

MAINTENANCE REGULATIONS

42 66 145 147

CASR PART 145

approved maintenance organisations

145

# Session overview

- Regulatory structure
- CASR Parts and policies
- Implementation considerations
- Expositions

# Current and Proposed Civil Aviation Safety Regulations

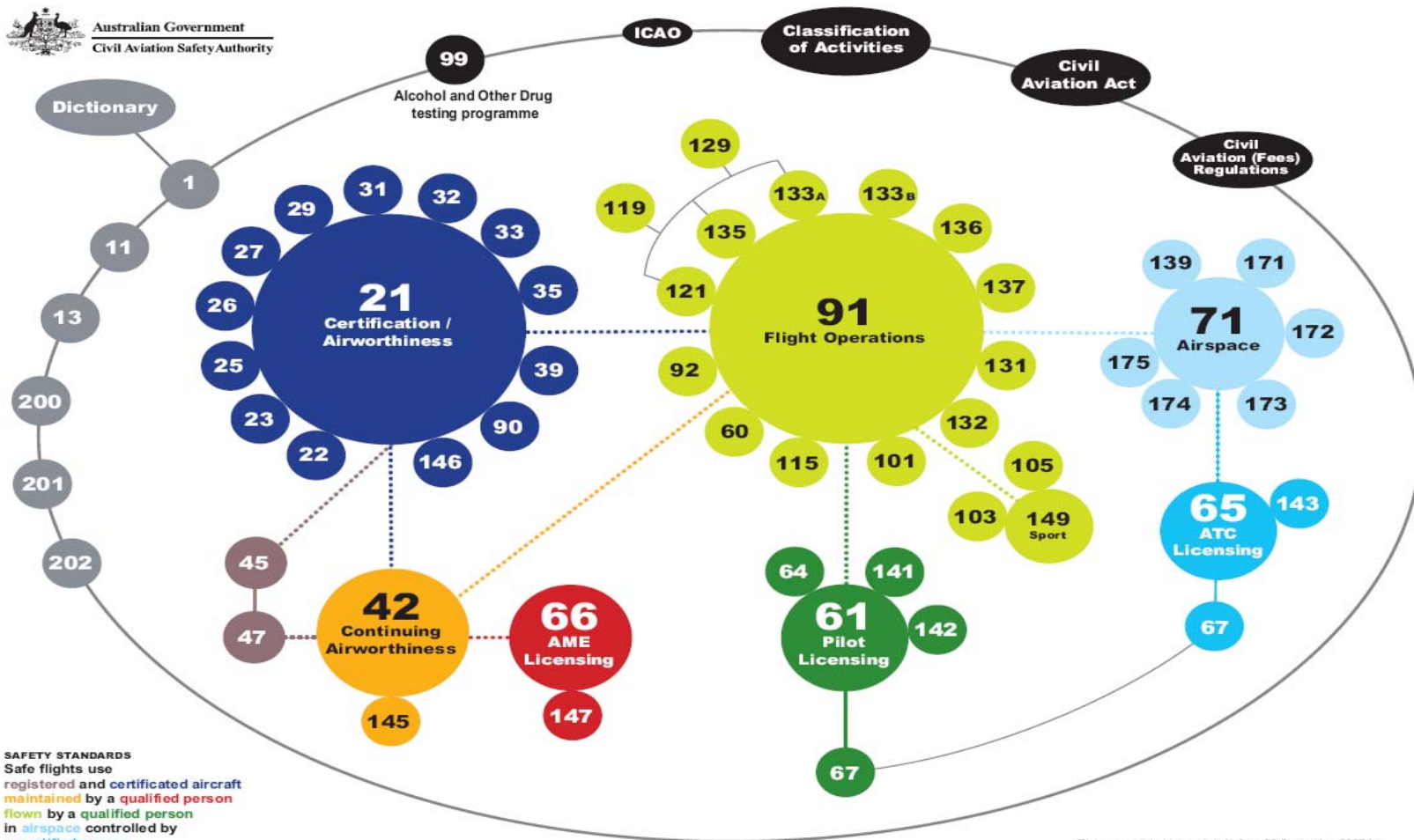


Diagram updated to version 11.0 on 26 September 2007 by CASA's Regulatory Development Management Branch

Online Part number decoder: [www.casa.gov.au/newrules/parts/](http://www.casa.gov.au/newrules/parts/)

# Existing and New Regulations Comparison

## Continuing Airworthiness – Revised Standards

CASA Existing	CASR Parts 42,66,145 and 147
Civil Aviation Act 1988	Civil Aviation Act 1988
Civil Aviation Regulations 1988 CASRs 1998	CASRs 1998, including new Parts 42, 66, 145 and 147
Civil Aviation Orders	Manuals of Standards for CASR Parts 42,66,145 and 147 (Note 1)
Civil Aviation Advisory Publications	Acceptable Means of Compliance (AMC) (Note 1)
Airworthiness Advisory Circulars and Airworthiness Bulletins	Guidance Material (GM) (Note 1)
Ongoing surveillance using the Act, Regulations and Organisation Manuals	Ongoing oversight using exposition

Note 1: The Manual of Standards, AMC and GM are designed to have a unified numbering scheme. For example the MOS numbering, AMC and GM would all use the same numbering protocols.

# Acceptable Means of Compliance (AMC) and Guidance Material (GM)

## Acceptable Means of Compliance (AMC)

- Relates to specific regulatory provision. Uses same numbering
- Cannot impose a regulatory requirement
- Provides means of satisfying related regulation
- Organisations can prepare alternative means of meeting regulation. If CASA approves (after removal of IP or commercially sensitive information) could be published as alternative

## Guidance Material (GM)

- Relates to specific regulatory provision
- Uses same numbering
- Explains policy intent of the regulation

# Safety outcome-based legislation

- Outcome-based legislation allows an acceptable safety outcome to be reached via multiple pathways.
- This involves the legislation expressing the desired outcome supported by Acceptable Means of Compliance (AMC) and Guidance Material (GM).
- Organisations provide an exposition to CASA detailing how they will conduct their operations to maintain the required level of safety.
- Once the exposition is approved, CASA conducts surveillance to ensure the organisation continues to operate according to the approved exposition.

# Can I propose an alternative means of compliance for any regulation?

Generally, the legislation prescribes the required safety outcome, but not the methods or means to comply with the outcome.

However, in some cases, for example the performance rules for managing airworthiness; carrying out maintenance; issuing a CRS or the qualifications required to gain a Part 66 licence; there is only one acceptable means of compliance.

In these cases, the legislation contains the outcome which must be met, and there is only one acceptable means of compliance.

# Maintenance Regulations – Key Changes

- Based on organisational approvals - less reliance on individual approvals and delegations.
- Approval contingent on industry demonstrating they can manage risks associated with requested privileges - focus is on the organisation's systems.
- Expositions - basis for demonstrating compliance at entry control and ongoing oversight.





# CASR Parts and Policies



# Part 42 – Continuing Airworthiness Key Changes

- Clearly separates responsibilities for continuing airworthiness management (CAMO) and carrying out maintenance (Part 145 AMO)
- AOC holders must be registered operator of aircraft listed on AOC
- AOC holders must be approved as CAMO (Subpart G), including management structures and employee qualification standards
- Introduces periodic airworthiness review - containing both records check and physical survey for each aircraft
- Aircraft maintenance providers for RPT operators must be approved as CASR Part 145 organisations – domestic and international

# Part 42 requirements for RPT Operations

Establishes that:

- continuing airworthiness of aircraft in regular public transport (RPT) operations as described under CAR 206(1)(c) must be managed by a continuing airworthiness management organisation (CAMO)
- maintenance of all aircraft used for RPT must be carried out by a Part 145 approved maintenance organisation (AMO).



# Part 42 Key Concepts and Terms

- Instructions for continuing airworthiness
- Maintenance data
- Certificate of release to service (CRS)
- Maintenance certification
- Maintenance of aircraft and/or aeronautical products
- Airworthiness review

# Part 42 Regulation Structure

Key considerations involved in shaping the regulation include:

- Identifying who is responsible for a particular outcome
- Balancing the responsibility of organisations for their employees and individuals acting independently
- Federal criminal law policy
- Consistency with existing legislation and terminology

# Part 42 Regulation Structure

Regulation structured so subpart's content is aligned with party responsible for outcome

Eg: Subpart B - requirements for registered operators

## 42.025 Purpose of subpart

This subpart sets out:

- a) continuing airworthiness requirement applying to the registered operator of the aircraft; and
- b) record-keeping requirements for the registered operator of an aircraft (authorisations under regulation 42.630).



# Part 42 Regulation Structure

- Subpart C – Continuing airworthiness
- Subpart D – Maintenance
- Subpart E – Aeronautical products
- Subpart F – Small maintenance organisations (N/A for RPT)
- Subpart G – Continuing airworthiness management organisations (CAMO)
- Subpart H – Maintenance certification and certificate of release to service



# Part 42 Regulation Structure

- Subpart I – Airworthiness reviews and airworthiness review certificates
- Subparts J,K and L – Administration matters for maintenance and reliability programs
- Subpart M – Requirements for pilots
- Subpart N – Record keeping requirements
- Subpart O – Copying and disclosing CVR information

# Part 42 MOS

CASR Part 42 MOS contains requirements for continuing airworthiness, including:

- CAMO requirements
  - Exposition
  - Facilities and equipment
  - Management and employees including qualifications
  - ICAs
  - Maintenance data
  - Quality and internal review
  - Records
- Maintenance programs
- Reliability programs

# Part 42 MOS

- Aviation industry standards
- Large and small aircraft determinations
- Foreign authorised release certificates
- Pilot maintenance for RPT operations

# Part 145 – Maintenance Organisations

- Introduces SMS in line with ICAO SARP amendments
- Introduces human factors training requirements removing an ICAO difference
- Requires consideration of human performance limitations - integral to organisation's processes and procedures; e.g. production planning to schedule manpower and workload
- Requires formal authorisation of staff carrying out and certifying for maintenance on organisation's behalf

# Part 145 – Approved Maintenance Organisations

## Legislation structural considerations

- Requirement to avoid regulatory duplication – e.g. those requirements applicable to a Part 145 organisation covered in Part 42 (Subparts D, E and H)
- Introduction of SMS in the ICAO SARPS
- Introduction of human factors integral to organisation's processes and procedures

# Part 145

Regulation covers:

- Head of power for MOS content - organisational standards
- Administrative provisions relating to assessment, approval, variation, suspension of approvals etc. (Consistent with CASR Parts 11 and 13)
- Offence provisions – e.g. failure to operate in accordance with the organisation's approved exposition

The regulation and MOS model is very similar in Parts 42.G and 147

# Part 145 MOS

## Requirements for a Part 145 organisation, including:

- scope
- facilities
- managers
- certifying employees
- certification authorisations
- training
- equipment, tools and materials
- aeronautical products
- Instructions for continuing airworthiness (ICAs) including maintenance data
- production planning
- certification of maintenance
- records
- defect reporting
- quality assurance, including a quality management system
- safety management system
- exposition content

# Part 145 MOS

## Appendices

- Organisational approval class and rating system
- Category 'A' licence tasks
- Conditions for the use of employees not qualified to Part 66 in accordance with paragraph 145.A.30 (k)





# 145 Requirements

Expositions for 145 approvals include:

- Accountable, responsible, quality and safety managers
- Organisation chart
- Certifying employees
- Facilities
- Quality and safety management systems
- Procedures for changing the exposition
- Other procedures required by the regulations

# Specialist Maintenance

An AMO may authorise employees under section 145.A.35 for specialist maintenance tasks or processes. These include:

- non-destructive testing
- welding
- boroscope inspections
- composite repairs
- in-flight entertainment equipment that requires specialist software management
- other maintenance approved by CASA as specialist maintenance.

# Specialist maintenance

- Specialist maintainers can provide certifications for specialist maintenance and thus provide an assurance that such maintenance was carried out to the standards required.
- Specialist maintenance personnel are trained and qualified in the specialist field and may not have the holistic understanding of the interrelationship of an aircraft's systems, or airworthiness implications, that a maintenance certification licence holder must have.
- Following specialist maintenance a certificate of release to service for the aircraft, is required such a certification must be made by an appropriate Part 66 licence holder.

# Part 66 - Maintenance Personnel Licensing

- Introduces category A, B1, B2 and C licences
- B1 and B2 - primary licence categories
  - by redistribution cover majority of existing airframe, engine, electrical, instrument and radio combinations
- Nationally endorsed AQTF competency based training underpins licence categories
- Implementation is about transitioning existing CAR31 privileges to Part 66 privileges without loss

# Important Terminology/Concepts

Category A = Issues certificates of release to service and maintenance certifications for specific maintenance tasks endorsed on the authorisation after minor scheduled line maintenance and defect rectification.

Can only be used for work performed by the individual (no supervision provisions) in a Part 145 organisation.

# Important Terminology / Concepts

Category B1= Issues certificates of release to service and maintenance certification for airframe structure, powerplant, mechanical and electrical system maintenance. Can also replace and perform simple tests of avionic line replaceable units. B1 automatically includes all A category privileges

Category B2 = Issues certificates of release to service and maintenance certifications for all avionic and electrical system maintenance

# Important Terminology/Concepts

Category C= Issues certificates of release to service for large aircraft following base maintenance in a Part 145 organisation.

# Part 66 Policy Overview

There are four sub-categories applicable to the A and B1 licences:

- A1 and B1.1 = aeroplanes turbine
- A2 and B1.2 = aeroplanes piston
- A3 and B1.3 = helicopters turbine
- A4 and B1.4 = helicopter piston



# Category 'A' licence holders

Attend a [CASR Part 147 Organisation](#) (MTO) and be assessed as competent for the full licence



Provide a successful [assessment](#) from the 147 to CASA and demonstrate eligibility for issue of licence. CASA will issue.

Assessment can include training and/or recognition of prior learning



Be [authorised](#) by the maintenance organisation for the tasks on the types which you have been trained.



Undertake specific type and task training. This may be done by a 147 or 145 maintenance organisation.

# Part 147 Training Organisations

- Part 147 establishes the requirements to be met by organisations seeking approval to conduct training & assessment under Part 66.
- Delivers competency-based training for the issue of Part 66 licence categories.
- Type rating training aligned to B1 and B2 licence categories.

# Implementation Considerations

# Part 42 and 145 Application

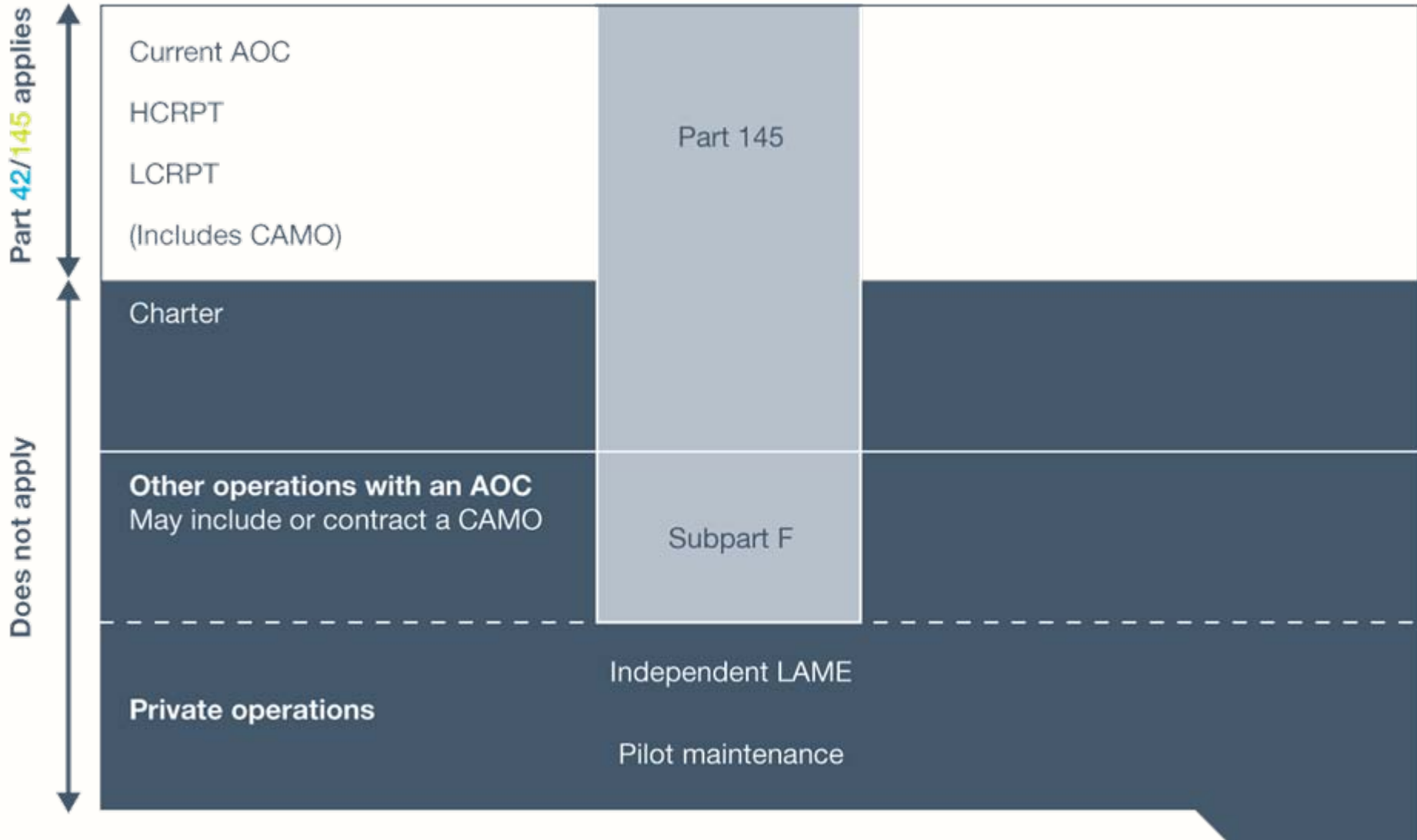
Driven by alignment of continuing airworthiness regulations with the existing operational regulations and terminology  
- CAR1988 [CAR206(1)(c) RPT].

## **27 June 2011 to 26 June 2013**

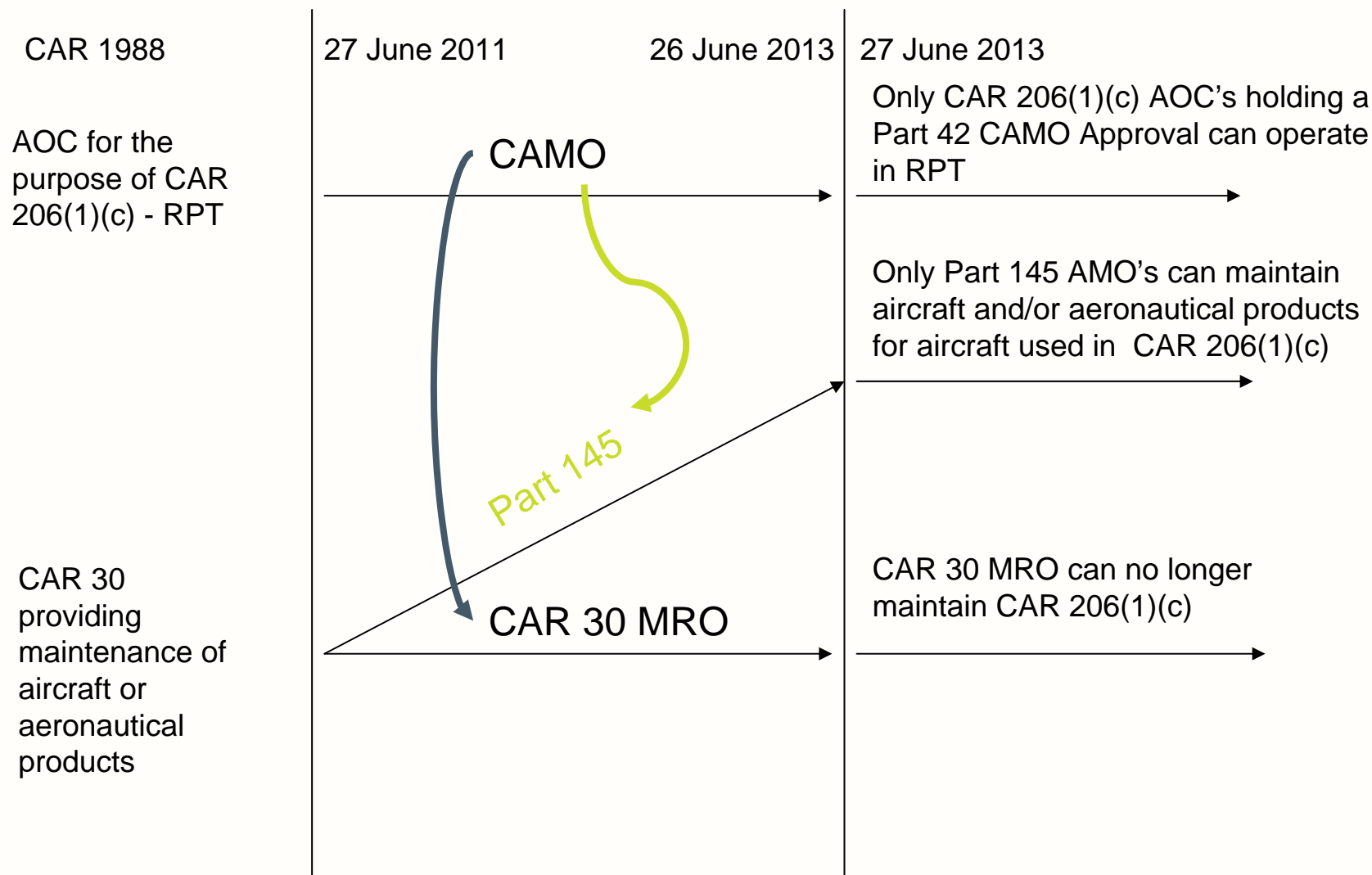
- RPT AOC operators to 42.G (CAMO) approvals
- Associated maintenance providers to Part 145

Does not apply to charter, aerial work, private operations or maintainers of these operations.

# Part 42 and 145 Application



# Part 42 and 145 Application



# Expositions

# Why have an Exposition?

The regulations prescribe the desired safety outcome and not the methods or means of compliance with the outcome.

The organisations expositions describe the processes, procedures and systems they intend to use to manage their operational risks and also meet the required legislative outcomes.



# Where does a sample exposition live in the regulatory structure?

A sample exposition template is a guidance document for organisations wanting to develop their own exposition.

# Further information

CASA website – maintenance regulations

[www.casa.gov.au/maintenanceregs/](http://www.casa.gov.au/maintenanceregs/)

- Regulations
- Manuals of standards
- eLearning
- Implementation timelines
- Contacts

