

DDH Scope Statements

2025 DDH Seminar

CT, 06 Nov 2025

Background

- Instrument of delegation issued iaw CA Act 2023, Section 462
- AC146-1 notes that CAA's initial assessment "interview will determine the scope and any limitations or restrictions that may be placed on a delegation"
- Purpose of scope statements is to reduce the risk of aircraft accidents caused by unsafe design changes occurring due to insufficient DDH competency/experience.

[Civil Aviation Act 2023 No 10 \(as at 28 December 2024\), Public Act Contents – New Zealand Legislation](#)

Background

- 2010 – limitation regarding major modifications
- 2016 – CAA letter to DDHs regarding exclusion of certain design changes
 - Software, composite primary structures, dynamic components, powerplants, avionics/electrical systems where DDH qualifications and experience is primarily mechanical/structural
- 2021 – DDH Seminar, CAA “looking to adopt an inclusion-based framework” for DDH scope statements.
- 2023 – CAA letter to DDHs to clarify the definition of “dynamic components” and “aeroelastic considerations”.
- Since 2023 - CAA has been migrating delegations (to inclusion-based framework) at 5-year renewals.

Background

- Benefits of inclusion-based framework:
 - align with other NAAs
 - enhance opportunities to extend bilateral agreements
 - reduce issues for foreign validation of NZ design approvals
 - improve clarity, reduce time/risks involved with mis-interpretation of scope
- CAA has utilised internal template-wording, agreed with DDH in each case
- New AC146-2 has now been drafted, progressing towards consultation
- Framework developed with reference and consideration of FAA DER framework (Order 8110.37), EASA (cert panel disciplines) and CASA system (AC21-J guidance)

Proposed framework for DDH scope statements

DRAFT – for information only

Framework

- AC146-2 to include a range of scope statements that may appear on an Instrument of Delegation (IoD).
- Scope statements which are in the AC, but not in an IoD, are not within the DDH's scope
- An applicant may propose alternative statements but... must enable clear interpretation and ensure competency can be readily assessed
- Standard conditions:
 - Work performed under Part 146 DO, and iaw exposition
 - Excluding major modifications without prior written consent

Framework

Scope of design changes which may be approved described by three criteria:

- **Product Scope** – size and type of products which changes can be made to
 - **Engineering Scope** – physical or functional aspect of the product which may be changed
 - **Conditions** – specific statements regarding type or extent of design change
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- Product Scope states modifications or repairs (or both)
 - Engineering Scope is stated for each Product Scope
 - Engineering Scope states Class A or B (or both)
 - Conditions are stated for each Engineering Scope

Examples

These functions and powers shall only be exercised in respect of design changes as listed:

- a. Modification and Repairs to **Large Aeroplanes**:
 - i. **Structures, Class A and B** – including metallic primary and secondary structures, composite primary and secondary structures, fatigue (safe life) and damage tolerance analysis
- b. Modifications to **Small Rotorcraft**:
 - i. **Avionics Systems, Class A** – including design changes to avionics components, and design changes to previously certified NVIS

Draft list of Product Scopes

Large Aeroplanes	An aeroplane (as defined in CAR Part 1) with a certification basis of Title 14, Part 25 of the Code of Federal Regulations
Small Aeroplanes	An aeroplane (as defined in CAR Part 1) with a certification basis of Title 14, Part 23 of the Code of Federal Regulations
Large Rotorcraft	A rotorcraft (as defined in CAR Part 1) with a certification basis of Title 14, Part 29 of the Code of Federal Regulations
Small Rotorcraft	A rotorcraft (as defined in CAR Part 1) with a certification basis of Title 14, Part 27 of the Code of Federal Regulations
Powerplants (piston engines)	A reciprocating engine with a certification basis of Title 14, Part 33 of the Code of Federal Regulations
Powerplants (gas turbine engines)	A gas turbine engine with a certification basis of Title 14, Part 33 of the Code of Federal Regulations
Powerplants (electric)	A type of aircraft engine that converts electric power into mechanical power or thrust used for propulsion. Not including gearboxes, energy storage systems, thrusters, or electrical power generation systems.
Powerplants (hybrid-electric)	A type of aircraft engine that generates electrical power for use as primary aircraft propulsive power.
Propellers (fixed pitch)	A propeller (as defined in CAR Part 1) with a certification basis of Title 14, Part 35 of the Code of Federal Regulations, whose blade pitch cannot be changed while rotating. This product scope includes ground-adjustable propellers.
Propellers (variable pitch)	A propeller (as defined in CAR Part 1) with a certification basis of Title 14, Part 35 of the Code of Federal Regulations, which permits a change of blade pitch while the propeller is rotating. This product scope includes constant-speed propellers.
Large UAS	An unmanned aircraft system (as defined in CAR Part 1) which incorporates an unmanned aircraft with a gross mass of more than 25 kg.
Small UAS	An unmanned aircraft system (as defined in CAR Part 1) which incorporates an unmanned aircraft with a gross mass less than 25kg.
LSA	A light sport aircraft (as defined in CAR Part 1).
Microlights	A microlight (as defined in CAR Part 1) which meets low momentum parameters as defined in CAANZ AC 103-1.
Balloons	As defined in CAR Part 1.

Draft list of Engineering Scopes

Structures	Design changes to components and structural elements which support loads . Including (but not limited to) the determination of loads, changes to design details, material specifications or processes that affect the strength or durability of parts.
Avionic Systems	Including (but not limited to) design changes that affect navigation, communication, flight data, flight management, engine control, flight control or autopilot systems, fuel systems, flight instruments, cybersecurity, HIRF/lightning protection, electromagnetic compatibility, system level integration or development.
Electrical Systems	Including (but not limited to) design changes that involve electrical power generation, electrical power distribution, power storage, electrical wiring interconnection systems, circuit protection, lighting systems, HIRF/lightning protection, electromagnetic compatibility.
Cabin Interiors	Including (but not limited to) design changes that affect crashworthiness, passenger compartment or flight deck interior arrangements, cargo and baggage compartments, emergency equipment, material flammability, occupant protection and emergency egress.
Rotors & Drive Systems	Including (but not limited to) design changes that affect rotor blades, rotor hubs, transmission systems, gears, drive shafts, couplings and associated systems.
Mechanical Systems	Including (but not limited to) design changes that affect flight control, environmental, hydraulic, oxygen, ice protection, water systems, fuel systems, wheels/tyres/brakes, hoist/lifting, life support equipment, evacuation systems.
Flight	Design changes that may affect aircraft performance, flight characteristics, handling (including but not limited to aircraft controllability, manoeuvrability, stability) and flightcrew interface.
Acoustical	Design changes that affect compliance with aircraft noise standards (e.g. ICAO Annex 16 Volume I or equivalent).
Emissions	Design changes that affect compliance with aircraft emission standards (e.g. ICAO Annex 16 Volume II or equivalent).
Airborne Software and Electronic Hardware	Including (but not limited to) design changes that involve computer programmes (including associated data), electronic hardware items installed in airborne equipment/systems on a type-certificated product, development and/or development assurance at item level. Examples of electronic hardware items include (but are not limited to) LRUs, circuit board assemblies, custom micro-coded components such as Application Specific Integrated Circuits (ASICs) and Programmable Logic Devices (PLDs), including any associated macro functions, integrated technology components, such as hybrids and multi-chip modules, Commercial-Off-The-Shelf (COTS) components.

Draft list of Engineering Scopes (Powerplant)

Core engine	Design changes affecting core sections of an aircraft engine involved in converting chemical energy (oxygen and fuel sources) into thermal and mechanical energy (mass flow and shaft rotation). Reciprocating engines – core sections include the cylinder head, pistons, crank shaft, valves, cam shafts, and crank case. Gas turbine engines – core sections include the compressor, combustion and turbine stages.
Fuel metering systems	Design changes affecting components and systems involved in supplying the correct mixture of fuel and air to aircraft engines (including but not limited to; carburettors and fuel control units).
Lubrication systems	Design changes affecting components and systems involved in the distribution and cooling of lubricants used to reduce friction within an aircraft engine (including but not limited to; oil tanks, pumps, filters, oil cooling components).
Ignition systems	Design changes affecting components and systems involved in providing a high-energy spark for igniting the air/fuel mixture in the combustion chamber of an aircraft engine.
Exhaust & thrust reverser systems	Design changes affecting components and systems involved in discharging or diverting fan or exhaust gases from an aircraft engine (including but not limited to; exhaust collectors/manifolds, heat exchangers, exhaust cones, nozzles, thrust reverser systems).
Induction systems & engine cowl	Components and system that affect the condition and flow of air through, and immediately around, an aircraft engine (including but not limited to; inlet and fan ducts, nacelle panels, air filters, induction manifolds, throttle body, and superchargers).
Core engine	Design changes affecting core sections of an aircraft engine involved in converting chemical energy (oxygen and fuel sources) into thermal and mechanical energy (mass flow and shaft rotation). Reciprocating engines – core sections include the cylinder head, pistons, crank shaft, valves, cam shafts, and crank case. Gas turbine engines – core sections include the compressor, combustion and turbine stages.
Fuel metering systems	Design changes affecting components and systems involved in supplying the correct mixture of fuel and air to aircraft engines (including but not limited to; carburettors and fuel control units).
Lubrication systems	Design changes affecting components and systems involved in the distribution and cooling of lubricants used to reduce friction within an aircraft engine (including but not limited to; oil tanks, pumps, filters, oil cooling components).
Ignition systems	Design changes affecting components and systems involved in providing a high-energy spark for igniting the air/fuel mixture in the combustion chamber of an aircraft engine.

Draft list of Conditions

Structures	Including metallic primary and secondary structures
	Including composite primary and secondary structures
	Including fatigue (safe life) and damage tolerance analysis
	Including aeroelastic considerations
	Including dynamic components
	Including additively manufactured components
Avionics Systems	Limited to integration and installation only
	Including design changes to avionic components
	Including design changes involving NVIS
	Including design changes to certify NVIS systems or design changes to previously certified NVIS systems
Flight	Including modifications to avionic systems that affect the IFR certification and/or capability of the aircraft
	Limited to showings of 'unaffected'
	Including design changes that affect flight crew interface only.
	Including design changes that affect aircraft performance and/or flight crew interface only.
	Including design changes that affect aircraft performance, flight characteristics, handling and/or flight crew interface (excluding flutter and systems structures interface, spinning, H/V envelope determination, and autorotation characteristics).
	Including design changes that affect aircraft performance, flight characteristics, handling and flight crew interface (including flutter and systems structures interface, spinning, H/V envelope determination, and autorotation characteristics).
Airborne Software and Electronic Hardware	Limited to design changes involving software at Design Assurance Level C or D
	Limited to item level finding of compliance

Next Steps

Consultation process

- Draft AC146-2 will be released for consultation/feedback via CAA website
- Expected to be open for consultation for 1 month
- Final draft is still pending CAA internal review
- Stay tuned

[Advisory Circulars open for consultation | aviation.govt.nz](https://aviation.govt.nz)



Thanks

