



# The Present and the Future: DDH-17 Forward

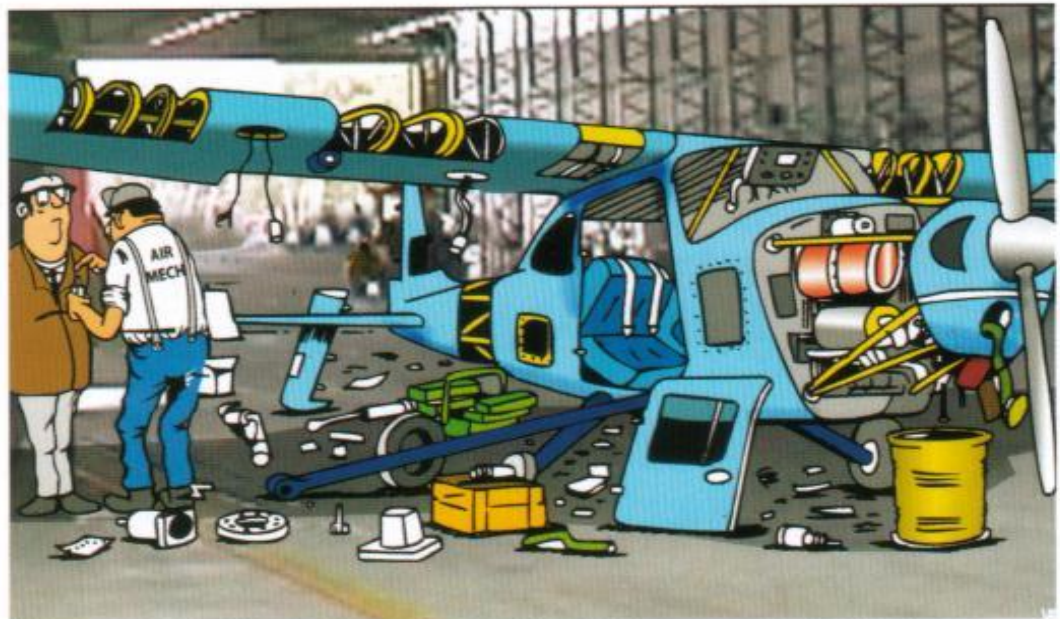
2017 Design Delegation Holders' Seminar

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Manager Airworthiness

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“The major difference between a thing that might go wrong and a thing that cannot possibly go wrong is that when a thing that cannot possibly go wrong goes wrong, it usually turns out to be impossible to get at and repair.”

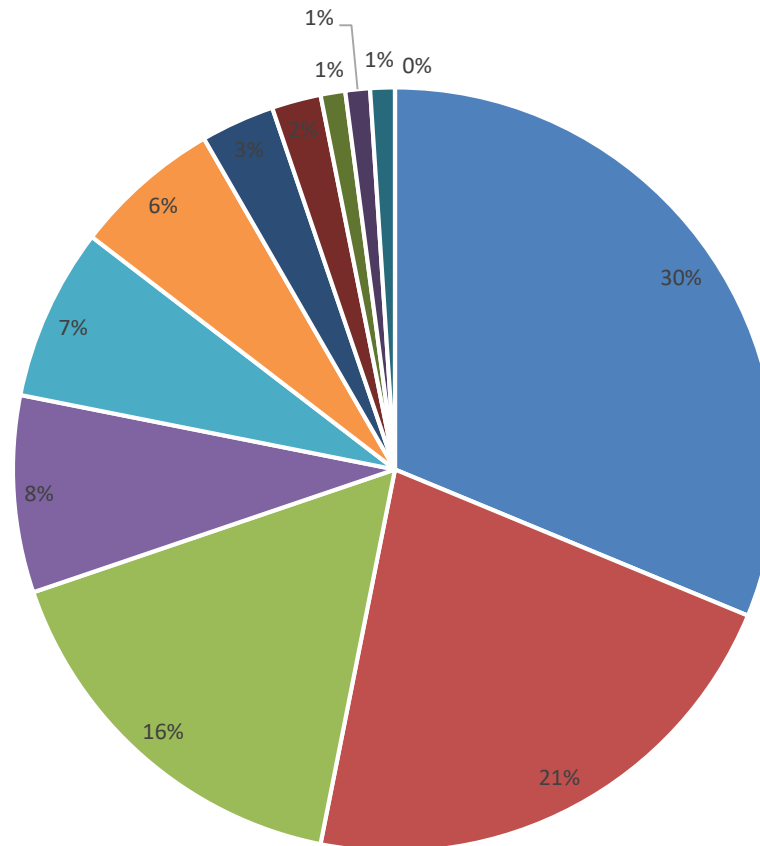
— Douglas Adams



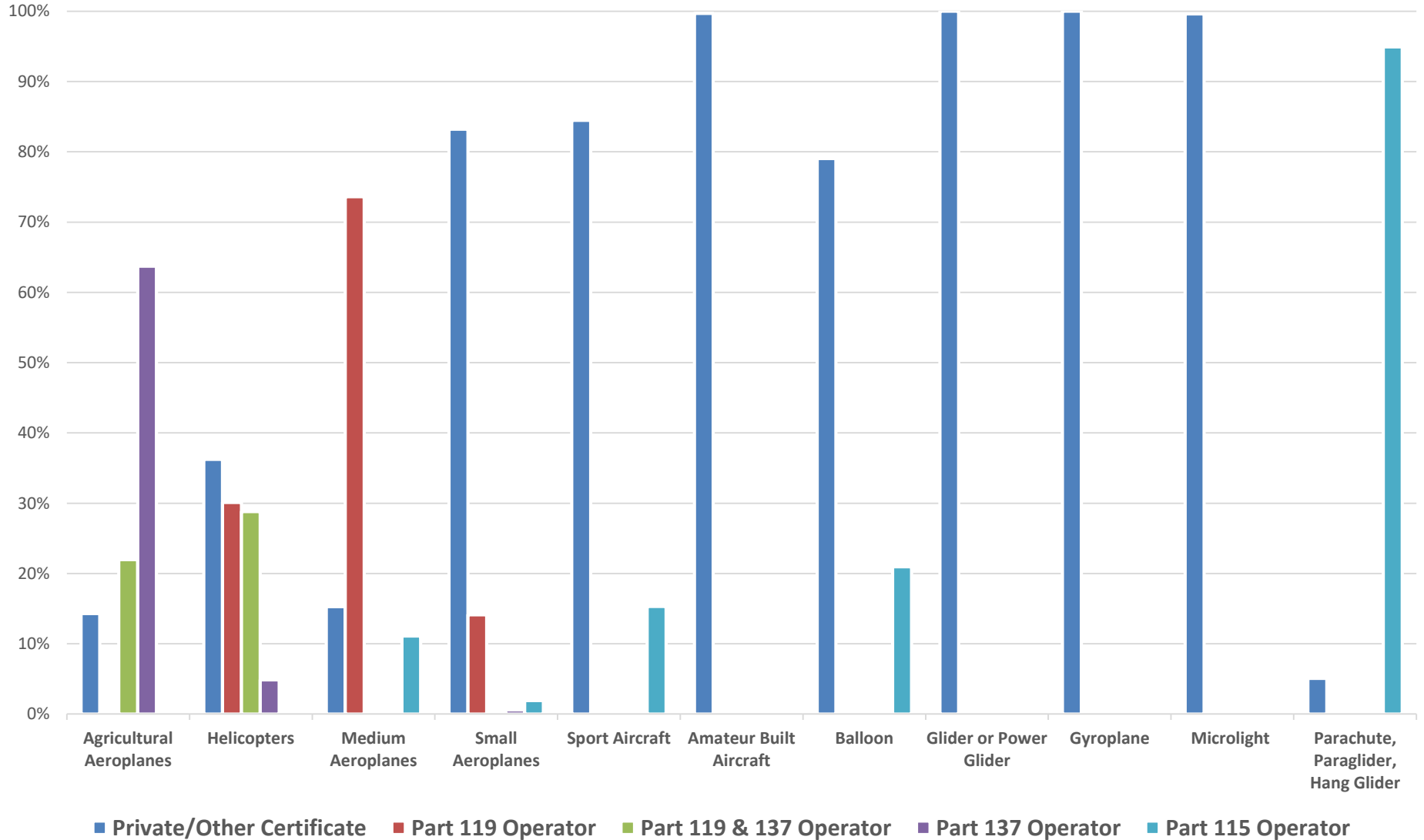
I just found the source of that silly noise – it is your cellphone!

- 146 Support Potential
- The Workload Ahead
- Airworthiness Unit Structure Realities
- Risk-Based, Intelligence Led
- Concepts for the Future
- DDHC-17: Lessons Learnt

## 4997 Aircraft for Potential Design Support



- Small Aeroplanes
- Microlight
- Helicopters
- Parachute, Paraglider, or Hang Glider
- Glider or Power Glider
- Amateur Built Aircraft
- Sport Aeroplane
- Agricultural Aeroplanes
- Medium Aeroplanes
- Gyroplane
- Balloon
- Other



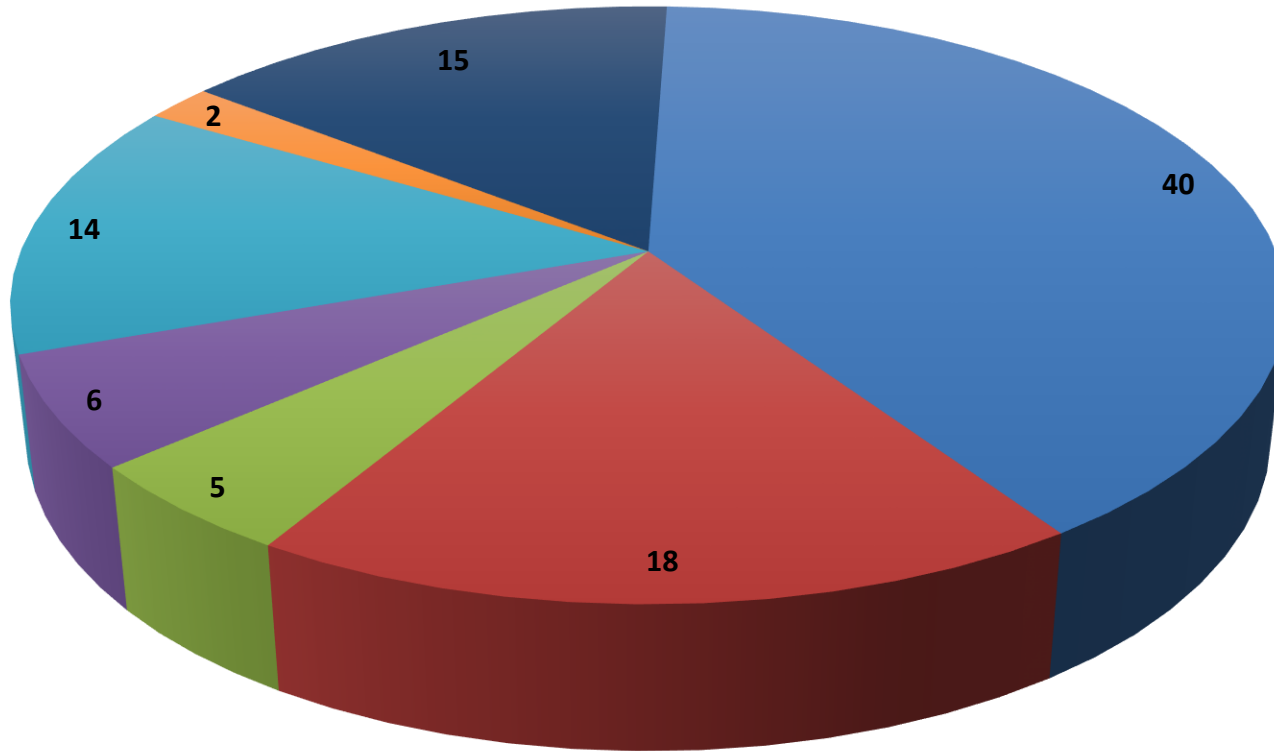
- Rebuilding our team:
  - Evaluating the restructure
  - Increase efficiencies / updated procedures
  - Completing recruitment
  - Delegation review
  - Training for delegations
  - Continuing Professional Development
- Business as usual:
  - Major Mods
  - STCs
  - Organisational Certification
  - Surveillance
  - Organisational Development
  - Internal Projects

- Design & Manufacturing:
  - Delegation review
  - Monitoring / assisting with Delegate CPD
  - Processing new DDH / 146 applications
  - Maintaining 148 oversight and support

- New challenges
  - Continuing to encourage and grow a diverse workforce:
    - Finding ways to encourage a broader cross section of society into aviation engineering starts with you
  - 3-4 TC applications pending, two novel require 21-17b approach
  - RPAS / UAV Certification – AW Unit actively engaged in Part 102 Safety Assessment, RPAS design/manufacturing approvals and Type Certificates
  - New Southern Skies – ADSB & RNP upgrades for GA
  - SMS – Phase 2 is here
  - STC on STC on STC..... Broader industry education / FAA AC
  - Ageing Aircraft
  - Ageing workforce



## ATA Group Workload Breakdown by Task



■ 1. Core safety role (core function)

■ 2. Authority initiatives

■ 3. Unit/group initiatives

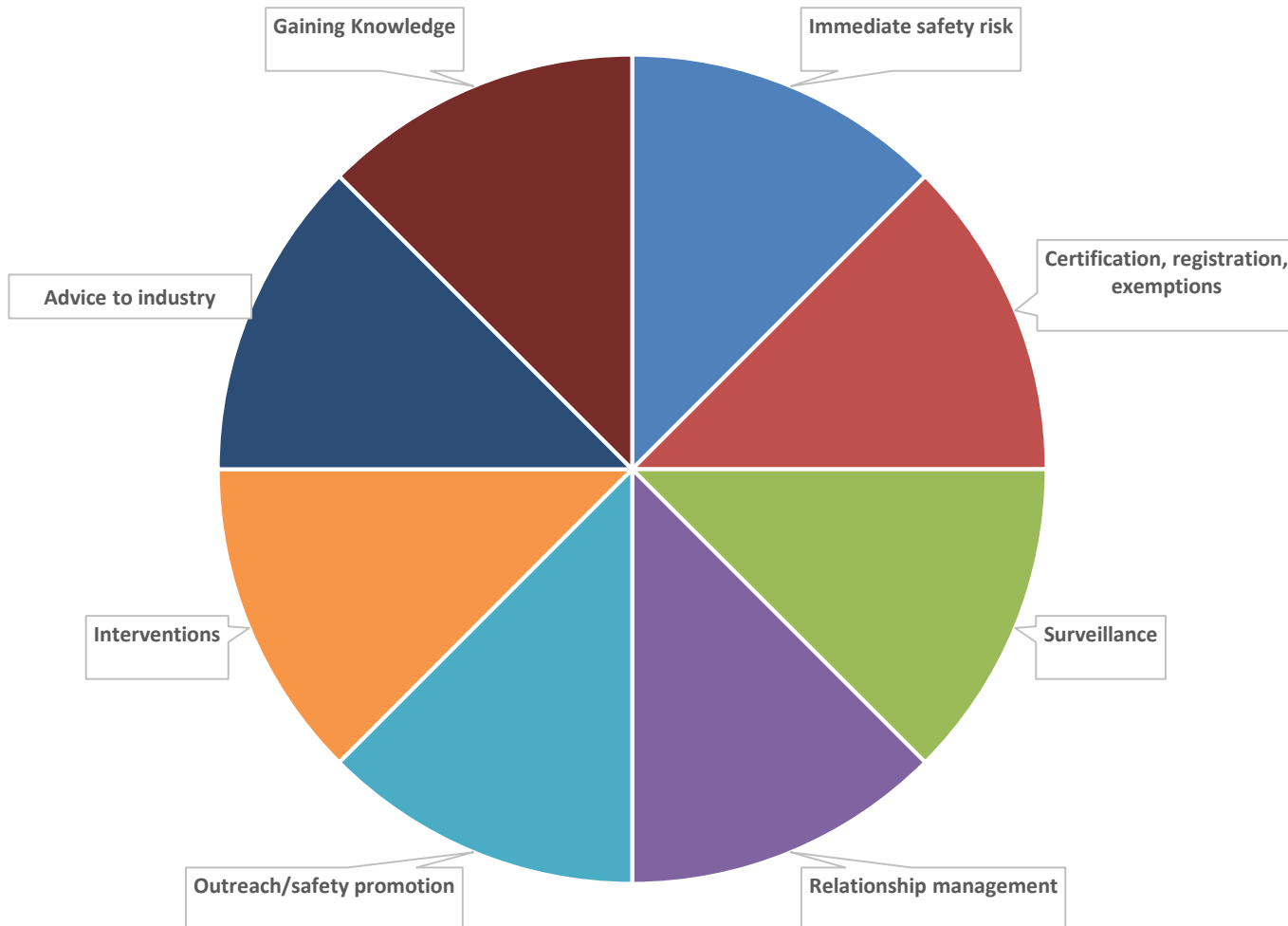
■ 4. Organisational professional development

■ 5. Support

■ 6. Quality improvement

■ 7. Leave/holidays

## AU Availability to Support to Engineering Change



- The Airworthiness Unit is structured to support regulatory oversight activities
  - 146 Organisations and Design Delegates are essential to the success of this structure
- Engineering change approvals represent less than 40% of our total funded workload
- The Airworthiness Unit is not structured to support engineering-change via 337
- The Airworthiness Unit is not structured to accept continuing airworthiness responsibility for engineering change

## **Regulatory Impact Statement**

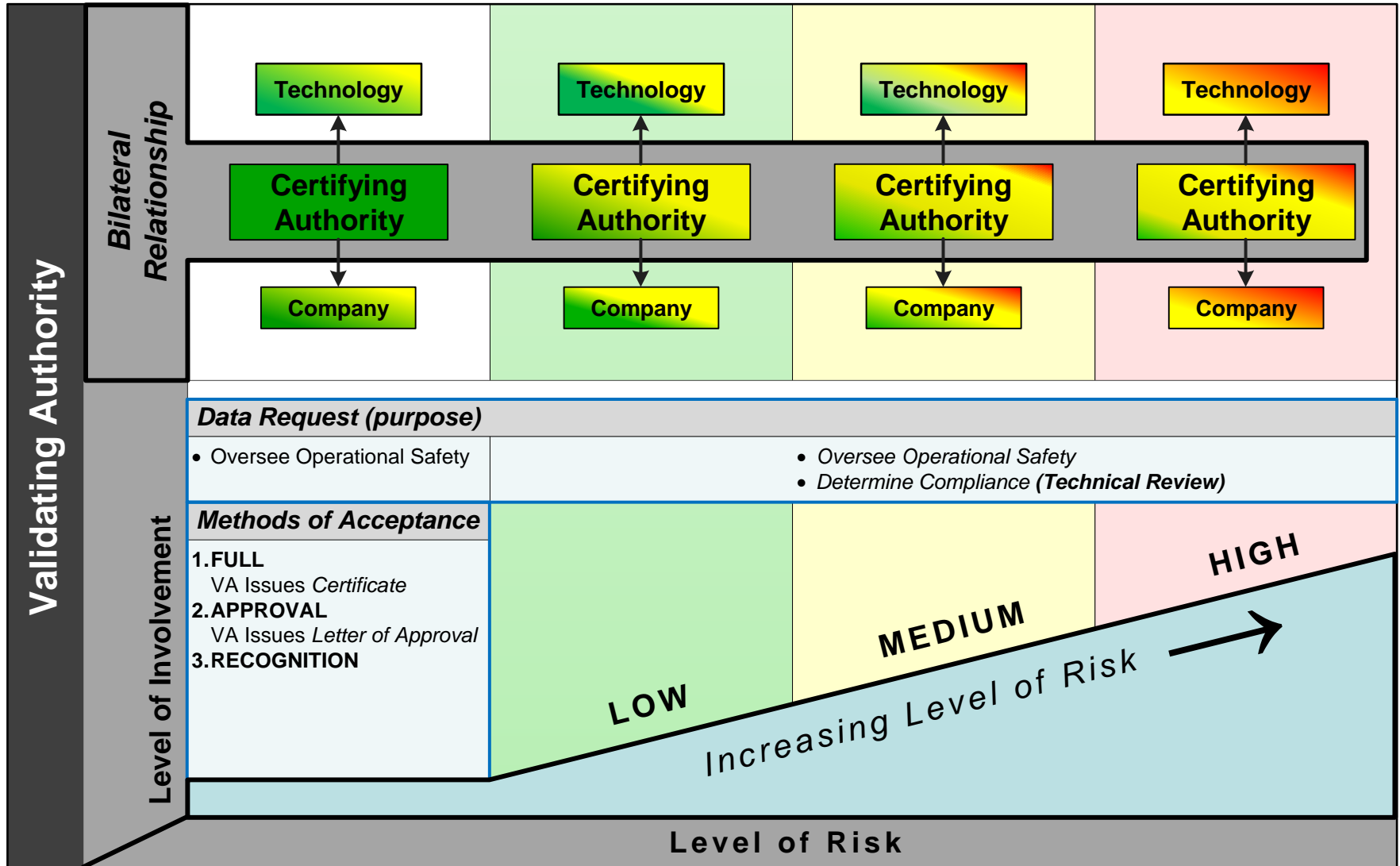
### **A Risk-Based Approach to Aviation Safety Regulation**

14. In some aviation sub-sectors with a large number of small domestic operators (such as agricultural aviation operations), the accident rate is not trending down as quickly as desired, is stalling or is showing signs of reversal. Research indicates that for agricultural operations risks are often not identified, resulting in safety failures.<sup>10</sup>

15. Global trends and experience indicate that safety performance is reaching a plateau in improvement and that a different, more proactive approach to identify and address safety risks is needed. ICAO has identified that further safety gains under the traditional rule and compliance system alone will be increasingly difficult to achieve.<sup>11</sup>

16. This suggests that New Zealand will struggle to achieve further safety gains under the current regulatory system which is based on rules which set minimum standards, quality management systems and CAA audits focussed on compliance with the minimum standards.

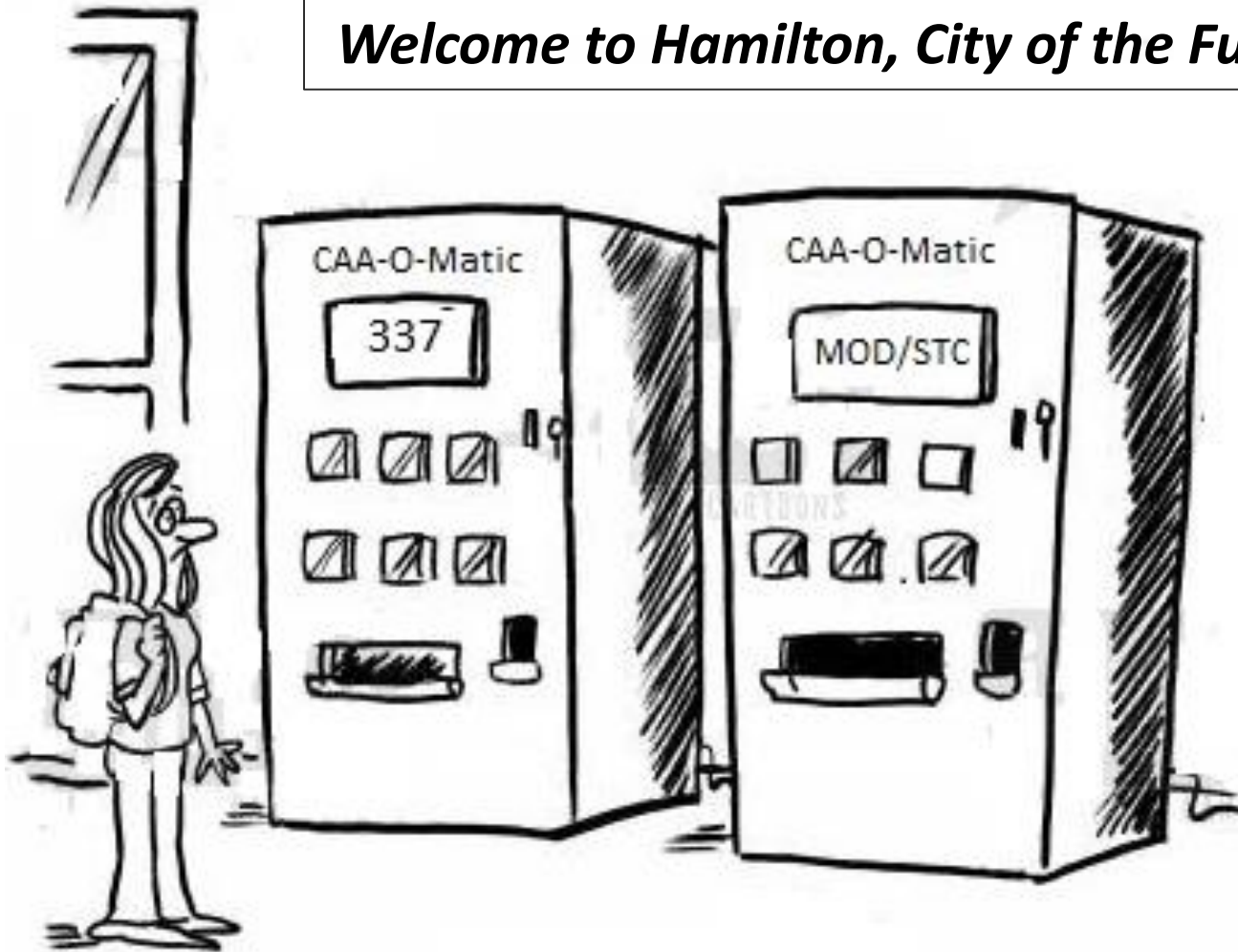
17. If accident rates are not reduced, the expected increase in aviation activity will see an increase in the number of air accidents. A more proactive approach to identify and address safety risks, through the implementation of risk management systems, is warranted.



- Improving safety through regulatory reform
- Financial freedom from Audit-by-Numbers
- Reinvest to grow:
  - Embrace diversity of thought, building better teams, faster smarter solutions
  - Invest in more time for Delegates / Participants
  - Assist with continuing professional development
- Find the big risks and deal with them:
  - The Sparrow approach
- Every interaction is surveillance:
  - The audit is only one tool and it should be used sparingly with focus and purpose
  - Risk-based approach

- Ideas to balance between safety, surveillance & cost:
  - Service Schedules – Transport Canada Model
  - More 337 pushed to 146 organisations
  - Task prioritisation:
    - Complete, compliant applications jump the queue
  - Refocus on our role
    - taking the engineer out of the regulator – oversight vs immersion
  - Design Delegates providing direct support to CAA
    - Compliance finding for TC programs – DDH working for CAA
  - More Secondments
    - Balancing Commercial with Regulatory Experience
    - Maintaining a rotational and healthy aviation engineer system
  - Transformational vs Transactional Engineering Support
- We are open for most suggestions!

***Welcome to Hamilton, City of the Future***





- **What did we hear?**
  - **Shaun Johnson** – NZ aircraft fleet size, realities of my team size, workload, planning
  - **Mark Hughes** – CAA works for the public, Safety focus, reduced involvement through early engagement, FPP
  - **John Parnell** – get Indemnity / liability insurance, consider the health and safety in the workplace Act, CAA Notices
  - **Jason Ashworth** – Major vs Minor, 337s, Roles of DDH vs IA
  - **David Moody & Dave Weston** – BK-117 Ext-Fuel & 1309
  - **Richard Andrews** – costs and complexities of running a small design team
  - **John Aplin** – we may not be accurate but we are fast, importance of early communication
  - **Ho-Joon Lim** - Safety continuum explained, focus on risk, NORSEE initiatives
  - **Panel Session** – Communication between 146, task planning, training, expertise / skills matrix
  - **Closed Door Session #1** – Communication, Planning, Scheduling, Delegation

- **What did we hear...**
  - **Chris DeLuis** – changes to CASA, 21J approach and focus on Int Agreements
  - **Clayton Hughes** – Installed performance, realities of Nav Approvals, education is the key – talk to the LAMEs and help us explain
  - **Andrea Wadsworth** – Seat Lady covered – considerations for modifications to dynamic seats, testing, standards to consider, benefits of dynamic seats, considering ‘family’ of seats, SRP, BFM
  - **David Gill** – The new Part 23, performance based rule, changes to help reduce certification costs for smaller aircraft, secret is up-front agreement with the regulator, standards and committees
  - **Pete Sutherland** – Design change process review, part 21/43 starting points, harmonise use of terms and processes is step 1, make schedule 1 public, 337 review, new AC for design change to incorporate guidance on Changed Product Rule,
    - TC process - planning + early communication = minimal regulatory involvement
  - **Closed Door** – Communication, better use of intelligence data, consistency, transparency, communication
  - **Jack Stanton** – Life as an ex-Engineer, overview of CAA intelligence role, how data is used now, what CAA is doing to make best use of safety / usage data, example of how it all works, overview of what is happening in the sector
  - **Ben Vos** – Damage tolerance – is not avionics, overview of fatigue tolerance considerations for metallic and composite structures, load path considerations, key differences between fixed-wing and rotary
  - **Shaun Johnson** – we are listening but we have a limited resource and our primary task is public

- What can we do...
  - Spend more time physically in your region
  - Use CAA intelligence to identify and align areas of need with capacity
  - Review 43-9 to clarify DDH & IA roles, potential 337 Form update
  - Consider introduction of EASA-style guidelines for classification of Avionics installation installations
  - Find ways to advertise our workload
  - Deliver more training
  - Review the task prioritisation process and be more transparent
    - Late, incomplete, poorly communicated work will go to the bottom of the pile
  - Consider apprentices or exchange programs
  - Improve inter-governmental communication
    - Engage with Callaghan
  - Maintain international agreements and communication
  - Part 23 roadshow – FAA guest speaker

- What can you do...
  - Plan in advance and communicate with us as early as possible
  - Use [airworthiness@caa.govt.nz](mailto:airworthiness@caa.govt.nz) for all 'first contact' on routine applications
    - ~~[airlines@caa.govt.nz](mailto:airlines@caa.govt.nz)~~ is no longer in use
  - Continue to review and update our processes, forms & ACs
  - Maintain adequate levels of continuing professional development
  - Communicate with each other – National expertise matrix?
  - Actively engage with LAMEs – we are in this canoe together

## He Waka Eke Noa

*Although we are all sitting in the Aviation Safety canoe, we will get to our destination faster if we all paddle together and in the same direction*



***Any Questions?***