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NAMCAR: PART 137

AERIAL WORK OPERATIONS

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SUBPART 1: GENERAL PROVISIONS

137.01.1 Applicability

- (1) This Part applies to-
 - (a) aircraft engaged in commercial or non-commercial agricultural or fire-fighting operations within Namibia;
 - (b) aircraft registered in Namibia and engaged in commercial or non-commercial international agricultural or international fire-fighting operations;
 - (c) persons acting as flight crew members of the aircraft operated in terms of this Part;
 - (d) foreign-registered aircraft operated by an air service operator licensed in terms of the Air Services Act, 1949 and engaged in commercial agricultural or commercial fire-fighting operations; and
 - (e) persons acting as operations personnel and fire-fighting personnel in respect of a fire-fighting operation conducted in terms of this Part.
- (2) Unless the context otherwise indicates, the provisions of Part 91, Part 96, Part 121, Part 127, Part 128 and Part 135 apply, with the necessary changes, to an aircraft operated in terms of this Part.

137.01.2 Requirements for ratings of flight crew and competency of operations personnel

- (1) A pilot of an aircraft engaged in an agricultural operation, shall hold-
 - (a) a valid agricultural pilot rating issued in terms of Part 61 for the category of aircraft used; and
 - (b) pest control operator's certificate issued in terms of the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947).
- (2) A pilot of an aircraft engaged in commercial fire-fighting operations shall-
 - (a) as a minimum, be a holder of a valid CPL with the appropriate category and type rating for the aircraft for the mission to be flown; and
 - (b) have completed the relevant fire-fighting training as stipulated in the applicable operations manual.
- (3) An operations manual of an operator engaged in commercial fire-fighting operations shall prescribe the minimum criteria for qualifications of pilots to be used for the fire-fighting operation.
- (4) All operations personnel shall meet the qualifications, training and assessment requirements as prescribed in Document NAM-CATS 137.
- (5) For purposes of this Part, a fire-fighting personnel member shall be deemed to be an agent of an operator of the fire-fighting aircraft if that personnel member is assigned to flight duties by such operator, irrespective of whether such personnel member is remunerated or not.

137.01.3 Requirements for commercial agricultural and commercial fire-fighting operations

- (1) An operator of an aircraft engaged in commercial agricultural or commercial fire-fighting operations, shall not operate the aircraft unless such operator is the holder of a valid-
 - (a) licence issued in terms of the Air Services Act, 1949; and

- (b) an air operator certificate and operations specifications issued in terms of Part 96, Part 121, Part 127, Part 128 or Part 135, as the case may be, subject to the exception prescribed in Document NAM-CATS 137; or
 - (c) a FOP issued in terms of the Air Services Act, 1949.
- (2) All commercial agricultural and commercial fire-fighting operations shall be conducted in terms of the procedures defined in the operator's operations manual.
- (3) The procedures contained in the operations manual shall meet the applicable requirements prescribed in Document NAM-CATS 137.

137.01.4 Aircraft equipment

- (1) Each owner or operator of an aircraft engaged in an agricultural or fire-fighting operation shall ensure that the aircraft has, in addition to the equipment prescribed in Part 91, an approved and properly installed shoulder harness for each person on board.
- (2) An operator of an aircraft engaged in fire-fighting operation shall ensure that the aircraft-
- (a) is in all respects suitable and serviceable to conduct the applicable operations as specified in the operations manual; and
 - (b) is a purpose-built aircraft for fire-fighting operations and certified for that purpose by the manufacturer; or
 - (c) is equipped with aerial fire-fighting equipment designed and approved for the aircraft type; or
 - (d) if not designed and purpose-built for aerial fire-fighting operations, all modifications have been approved and certified by the Executive Director.

137.01.5 Communication systems

An operator of an aircraft engaged in a fire-fighting operation shall not operate the aircraft unless it is equipped with means to establish two-way communication with the dispatch centre and other aircraft engaged in the same fire-fighting operation.

SUBPART 2: FLIGHT RULES

137.02.1 Dispensing agricultural or fire-fighting chemicals

- (1) A pilot of an aircraft dispensing an agricultural or fire-fighting chemical in an agricultural or fire-fighting operation, shall dispense the chemical only-
- (a) for its registered use; and
 - (b) in accordance with the safety instructions or use limitations on its label.
- (2) Notwithstanding the provisions of sub-regulation (1), a pilot may, if the operation is for agricultural experimental purposes-
- (a) under the supervision of a Government department conducting research in the field; or
 - (b) in terms of a permit from the applicable authority controlling such chemicals, dispense the agricultural chemical as necessary for the particular experiment.

137.02.2 Direction of turns at aerodrome

- (1) A pilot of an aircraft performing an agricultural operation may turn in a direction other than that prescribed in Part 91, when approaching for a landing at, or after take-off from, an aerodrome if-
 - (a) the aerodrome is used solely for agricultural operations; or
 - (b) in any other case, the aerodrome displays the visual ground signal prescribed in Part 91 indicating that an agricultural operation is being conducted from that aerodrome.
- (2) A pilot of an aircraft performing a fire-fighting operation may turn in a direction other than that prescribed in Part 91, when approaching for a landing at, or after take-off from, an aerodrome if the aerodrome is used solely for fire-fighting operations.

137.02.3 Height of turns at aerodromes

A pilot of an aircraft performing an agricultural or fire-fighting operation may commence a turn after take-off from an aerodrome at an altitude other than that prescribed in Part 91 if-

- (a) the turn does not cause the aircraft to fly over a populous area, unless this is required in the interest of the safe operation of the aircraft; and
- (b) the aerodrome-
 - (i) is used solely for agricultural or fire-fighting operations, as applicable; or
 - (ii) has an aerodrome control service in operation and the turn is performed in accordance with air traffic control clearance; or
 - (iii) in any other case, displays the visual ground signal prescribed in Part 91 indicating that an agricultural or fire-fighting operation is being conducted from that aerodrome.

137.02.4 Operation without position lights

Notwithstanding the provisions of Part 91, a pilot of an aircraft performing an agricultural operation may operate at night without aircraft position lights if-

- (a) it is in the interest of aviation safety to turn the lights off due to operating conditions;
- (b) prominent unlighted objects are visible for not less than 1850 metres;
- (c) take-offs and landings at aerodromes with an aerodrome control service are performed in accordance with an air traffic control clearance; and
- (d) take-offs and landings at other aerodromes are not made while other aircraft operations requiring position lights are in progress at that aerodrome.

137.02.5 Operation over populous areas

A pilot of an aircraft conducting an agricultural or fire-fighting operation over a populous area may, for the proper completion of the operation, fly below the minimum height if-

- (a) the operation is conducted on behalf of a Government department, or an association of fire-fighters;

- (b) prior approval has been obtained from the Executive Director and the operation is conducted in accordance with conditions and limitations determined by the Executive Director; and
- (c) the operation is conducted under the authority of an AOC issued as contemplated in regulation 137.01.3(1)(b).

137.02.6 Operation over non-populous area

Notwithstanding the provisions of Part 91, a pilot of an aircraft engaged in an agricultural or fire-fighting operation may, during or for the purposes of the operation, fly at any altitude and at any distance from an obstruction if-

- (a) the operation is not conducted over a populous area;
- (b) the operation is conducted without creating a hazard to persons or property on the ground; and
- (c) the altitude and distance for all approaches, turns and departures are necessary for the operation.

137.02.7 Fuel reserves

- (1) Notwithstanding the provisions of Part 91, Part 96, Part 121, Part 127, Part 128 or Part 135, as applicable, a pilot of an aircraft engaged in an agricultural operation shall ensure that the aircraft has 30 minutes flight time fuel reserve.
- (2) Notwithstanding the provisions of Part 91, Part 96, Part 121, Part 127, Part 128 or Part 135, a pilot of an aircraft engaged in a fire-fighting operation shall ensure that the aircraft has the following minimum fuel reserves-
 - (a) for aeroplanes, 20 minutes flight time; and
 - (b) for helicopters, 10 minutes flight time.

SUBPART 3: SPECIAL FLIGHT RULES

137.03.1 General

This Subpart prescribes exceptions to the general operating and flight rules in Part 91, for a pilot of an aeroplane issued with a restricted category certificate of airworthiness in terms of Part 21, engaged in an agricultural or fire-fighting operation.

137.03.2 Maximum certificated mass

- (1) Notwithstanding the provisions of Part 91 and Part 135 and subject to sub-regulation (2), a pilot of an aircraft engaged in an agricultural or fire-fighting operation, may take-off at a mass greater than the MCM specified in the aircraft flight manual if the pilot complies with the requirements as prescribed in Document NAM-CATS 137.
- (2) Where there is a third-party risk as specified in Document NAM-CATS 137, a pilot shall determine the MTOM from the requirements prescribed in regulations 137.03.3 and 137.03.4.

137.03.3 Take-off distance and flight path

- (1) Where there is a third party as specified in Document NAM-CATS 137, a pilot of an aeroplane engaged in an agricultural or fire-fighting operation shall, notwithstanding the provisions of Part 91 and subject to sub-

regulation (2), 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.

- (2) When calculating a take-off distance, a pilot shall take the following factors into account-
 - (a) mass of the aeroplane at the commencement of the take-off run;
 - (b) pressure altitude of the aerodrome;
 - (c) ambient temperature at the aerodrome;
 - (d) runway surface type and condition;
 - (e) runway slope in the direction of take-off; and
 - (f) not more than 50% of the headwind component or not less than 150% of the tailwind component.
- (3) Where there is no third party at risk as specified in Document NAM-CATS 137, a pilot is not required, notwithstanding the provisions of Part 91, to comply with-
 - (a) the take-off distance specified in the aircraft flight manual; and
 - (b) where applicable, the take-off flight path gradient specified in the aircraft flight manual.

137.03.4 Take-off flight path

- (1) Where there is a third-party risk as defined in Document NAM-CATS 137, a pilot of an aeroplane engaged in an agricultural or fire-fighting operation shall ensure that, notwithstanding the provisions of Part 91, the take-off flight path clears all obstacles by-
 - (a) a vertical distance of at least 50 feet plus $0.025D$; or
 - (b) a lateral distance of at least 30 metres plus $0.1D$,where D is the horizontal distance travelled by the aeroplane from the end of the take-off distance available.
- (2) When calculating compliance with sub-regulation (1), a pilot shall take the following factors into account-
 - (a) the take-off flight path shall begin at a height of 50 feet above the take-off surface at the end of the take-off distance required by regulation 137.03.3 (1) and (2) and end at a height of 500 feet above the take-off surface;
 - (b) the aeroplane shall not be banked at an angle exceeding 20 degrees; and
 - (c) obstacles which have a lateral distance greater than 150 metres from the planned flight path may be disregarded.

SUBPART 4: COMMERCIAL OPERATIONS

137.04.1 Records

- (1) A holder of an AOC for agricultural operations shall maintain the following records at the principal place of operation-
 - (a) the name and address of each client;
 - (b) the date of each agricultural operation;

- (c) the name and quantity of the material dispensed during each agricultural operation;
 - (d) the name, address, licence number, and rating details of the pilot concerned;
 - (e) the date on which an agricultural pilot rating was issued to the pilot concerned.
- (2) Notwithstanding the provisions of these Regulations, a holder of an AOC for fire-fighting operations shall ensure that the following records are available and maintained in the dispatch centre referred to in regulation 137.04.2(2) -
- (a) the date and location of each fire-fighting operation;
 - (b) the name and quantity of the material dispensed during each fire-fighting operation; and
 - (c) the name of the PIC.
- (3) The records referred to in sub-regulations (1) and (2) shall be retained for a period of five years from the date on which the operation is completed.

137.04.2 Remote base operations and dispatch centre

- (1) A holder of an AOC who operates an aircraft engaged in an agricultural operation, from a base other than the principal place of operation, for a period of 14 or more consecutive nights, shall appoint a base pilot who-
- (a) holds a valid agricultural pilot rating;
 - (b) is responsible for the operations from that remote base; and
 - (c) may be responsible for arranging work rosters and maintaining records.
- (2) A PIC of an aircraft engaged in a fire-fighting operation shall ensure that he or she has contact with the relevant dispatch centre in the operational area to have knowledge of other aircraft and of dangerous situations in the operational area.
- (3) The requirements applicable to the dispatch centre are prescribed in Document NAM-CATS 137.

137.04.3 Commercial agricultural operations over populous areas

A holder of an AOC who wishes to operate an aircraft engaged in an agricultural operation over a populous area shall-

- (a) prepare a plan of 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;
 - (ii) emergency landing capabilities of the aircraft used; and
 - (iii) co-ordination necessary with the ATSU concerned;
- (b) give prior written notification to the local government in whose jurisdiction the operation is to be performed;
- (c) give notice of the operation to the public by an effective means;
- (d) ensure maximum safety to persons and property on the ground, consistent with the operation; and
- (e) ensure that the aircraft has, within the preceding 100 hours of time in service-

- (i) had a mandatory periodic inspection; or
- (ii) been inspected under a progressive inspection programme, in accordance with Part 43.

137.04.4 Quality management system

An operator of an aircraft engaged in commercial operations under this Part shall have a QMS for the control and supervision of the operation.

137.04.5 Operations manual

- (1) An operator of an aircraft engaged in commercial operations under this Part shall compile an operations manual in accordance with the provisions of this Part, for the use and guidance of flight crew and operations personnel, as applicable, setting out the manner in which such operator will perform the operation.
- (2) An operator shall ensure that the operations manual referred to in Part 96, Part 121, Part 127, Part 128 and Part 135, as the case may be, includes the procedures as prescribed by this Part.
- (3) An operator shall, prior to commencing commercial operations under this Part, submit in duplicate the operations manual to the Executive Director for approval.
- (4) If the Executive Director is satisfied that the operator will comply with the provisions of this Part, the Executive Director shall certify in writing on both copies of the operations manual that such manual has been approved, and shall return one copy of the approved manual to the operator.
- (5) An operator of an aircraft engaged in commercial operations under this Part shall submit in duplicate any amendment to the operations manual to the Executive Director for approval.
- (6) If the Executive Director is satisfied that the operator will comply with the provisions of this Part, the Executive Director shall certify in writing on both copies of the amendment to the operations manual that such amendment has been approved, and shall return one copy of the approved amendment to the operator.
- (7) An operator shall at all times operate the aircraft in accordance with the approved operations manual and any approved amendment thereto.
- (8) An operator shall-
 - (a) ensure that those parts of the manual, which are required for the conduct of a flight, are easily accessible to the flight crew and operations personnel, as applicable;
 - (b) make the operations manual available for the use and guidance of operations personnel, as applicable;
 - (c) keep the operations manual up to date; and
 - (d) keep the operations manual in a safe place.

SUBPART 5: TRAINING

137.05.1 Training of flight crew and operations personnel

- (1) An operator of an aircraft engaged in fire-fighting operations shall ensure that each flight crew member and other operations personnel members, assigned to the fire-fighting operation, have successfully completed the initial or recurrent training, as the case may be, as prescribed in Document NAM-CATS 137.

- (2) Notwithstanding the provisions of sub-regulation (1), a person essential to the purpose of the flight, who is not trained in accordance with these Regulations, may be taken on a specific fire-fighting operation in addition to the regular fire-fighting personnel for the benefit of the specific operation.
- (3) An operator shall ensure that all flight crew members and operations personnel and the person referred to in sub-regulation (2), as the case may be, who have not completed the training as referred to in sub-regulation (1), shall have a standard safety briefing pertaining to the aircraft to be used for the operation.
- (4) Any training required under this Part shall be conducted in accordance with the training programme of an operator approved by the Executive Director.

137.05.2 Training records

- (1) An operator of an aircraft engaged in a commercial fire-fighting operation shall retain records of all training undertaken in terms of this Part by the flight crew and operations personnel in his, her or its employ, whether full-time or part-time.
- (2) The records referred to in sub-regulation (1) shall be valid for a period of 12 months calculated from the last day of the month in which such training is given.
- (3) An operator of an aircraft engaged in a commercial fire-fighting operation shall retain the records of each flight crew member and operations personnel for a period of at least 12 months calculated from the date on which the flight crew member or operations personnel has left the employ of such operator.

SUBPART 6: MAINTENANCE

137.06.1 Aircraft maintenance

Notwithstanding the provisions of Part 43, maintenance of aircraft involved in commercial fire-fighting operations shall be conducted according to the requirements prescribed in Part 135.

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NAM-CATS 137

Aerial Work Operations

LIST OF TECHNICAL STANDARDS

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[Figure 1](#): Maximum percentage mass increase

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137.01.2 REQUIREMENTS FOR RATINGS OF FLIGHT CREW AND COMPETENCY OF OPERATIONS PERSONNEL

1. Operations personnel qualifications, training and assessment requirements

- (1) Operations personnel involved in firefighting operations shall have
 - (a) knowledge of dispatch procedures;
 - (b) knowledge of performance capabilities of the aircraft;
 - (c) undergone the training as stipulated in CAR 137.05.1, as applicable; and
 - (d) knowledge of the requirements of CAR Part 133, when engaged in helicopter fire-fighting operations involving external loads.

137.01.3 REQUIREMENTS FOR COMMERCIAL AGRICULTURAL AND COMMERCIAL FIRE-FIGHTING OPERATIONS

1. AOC requirements

The operator of an aircraft engaged in commercial agricultural or commercial fire-fighting operations, shall not operate the aircraft unless such operator is the holder of an AOC issued in accordance with the applicable provisions of the CAR: Provided that the operator does not need to complete a statement of compliance document.

2. Procedures in operations manual

- (1) All operations shall be conducted in accordance to the procedures defined in the operator's approved operations manual.
- (2) In addition to the procedures contained in the operations manual compiled in terms of Part 96, Part 121, Part 127, Part 128 and Part 135, as applicable, the following shall be included in the operation's manual:
 - (a) Operational support services and description of equipment;
 - (b) Procedures related to firefighting operations including, as applicable-
 - (i) carriage of external loads;
 - (ii) low level flight precautions;
 - (iii) towing precautions, pickup and release procedures;
 - (iv) operational restrictions and limitations; and
 - (v) procedures to be followed by the following flight crew and operations personnel;
 - (aa) flight crew including but not limited to spotter pilot, bomber pilot and helicopter pilot;
 - (bb) dispatcher;
 - (cc) operations personnel including but not limited to bomber or helicopter safety leader, reaction teams, support vehicle driver and loaders;
 - (dd) incidents command team;
 - (c) briefing procedures for persons other than flight crew.

137.03.2 MAXIMUM CERTIFICATED MASS

1. Requirements for take-off at a mass greater than the maximum certificated mass

- (1) The pilot must execute the following procedures-
 - (a) finding the maximum certificated mass in the aircraft flight manual and the original aircraft limit load factor;
 - (b) entering the graph at the original aeroplane load limit factor on the horizontal axis of Figure 1, going vertically up to the reference line and then horizontally to the vertical axis to read the maximum recommended percentage mass increase; and
 - (c) increasing the original maximum certificated mass by this percentage to find the new maximum take-off mass.
- (2) When considering whether to operate up to this new maximum take-off mass, the pilot must take the following factors into account -
 - (a) the pressure altitude of the aerodrome;
 - (b) the ambient temperature at the aerodrome;
 - (c) the surface type and condition;
 - (d) the slope in the direction of take-off;
 - (e) the headwind or tailwind component in the direction of the take-off; and
 - (f) any other factors that may affect the performance of the operation.

2. Third-party risk

A third party risk exists where there is a third party or property of a third party within the defined area prescribed in Figure 2.

137.03.3 TAKE-OFF DISTANCE AND FLIGHT PATH

1. Third-party risk

- (1) The third party risk referred to in CAR 137.03.3, means the third party risk defined in Document NAM-CATS 137.03.2.

137.03.4 TAKE-OFF FLIGHT PATH

1. Third-party risk

- (2) The third-party risk referred to in CAR 137.03.4, means the third-party risk defined in Document NAM-CATS 137.03.2.

137.04.2 REMOTE BASE OPERATIONS AND DISPATCH CENTRE

1. Requirements for dispatch centre

- (1) A dispatch centre shall be established when more than four aircraft are being operated per site. The operator of firefighting operations shall ensure that the dispatch centre -
 - (a) is manned throughout the firefighting operation;
 - (b) provides for appropriate means of communication with the aircraft and ground personnel;
 - (c) is equipped with means to establish two-way radio communication with the operating aircraft;
 - (d) has display maps of the area of operation;
 - (e) has a database of the contact numbers of emergency medical services, police, fire and traffic departments in the area of operation; and
 - (f) has crew safety notices and protocols.

137.05.1 TRAINING OF FLIGHT CREW AND OPERATIONS PERSONNEL

1. Initial and recurrent training

- (1) Flight crew shall meet the training requirements associated with the specific licence or rating issued in terms of Part 61 and further shall undergo applicable training as prescribed in Part 96, Part 121, Part 127, Part 128 and Part 135.
- (2) The following requirements apply to the recurrent training and proficiency assessment of flight crew:
- (3) A pilot shall not conduct VFR only firefighting operations unless he or she, within the preceding 12 months, has completed recurrent training or has satisfactorily demonstrated to an authorised person (as prescribed in Part 96, Part 121, Part 127, Part 128 and Part 135) the ability to perform the manoeuvres required for firefighting on each aircraft type to be used for the operation:
 - (a) The training or proficiency assessment referred to in this subsection shall include
 - (i) knowledge of:
 - (aa) dispatch procedures;
 - (bb) steps to be taken before commencement of the operation;
 - (cc) performance capabilities and operating limitations of the aircraft to be used;
 - (ii) demonstration of:
 - (aa) safe flight and execution of specific working procedures;
 - (bb) skills necessary for manoeuvring the aircraft in the configuration needed for the type of work; and
 - (cc) handling of additional equipment needed for executing the specific work undertaken if so required to be operated by the flight crew.
- (4) A fire fighter assigned to a firefighting operation is considered to be an essential crew member during such flights.
- (5) A firefighting aircraft shall not carry any person other than crew members during flight unless-

- (a) the person is a fire fighter or fire control officer being carried within a forest fire area and has undergone the training prescribed in subsection (5);
 - (b) the person is a flight crew member undergoing training for essential duties during flight or is an aircraft maintenance technician; or
 - (c) the person is being carried to an operational work site to perform an essential function and has undergone the training prescribed in subsection (5).
- (6) Firefighting initial and recurrent training for non-flight crew members shall include training in the preceding 12 months, addressing at least the following information, as applicable to the aircraft:
- (a) Procedures prior to boarding for embarking and disembarking when engines or rotors are running;
 - (b) when and how baggage and cargo is to be loaded, secured and unloaded;
 - (c) fastening, unfastening and use of safety belts and safety harnesses, specifying when they must be fastened;
 - (d) the proper positioning of seats for take-off and landing;
 - (e) the location of normal and emergency exits, how they are marked and how they operate;
 - (f) the requirement to obey flight crew instructions;
 - (g) the location, access to and use of emergency equipment, including the emergency locator transmitter, fire extinguisher, life preservers, life rafts, survival equipment and first aid kit; and
 - (h) aircraft evacuation procedures, water ditching procedures, procedures if the aircraft is configured with external fixtures and, where applicable to wide-body helicopters, the method of egress in event of a rollover accident by use of the under seat frame of the transverse cabin seats as a ladder for egress.

Figure 1: Maximum percentage mass increase

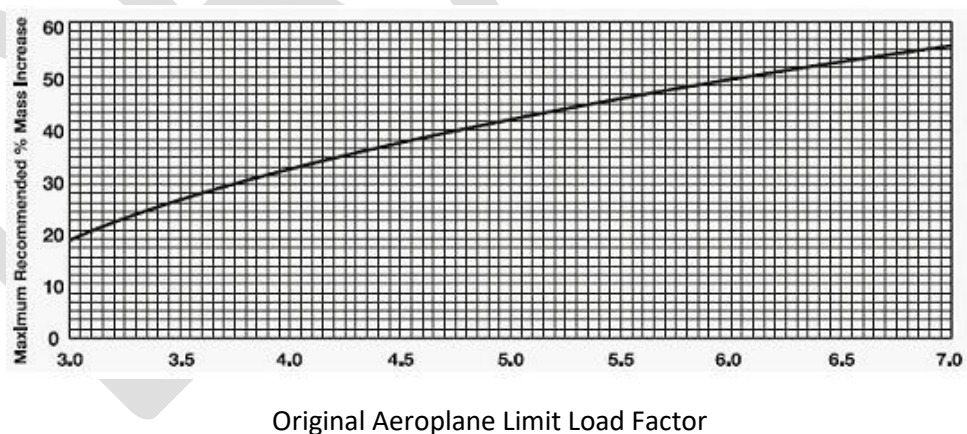
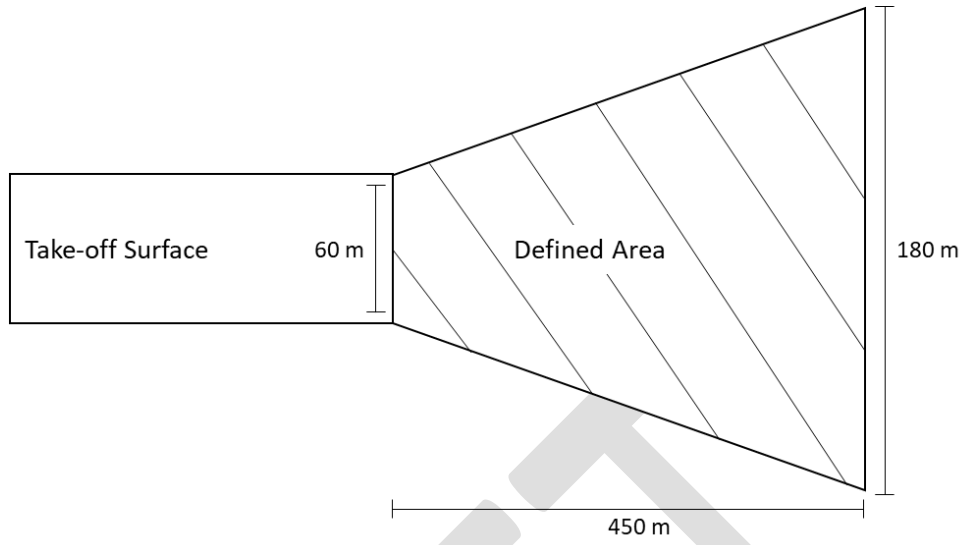


Figure 2: Third party risk



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