployment to remote locations
- One priority of initial contact is preservation of evidence
- Findings must be supported by evidence
- Avoid the tendency to jump to conclusions
- Stakeholders could try to influence investigation outcomes
- Expect competing work priorities
- Flexibility and remaining focused on the aim of the investigation are essential

2015 Incident

- 13 Apr 15 Incident
  - Uncontained blade sail led to damage to rotor head
  - Failure of upper stop assembly (same system)
  - Different failure mode
- AIIT formed and investigation underway
  - Large deck flat top vessels unique
  - Combination of environmental factors (not single factor)

Questions


DEFENCE AVIATION
DDAAFS
AIR FORCE SAFETY