



WELLINGTON NEW ZEALAND

PURSUANT to Section 28 of the Civil Aviation Act 1990

I, **HARRY JAMES DUYNHOVEN**, Associate Minister of Transport,

HEREBY MAKE the following ordinary rules.

SIGNED AT Wellington

This *4th* day of *November* 2003

by **HARRY JAMES DUYNHOVEN**

Associate Minister of Transport

Civil Aviation Rules

Part 137 – Re-issue

Agricultural Aircraft Operations

Docket 1/CAR/1358

Content

Rule objective	4
Extent of consultation.....	5
Summary of comments.....	5
Examination of comments.....	6
Effective date of rule.....	7
Availability of rules.....	7
Subpart A — General	8
137.1 Purpose.....	8
137.3 Requirement for ratings.....	8
137.5 Requirement for certificate.....	9
137.7 Reserved.....	9
137.9 Accidents and incidents.....	9
Subpart B — Flight Rules	9
137.51 Purpose.....	9
137.53 Revoked.....	9
137.55 Direction of turns at aerodromes	9
137.57 Revoked.....	10
137.59 Revoked.....	10
137.61 Operations over congested areas	10
137.63 Operations over non-congested areas	10
137.65 Fuel reserves.....	10
Subpart C — Special Flight Rules	11
137.101 Purpose.....	11
137.103 Maximum take-off weight.....	11
137.105 Take-off distance and flight path — no third party risk.....	11
137.107 Take-off distance — third party risk	12
137.109 Take-off flight path — third party risk	12
Subpart D — Commercial Operations - General	13
137.151 Application for certificate.....	13
137.153 Issue of certificate	13
137.155 Revoked.....	14
137.157 Duration of certificate.....	14

137.159 Renewal of certificate.....	14
137.161 Revoked.....	14
Subpart E — Commercial Operations – Operating Requirements	14
137.201 Records.....	14
137.203 Remote base operations.....	15
137.205 Operations over congested areas	15
137.207 Personnel requirements	16
137.209 Changes to operations.....	17
137.211 Revoked.....	17
Subpart F — Instruments and Equipment	17
137.251 Purpose.....	17
137.253 General	17
137.255 Seating and restraints.....	18
137.257 Additional instruments	18
137.259 Additional equipment	18
Appendix A — Third Party Risk	19
Appendix B — Overload Weight Determination	19
Appendix C — Revoked	20
Appendix D — Instruments and Equipment Airworthiness Design Standards	20
D.1 Seating and restraints.....	21
D.2 Revoked.....	21
D.3 Hoppers and spray tanks.....	21
D.4 Hopper upper level contents	21
D.5 Jettison system.....	21
D.6 Markings and placards.....	22
Consultation Details	25
Comments on the NPRM	25

Rule objective

The purpose of Part 137 is to prescribe additional rules to, and exceptions from, the general operating and flight rules in Part 91 for pilots performing, or being trained to perform, agricultural aircraft operations. Part 137 also prescribes rules governing the certification and operation of persons performing commercial agricultural aircraft operations.

The re-issue of this Rule Part:

- (a) amends the criteria for a senior person acting as Chief Pilot for an agricultural aircraft operation; and
- (b) removes the inference that jettison capability and associated dump times need to be tested and recorded for each agricultural material dispensed during agricultural aircraft operations; and
- (c) requires the aircraft to have a jettison system that is capable of dumping 80% of the load within 5 seconds before the aircraft can be operated above the MCTOW prescribed in the flight manual; and
- (d) deletes redundant rules that—
 - (1) are not relevant to Part 91 requirements (height of turns at aerodromes, operations without position lights); or
 - (2) repeat the CAA functions prescribed in the Act (exemptions, safety inspections); or
 - (3) are covered more appropriately through other legislation introduced since the rule was written (dispensing of agricultural chemicals).
- (e) makes minor editorial changes to ensure wording is consistent with the current drafting style and to simplify and clarify the rule intent where appropriate.

A consequential amendment to Part 1 – Definitions and Abbreviations amends the definition of *agricultural aircraft operation* to provide further clarification of the activities considered to be agricultural aircraft operations and to which Part 137 requirements or exceptions apply.

Extent of consultation

A technical study group (TSG) comprising representatives of the CAA and New Zealand Agricultural Aircraft Association (NZAAA) was formed in March 2000 to discuss the rule changes proposed by two petitions. The TSG met on three occasions, being March, June and August 2000, prior to the NZAAA conference in October 2000 where a draft NPRM rule proposal was presented to the attendees for discussion. A fourth meeting of the TSG was then held in December 2000 to discuss the draft NPRM and any comments resulting from the conference.

There were several informal discussions between CAA and NZAAA from January 2001 to July 2001 with a final TSG meeting being held in August 2001. The main issue that remained unresolved was the wording and perceived application of the rule 137.63(2) for operation over non-congested areas. The NZAAA position on this differed to that of the CAA therefore it was necessary to seek external legal advice on the issue. Legal advice maintained that the wording of rule 137.63(2) is drafted appropriately and should pose no interpretation problems therefore the intent of rule 137.63 has remained substantially unchanged.

A Notice of Proposed Rulemaking, NPRM 03-04, containing the proposed amendments to Part 137 and the consequential amendment to Part 1 was presented to the Ministry of Transport in April 2002, however due to an early government election publication of the NPRM was delayed. NPRM 03-04 was issued for public consultation under Docket 1/CAR/1358 on 12 September 2002.

The publication of this NPRM was notified in the Gazette on 12 September 2002 and advertised in the daily newspapers in the five main provincial centres on 12 September 2002. The NPRM was published on the CAA web site and mailed to identified stakeholders including representative organisations who were considered likely to have an interest in the proposal.

A period of 50 days was allowed for comment on the proposed rule.

Summary of comments

Ten submissions were received on the NPRM. Comments were received with respect to operations over non-congested areas and the proposed amendment of the definition for agricultural aircraft operation.

Suggestions were made on alternative methods for demonstrating jettison capability. Support was given for changes to the Chief Pilot requirements. Support was withdrawn by the NZAAA from their proposal to reduce the minimum fuel reserves to be carried.

The CAA held a meeting with a representative of the NZAAA to review the comments and submissions made on the NPRM. A detailed summary of comments received and responses by CAA is contained in the consultation details attached to these rules. The following summarises the changes that have been made as a result of consultation on the NPRM:

- *Definition Agricultural Aircraft Operation.* Retain paragraphs (4), (5) and (6) which describe the activities covered under the definition of an agricultural aircraft operation;
- *Fuel Reserves.* Retain the current minimum fuel reserve of 30 minutes for aeroplanes and 3 times the anticipated flight time or 30 minutes for helicopters;
- *Jettison System.* Mandatory for aircraft taking off with a weight greater than the MCTOW specified in the aircraft flight manual. Those aircraft taking off at a weight that is equal to, or is less than, the MCTOW are not required to meet the jettison capability prescribed;
- *Placards.* Amended to reflect the changes with respect to jettison capability.

Examination of comments

Comments may be examined by application to the Docket Clerk at the Civil Aviation Authority between 8:30 am and 4:30 pm on weekdays, except statutory holidays.

Re-issue

The re-issue of Part 137 is reflected by the revocation of the existing Part and insertion of the re-issued Part.

Effective date of rule

The re-issued Part 137 comes into force on 12 December 2003.

Availability of rules

Civil Aviation Rules are available from–

CAA web site: www.caa.govt.nz

Freephone: 0800 GET RULES (0800 438 785)

Part 137 is revoked and the following new Part 137 is issued.

Subpart A — General

137.1 Purpose

This Part prescribes—

- (1) rules additional to the general operating and flight rules in Part 91, for a pilot performing, or being trained to perform, an agricultural aircraft operation; and
- (2) exceptions from the general operating and flight rules in Part 91 for a pilot performing, or being trained to perform, an agricultural aircraft operation; and
- (3) rules governing the certification and operation of a person performing a commercial agricultural aircraft operation.

137.3 Requirement for ratings

- (a) A pilot performing an agricultural aircraft operation must hold—
 - (1) a current and applicable agricultural rating issued under Part 61 for the category of aircraft used; and
 - (2) a current pilot chemical rating issued under Part 61, if dispensing an agricultural chemical.
- (b) Paragraph (a)(1) does not apply to—
 - (1) a pilot training for an agricultural rating under the direct supervision of a holder of a Category E flight instructor rating issued under Part 61; or
 - (2) a pilot performing any of the following agricultural aircraft operations:
 - (i) dropping farm supplies on farms in rural areas or delivering farm materials to farms in rural areas;
 - (ii) agricultural, forest or water area surveying at a height of less than 500 feet above terrain;

- (iii) feeding or transferring livestock on farms in rural areas.

137.5 Requirement for certificate

No person may perform a commercial agricultural aircraft operation except under the authority of, and in accordance with the provisions of, an agricultural aircraft operator certificate issued in accordance with Subpart D.

137.7 Reserved

137.9 Accidents and incidents

A person performing an agricultural aircraft operation who is involved in an accident or incident must notify the Director of the accident or incident in accordance with Part 12.

Subpart B — Flight Rules

137.51 Purpose

This Subpart prescribes additional rules to, and exceptions from, the general operating and flight rules in Part 91, for a pilot performing, or being trained to perform, an agricultural aircraft operation.

137.53 Revoked

137.55 Direction of turns at aerodromes

A pilot performing, or being trained to perform, an agricultural aircraft operation may turn in a direction other than that prescribed in Part 91 or under Part 93, when approaching for a landing at, or after take-off from, an aerodrome if—

- (1) the aerodrome is used solely for agricultural aircraft operations; or
- (2) the aerodrome displays the ground signal prescribed in Part 91 indicating that an agricultural aircraft operation is being conducted from that aerodrome.

137.57 Revoked**137.59 Revoked****137.61 Operations over congested areas**

Notwithstanding Part 91, a pilot performing an agricultural aircraft operation over a congested area of a city, town, or settlement may, for the proper accomplishment of the operation, fly below the minimum height prescribed in Part 91 if—

- (1) the pilot performs the operation on behalf of a Government department or Crown entity; and
- (2) the pilot performs the operation in accordance with conditions and limitations prescribed by the Director; and
- (3) the pilot performs the operation under the authority of an agricultural aircraft operator certificate issued in accordance with this Part; and
- (4) the holder of the agricultural aircraft operator certificate has complied with 137.205.

137.63 Operations over non-congested areas

Notwithstanding Part 91, a pilot performing, or being trained to perform, an agricultural aircraft operation over any area other than a congested area of a city, town, or settlement, may fly at any altitude and at any distance from an obstruction if—

- (1) the operation is performed without creating a hazard to persons or property on the surface; and
- (2) the altitude and distance for all approaches, turnarounds, and departures are necessary for the operation.

137.65 Fuel reserves

Notwithstanding Part 91, a pilot performing, or being trained to perform, an agricultural aircraft operation must ensure that the aircraft has the following minimum fuel reserves:

- (1) for aeroplanes, 30 minutes flight time;

- (2) for helicopters, 3 times the anticipated flight time or 30 minutes flight time, whichever is the lesser.

Subpart C — Special Flight Rules

137.101 Purpose

This Subpart prescribes exceptions to the general operating and flight rules in Part 91 for a pilot performing, or being trained to perform, an agricultural aircraft operation in an aeroplane issued with a restricted category airworthiness certificate under Part 21 Subpart H for the purpose of an agricultural aircraft operation.

137.103 Maximum take-off weight

(a) Notwithstanding Part 91 and subject to paragraph (b), a pilot performing, or being trained to perform, an agricultural aircraft operation in an aeroplane must not take-off at a weight greater than the MCTOW prescribed in the aeroplane's flight manual unless—

- (1) the pilot complies with the procedures listed in Appendix B; and
- (2) the aeroplane is equipped with a jettison system that, in accordance with D.5, is capable of discharging not less than 80 percent of the aeroplane's maximum hopper load within five seconds of the pilot initiating the jettison action.

(b) Where there is a third party risk as defined in Appendix A, the pilot must determine the maximum take-off weight in accordance with 137.107 and 137.109.

137.105 Take-off distance and flight path — no third party risk

A pilot performing, or being trained to perform, an agricultural aircraft operation in an aeroplane where there is no third party risk as defined in Appendix A is not required to comply with the following:

- (1) the take-off distance specified in the aeroplane flight manual;
- (2) the take-off flight path gradient specified in the aeroplane flight manual.

137.107 Take-off distance — third party risk

(a) Subject to paragraph (b), a pilot performing, or being trained to perform, an agricultural aircraft operation in an aeroplane, where there is a third party risk as defined in Appendix A, must ensure that the take-off distance available is greater than the take-off distance specified in the aeroplane flight manual multiplied by a factor of 1.2.

(b) When calculating the take-off distance, the pilot must take the following factors into account:

- (1) the weight of the aeroplane at the commencement of the take-off run;
- (2) the pressure altitude of the aerodrome;
- (3) the ambient temperature at the aerodrome;
- (4) the runway surface type and condition;
- (5) the runway slope in the direction of take-off;
- (6) not more than 50% of the headwind component or not less than 150% of the tailwind component.

137.109 Take-off flight path — third party risk

(a) Subject to paragraph (b), a pilot performing, or being trained to perform, an agricultural aircraft operation in an aeroplane where there is a third party risk as defined in Appendix A must ensure that the take-off flight path clears all obstacles by—

- (1) a vertical distance of at least 50 feet plus $0.025D$; or
- (2) a lateral distance of at least 30 metres plus $0.1D$ —

where D is the horizontal distance travelled by the aircraft from the end of the take-off distance available.

(b) When calculating compliance with paragraph (a), the pilot must take the following factors into account:

- (1) the take-off flight path must begin at a height of 50 feet above the take-off surface at the end of the take-off distance required by 137.107 and end at a height of 500 feet above the take-off surface;
- (2) the aeroplane must not be banked at an angle exceeding 20 degrees;
- (3) obstacles which have a lateral distance greater than 150 metres from the planned flight path may be disregarded.

Subpart D — Commercial Operations - General

137.151 Application for certificate

An applicant for the grant of an agricultural aircraft operator certificate must complete form CAA 24137/01 and submit it to the Director with a payment of the appropriate application fee prescribed by regulations made under the Act.

137.153 Issue of certificate

Subject to section 9 of the Act an applicant is entitled to an agricultural aircraft operator certificate if the Director is satisfied that the applicant—

- (1) has engaged a senior person as the Chief Executive who has the authority to ensure that all activities can be financed and carried out in accordance with this Part; and
- (2) has engaged a senior person as the Chief Pilot who holds a current chemical rating if applicable and—
 - (i) has held or holds a current Grade 1 agricultural rating issued under Part 61; and
 - (ii) has practical experience, acceptable to the Director, appropriate for the type of operation being conducted; and
- (3) the applicant and the senior person or senior persons required under paragraphs (1) and (2) are fit and proper persons; and

- (4) the granting of the certificate is not contrary to the interests of aviation safety.

137.155 Revoked

137.157 Duration of certificate

- (a) An agricultural aircraft operator certificate may be granted or renewed for a period of up to 5 years.
- (b) An agricultural aircraft operator certificate remains in force until it expires or is suspended or revoked.
- (c) The holder of an agricultural aircraft operator certificate that expires or is revoked must immediately surrender the certificate to the Director.
- (d) The holder of an agricultural aircraft operator certificate that is suspended must immediately produce the certificate to the Director for appropriate endorsement.

137.159 Renewal of certificate

- (a) An application for the renewal of an agricultural aircraft operator certificate must be made on form CAA 24137/01.
- (b) The application must be submitted to the Director before the application renewal date specified on the certificate or if no such date is specified, not less than 60 days before the certificate expires.

137.161 Revoked

Subpart E — Commercial Operations – Operating Requirements

137.201 Records

- (a) The holder of an agricultural aircraft operator certificate must maintain accurate records at the certificate holder's principal place of operation of the following:
- (1) the name and address of each client;
 - (2) the date of each agricultural aircraft operation;

- (3) the name and quantity of the material that is dispensed on each agricultural aircraft operation;
 - (4) the name, address, flight crew licence number, and rating details of each pilot performing an agricultural aircraft operation;
 - (5) the date each pilot was issued with their agricultural rating or the date of the last successful completion by each pilot of the annual competency check required in accordance with Part 61, whichever occurred later;
 - (6) where applicable, the date each pilot was issued with their chemical rating or the date of the last successful completion by each pilot of the refresher course required in accordance with Part 61, whichever occurred later.
- (b) The records required under paragraph (a) must be retained for a period of not less than 2 years from the date of completion of the operation.

137.203 Remote base operations

The holder of an agricultural aircraft operator certificate who performs a commercial agricultural aircraft operation for a period of 14 or more consecutive days from a base which is not the operator's principal place of operation must appoint a base pilot who—

- (1) holds a current agricultural rating and, if applicable, a current chemical rating; and
- (2) is responsible for the operations from that remote base; and
- (3) may be responsible for arranging work rosters and maintaining records.

137.205 Operations over congested areas

(a) The holder of an agricultural aircraft operator certificate who wishes to perform an agricultural aircraft operation over a congested area of a city, town, or settlement must—

- (1) document a plan for the operation, in conjunction with and for the briefing of all personnel and organisations involved in the operation, containing—
 - (i) consideration of obstructions to flight; and
 - (ii) the emergency landing capabilities of the aircraft used; and
 - (iii) any co-ordination necessary with the air traffic control service; and
 - (2) ensure all personnel and organisations involved in the operation are briefed on the plan required under paragraph (a)(1); and
 - (3) give notice of the operation to the public by an effective means; and
 - (4) ensure that the aircraft has, within the preceding 100 hours of time in service—
 - (i) had an annual or 100-hour inspection in accordance with Part 43; or
 - (ii) been inspected under a progressive inspection programme.
- (b) The pilot-in-command performing an agricultural aircraft operation over a congested area of a city, town or settlement, must comply with the applicable plan required in paragraph (a)(1).
- (c) The holder of an agricultural aircraft operator certificate must retain the plan required under paragraph (a)(1) for a period of at least 2 years from the date of completion of the operation.

137.207 Personnel requirements

The holder of an agricultural aircraft operator certificate must continue to employ, engage or contract the senior persons specified in 137.153(1) and (2).

137.209 Changes to operations

The holder of an agricultural aircraft operator certificate must—

- (1) notify the Director in writing of any change that affects the currency of any information required by form CAA 24137/01; and
- (2) obtain prior acceptance from the Director before changing the Chief Executive or Chief Pilot.

137.211 Revoked**Subpart F — Instruments and Equipment****137.251 Purpose**

This Subpart prescribes the instruments and equipment required in addition to the Part 91 requirements for aircraft to be used for an agricultural aircraft operation performed under this Part.

137.253 General

No person may commence an agricultural aircraft operation unless—

- (1) the aircraft is equipped with the type and number of instruments and equipment required in accordance with Part 91 and this Subpart; and
- (2) the instruments and equipment installed in the aircraft comply with the relevant specifications and airworthiness design standards listed in—
 - (i) Appendix D to this Part; and
 - (ii) Appendix C to Part 21; and
 - (iii) Part 26; or
 - (iv) alternative specifications or standards acceptable to the Director; and

- (3) the instruments and equipment are installed in accordance with the aircraft manufacturer's instructions or other instructions acceptable to the Director; and
- (4) except as may be provided by a MEL approved under Part 91 for use for that aircraft, the instruments and equipment installed in the aircraft are in an operable condition.

137.255 Seating and restraints

The operator of an agricultural aircraft must ensure that the aircraft is equipped with a shoulder harness for each crew seat.

137.257 Additional instruments

The operator of an agricultural aircraft must ensure that the aircraft is equipped with a slip indicator.

137.259 Additional equipment

The operator of an agricultural aircraft must ensure that the aircraft is equipped with—

- (1) approved hoppers or spray tanks as applicable; and
- (2) a means of indicating to the pilot the upper level of the hopper contents; and
- (3) a jettison system for aeroplanes equipped with internal hoppers or spray tanks; and
- (4) applicable placarding in accordance with Appendix D including—
 - (i) hopper or spray tank maximum structural load as specified in the aircraft flight manual; and
 - (ii) passenger locations; and
 - (iii) flight limitations; and
 - (iv) jettison capability.

Appendix A — Third Party Risk

A third party risk exists where there is a third party, or property of a third party, within the take-off area prescribed in Figure 1.

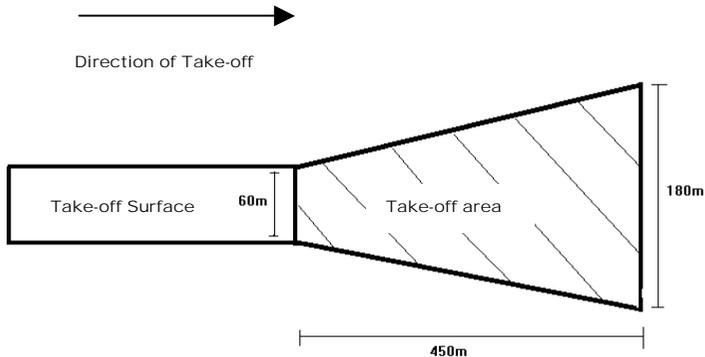


Figure 1.

Appendix B — Overload Weight Determination

- (a) The pilot procedures required by 137.103(a) consist of—
- (1) finding the MCTOW in the aeroplane flight manual and the original aeroplane limit load factor; and
 - (2) locate the 'original aeroplane limit load factor' on the horizontal axis of figure 2, going vertically up to the reference line and then horizontally to the vertical axis to read the 'maximum recommended percentage weight increase'; and
 - (3) increasing the original category MCTOW by this percentage to find the new maximum take-off weight.

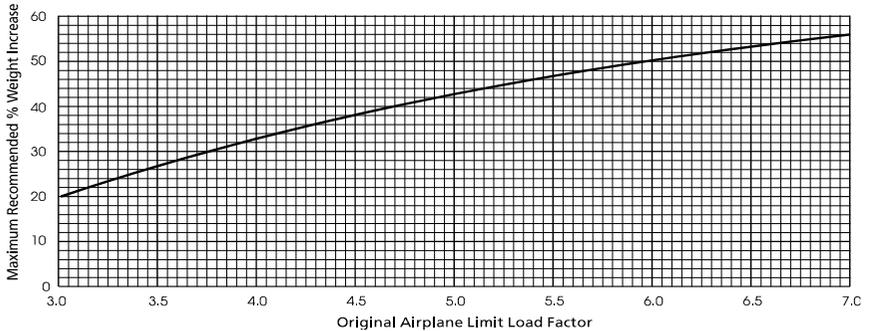


Figure 2.

(b) When considering whether to operate up to this new maximum take-off weight, the pilot must take the following factors into account:

- (1) the pressure altitude of the aerodrome;
- (2) the ambient temperature at the aerodrome;
- (3) the runway surface type and condition;
- (4) the runway slope in the direction of take-off;
- (5) the headwind or tailwind component in the direction of the take-off;
- (6) any other factors that may affect the performance of the operation.

Appendix C — Revoked

Appendix D — Instruments and Equipment Airworthiness Design Standards

Instruments and equipment required by Subpart F must meet the following specifications and requirements:

D.1 Seating and restraints

Seats and shoulder harnesses must be designed using an ultimate forward and resulting inertia force of 12g.

D.2 Revoked

D.3 Hoppers and spray tanks

(a) A hopper or spray tank and its support structure that is situated in such a position that it could injure an occupant if it came loose in a minor crash landing must be designed using an ultimate forward and resulting inertia force of 12g.

(b) A hopper or spray tank and its support structure that is situated in front of the crew must be designed using ultimate inertia forces of—

- (1) 1.5g rearwards; and
- (2) 1.0g sideways.

(c) For the purposes of paragraph (a) and (b), the hopper or spray tank must be assumed to be filled to the maximum load specified in the aircraft flight manual.

D.4 Hopper upper level contents

Hoppers must be provided with a means for the pilot to detect the upper level of the contents, by indication or observation, for all loads in excess of half the maximum hopper load specified in the aircraft flight manual, allowing for the likely range of agricultural material densities to be carried.

D.5 Jettison system

(a) A jettison system must be—

- (1) simple to operate; and
- (2) designed so that once the control is selected by the pilot the load will fully discharge without requiring the pilot to continue holding the control.

(b) The capability of the jettison system must be—

- (1) demonstrated by a flight test using—
 - (i) the maximum permitted load of Superphosphate specified in the flight manual; and
 - (ii) when specialised role equipment is fitted, the maximum permitted load of the agricultural material typically used when that role equipment is fitted; and
- (2) specified in the aeroplane flight manual.

D.6 Markings and placards

D.6.1 General

- (a) Markings and placards must be displayed in a conspicuous place that may not be easily erased, disfigured, obscured, or removed.
- (b) Units used on markings and placards must be the same as those on the related instrument or in the related aircraft flight manual.

D.6.2 Hopper or spray tank maximum loadings

A placard stating the maximum hopper or spray tank load must—

- (1) be located—
 - (i) adjacent to the hopper or tank filler; and
 - (ii) in full view of the normal loading positions; and
- (2) state a maximum load not exceeding the permitted maximum hopper load.

D.6.3 Jettison capability

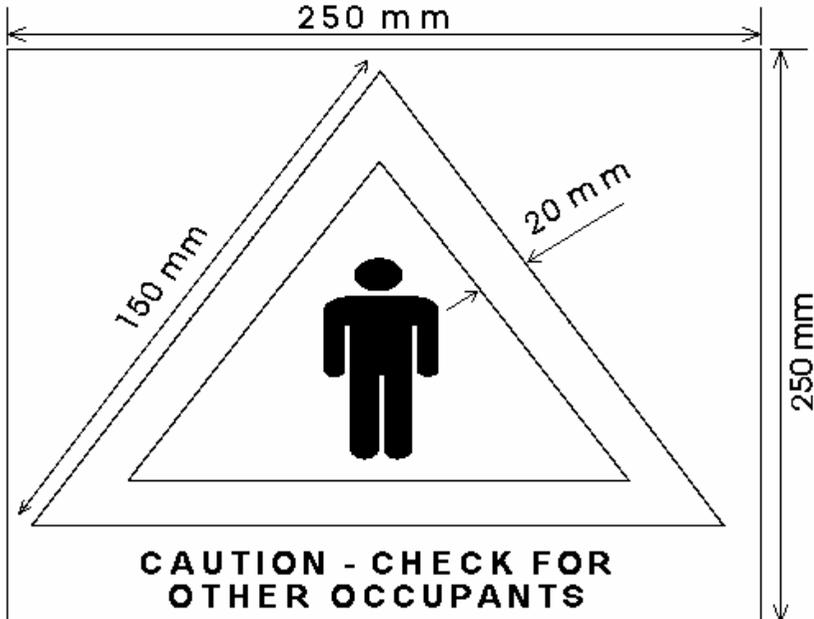
Agricultural aeroplanes equipped with a jettison system in accordance with 137.259(3) must have a placard with the following wording displayed in the cockpit and in view of the pilot:

CAUTION

The jettison capability of this aeroplane may differ depending on the aeroplane configuration and the type and condition of the material to be dispensed.

D.6.4 Passenger locations

For each passenger position not readily visible from the outside of an aircraft, the exterior must be marked on both sides of the fuselage adjacent to the passenger position with the following diagram:



A black figure within a red triangle on a white background.

D.6.5 Aeroplane flight limitations

(a) A placard or placards with the following wording must be displayed in the cockpit of an agricultural aeroplane and in view of the pilot:

WARNING

Operation of this aeroplane above the MCTOW requires a minimum jettison capability of at least 80% of the maximum permitted load within 5 seconds for the configuration being used.

CAUTION

This is an agricultural aeroplane. All aerobatic manoeuvres, including spins, prohibited. Avoid severe flight manoeuvres.

(b) A “Caution” placard that complies with the wording of 137 D.6.5 that was in force on 11 December 2003 may continue to be displayed for compliance with the CAUTION placard required under D.6.5(a).

Consultation Details

Comments on the NPRM

(These statements do not form part of the rules contained in Part 137. They provide details on the consultation undertaken in making the rules.)

General:

Comments received on the NPRM provided further suggestions for jettison requirements for agricultural aircraft and the testing of the jettison capability of the system. The CAA has worked through these suggestions in consultation with representatives of the NZAAA and those who commented on the NPRM and as a result has amended the rules where appropriate.

Suggestions were made for alternative methods for demonstrating jettison capability other than by a flight test which will be investigated further by the CAA.

The structure of some rules has been amended and editorial changes have been made to provide clarity and, in some cases to maintain consistency in the terminology used.

Specific:

1. Rule 137.3

One commenter strongly disagreed with the proposed deletion of paragraphs (4), (5) and (6) from the definition of agricultural aircraft operations which describes activities to which Part 137 applies.

CAA Comment: The CAA has reviewed what at first appeared to be a straight forward amendment and realignment of the requirements for these particular aviation activities. The deletion of paragraphs (4), (5) and (6) from the definition of agricultural aircraft operations would mean that they could continue to be conducted privately (i.e. not for hire and reward), or would need to be conducted by helicopter under Part 133, or by the holder of Part 135 air operator certificate using either an aeroplane or helicopter.

- Not all Part 137 agricultural aircraft operators are Part 135 certificated and therefore could potentially lose revenue. This was the concern of the commenter.
- These activities could be undertaken by helicopter operators under Part 133 without the need for certification and the associated costs of this. However aeroplane operators would need to be Part 135 certificated. This creates disparity between fixed wing and rotary wing operators.

The CAA agreed to retain these activities in the definition of agricultural aircraft operations pending a review of the issue in conjunction with others relating to certification, training and management of agricultural aircraft operations in a separate rule development project.

The descriptor in paragraph (4) and (5) of the definition of agricultural aircraft operation requires further qualification to reflect that the additional rules and exceptions in Part 137 are applicable for these activities only when they are conducted in rural areas. For example the transferring of livestock from Auckland to Melbourne is not intended to be an Agricultural Aircraft Operation conducted under Part 137 but rather a commercial freight operation.

The definition in Part 1 and rule 137.3 has been amended for clarification.

2. *Rule 137.61*

One commenter was concerned about the inclusion of the word “settlement” in the rule as the proliferation of lifestyle blocks constitutes a settlement and would therefore restrict the activities of Agricultural Operators.

CAA Comment: The rule is an exception to the minimum height rules for VFR flights prescribed in Part 91 that refer to operation over any congested area of a city, town, or settlement. The wording of 137.61 is therefore consistent with that of the primary rule in Part 91.

The increased number of lifestyle blocks and the natural spread of urban areas may well change how Agricultural Operators conduct their business.

3. **Rule 137.63**

One commenter suggested that the rule be amended by replacing the word “a” with “undue” to read as follows; “...*the operation is performed without creating undue hazard to persons or property on the surface...*”.

CAA Comment: As described at length in the NPRM, considerable thought has been given to alternative wording of this rule, including the use of the word undue. Following independent legal advice the CAA considers that the rule is drafted appropriately and that it should pose no interpretation problems.

In the appeal case, *Hart v Civil Aviation Authority* (AP9/99 – 9 September 1999) Chisholm JJ, in ruling on the unqualified use of the word *hazard* in Rule 137.63, stated:

“ When assessing whether a hazard has arisen for the purposes of Rule 137.63(ii) it is necessary to relate that inquiry to people or property on the ground. Obviously some agricultural aircraft operations will not create the slightest hazard to persons or property on the ground, for example, where there are no persons or buildings in the immediate vicinity. ...the Rule makes sense and is perfectly workable as it stands.”

4. **Rule 137.153**

One commenter wrote in support of the proposed rule change that enables persons that no longer hold medical certificates to be nominated for the role of Chief Pilot and to continue to utilise their valuable knowledge and skills.

CAA Comment: The CAA recognises the difficulties in appointing a suitably qualified Chief Pilot in such a small industry and has relaxed the criteria slightly. The nominated person must hold, or have at least held, a Grade 1 Agricultural rating, still meet the requirements for a fit and proper person, and be acceptable to the Director.

5. **Rule 137 Appendix D.5(a)(1)**

One commenter suggested that the words “or similar test material” be deleted as they do not convey in what respect the material is similar and therefore do not add anything.

CAA Comment: The CAA agrees and the words have been deleted. Superphosphate remains as the test material.

6. **Rule 137 Appendix D.5(a)(1)**

One commenter suggested an alternative method of testing whether adequate jettison capability could be achieved. He suggested that the jettison system when fully opened should have an unrestricted discharge area equating to an available area of 1.25 sq cm per kilogram of the aircraft’s maximum hopper load. He believed that this suggestion would negate the need to purchase up to 2 ton of fertiliser and the adverse environmental problem of dumping fertiliser in a concentrated area. The calculation was estimated from jettison systems in use that are known to meet the 80% in 5 seconds requirement. The suggestion was supported by a second commenter.

CAA Comment: The CAA has noted this suggestion also and will look into the matter further. A flight test will still be required to prove compliance in the mean time.

The flight testing of jettison capability of an aircraft will produce data that can confirm whether or not the system is compliant with the ‘80%-in-5 seconds’ standard. Aircraft of the same type when certificated to the same specifications and fitted with hoppers of the same type and specification will have the same jettison capability. It will be possible to compile a list of aircraft and equipment that are known to meet the jettison requirements thereby negating the need for testing in every instance.

7. **Rule 137 Appendix D.5(b)**

One commenter suggested that the words “*flight test*” be changed to “*ground test*” because of the environmental effects of dumping loads and the cost of material to carry out each test. They believe that repeated ground tests would establish the base jettison time more accurately as precise measurement during a flight test is more difficult.

CAA Comment: Ground testing of jettison capability may eventually prove to be acceptable. A test method would need to be developed that can accurately identify jettison problems that could occur in flight e.g. attitude, airflow, sink etc so as to ensure the test conditions are representative of operational conditions. The CAA has noted the suggestion and will look into the matter further. A flight test will still be required to prove compliance in the mean time.

8. ***Rule 137 Appendix D.5 – Jettison System***

One commenter suggested that aircraft dispensing agricultural materials other than Superphosphate, RPR or Lime through specialised spreading equipment, be exempt from the requirement to have a jettison system as previously described, and that a placard be displayed in the cockpit indicating that the jettison times for the type of material to be dispensed may be higher than those applicable to Superphosphate, RPR and Lime.

CAA Comment: Spreaders or other specialised equipment attached to the aeroplane constitute a design change or modification. As part of the design change or modification under Part 21 such changes are required to be tested to see how or if they affect the flight and handling characteristics. A flight manual supplement may be issued with information on performance degradation/improvement, revised operating speeds and the revision or establishment of maintenance schedules when such equipment is used. Spreaders or other specialised equipment should not be allowed to inhibit the jettison capability of the aeroplane.

If the dispensing equipment including spreaders or other specialised attachments does inhibit the jettison capability of the aeroplane, then the aeroplane can not be operated above the MCTOW specified in the flight manual and therefore can not take advantage of the allowable weight increase prescribed in Appendix B. Appropriate warnings will be required in the form of placards in the cockpit and notations in the aircraft flight manual.

9. ***Rule 137 Appendix D.6.3 – Jettison Capability***

CAA Comment: The title has been abbreviated for simplicity. .
The placard serves as a reminder that actual conditions may differ

from the test conditions and may therefore affect the ability to jettison.

10. Rule 137 Appendix D.6.5 – Aeroplane flight limitations

CAA Comment: A new placard has been included in the rule with the purpose of drawing the pilots attention to the fact an aircraft must be able to meet the 80% in 5 seconds jettison requirement before it can be operated at a take-off weight greater than the MCTOW. As an operator has the option of operating the aeroplane at or below the MCTOW when the jettison system does not meet this specification or when specialised role equipment inhibits the jettison capability, the pilot must refer to the flight manual for that aeroplane to ensure the aeroplane flown within its operational limitations.

The current cautionary placard has is been amended by removing a statement considered to be unnecessary as it is equally applicable to all aircraft yet there is no requirement to placard such a statement in these other aircraft. Existing placards will still meet the new requirement. The operator may choose at a later date to replace the placard with a smaller one with the amended wording.