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GOVERNMENT NOTICE

DEPARTMENT OF TRANSPORT

No. R. 983 **19 July 2002**

AVIATION ACT 1962 (ACT NO 74 OF 1962)

PROPOSED AMENDMENT TO THE CIVIL AVIATION REGULATIONS, 1997

Under regulation 11.03.2(1)(a) of the Civil Aviation Regulations, the Chairperson of the Civil Aviation Regulations Committee (CARCOM) hereby publishes for comment the proposed amendments to the Civil Aviation Regulations, 1997, as set out in the schedules. Any comments or representations on the proposed amendments should be lodged in writing with the Chairperson of the Regulations Committee, for attention Mr. Kim Gorringe or Mr. Herman Wildenboer, Private Bag X08, Waterkloof, 0145, fax: (012) 346-5979, or e-mail at gorringek@caa.co.za or wildenboerh@caa.co.za, before or on 19 August 2002.

SCHEDULE 1

Proposal to amend Part 91 of the Civil Aviation Regulations,1997

Proposer

Civil Aviation Authority
Private Bag X08
0145 Waterkloof

Explanation of interest of the Proposer

The Proposer administers the Aviation Act of 1962 (Act No. 74/1962) and the regulations and technical standards issued in terms thereof.
(All the proposals contained in this Government Notice eminates from the Civil Aviation Authority)

1.1 Proposed amendment of regulation 91.02.8 (Duties of pilot-in-command regarding flight operations)

It is proposed to insert the following new paragraph (k) in sub-regulation (4) of regulation 91.02.8:

"(k) if the aircraft is equipped with an ELT, prior to engine shut-down at the end of each flight as part of the post-flight checks, tune the VHF receiver to 121,5 MHz to listen for ELT activation. If the ELT has been activated inadvertently as the result of a hard landing or other reasons, this shall be

reported in the appropriate flight log as maintenance may be required before it is returned to service.".

1.2 Motivation

The pilot-in-command of an aircraft, equipped with an ELT, is responsible for its proper operation. As inadvertent activation may have occurred, maintenance may be required before it is returned to service.

1.3 Current Regulation

No current regulation exists.

SCHEDULE 2

1.1 Proposed amendment of regulation 91.05.1 (Communication equipment)

It is proposed to substitute sub-regulation (1) with the following new sub-regulation (1):

"(1) Except with prior written approval by the Commissioner, no owner or operator of an aircraft shall operate, or allow the aircraft to be operated in airspace or under flight rules that in terms of regulation 172.02.2 (Classification of airspace) require the aircraft to maintain two-way communication with an air traffic service unit, unless such aircraft is equipped with radio communication equipment capable thereof.".

1. 2. Motivation

The current sub-regulation requires ANY aircraft to be equipped with two-way aeronautical communication equipment, including such aircraft as hang- and paragliders and parachutes.

However, technical standard 172.02.2 in Document SA-CATS-ATS, which expands on regulation 172.02.2 'Classification of airspace' in Part 172 (based on ICAO standards) states that no radio is required under VFR when operating in Class E or Class G airspace. (Only Class G airspace exists in South African airspace.)

It is difficult, and often unsafe, for the aircraft referred to above to carry and operate aeronautical transceivers, and current practice is to operate generally without such equipment.

The aim of the proposed amendment is to remove an existing conflict within the Civil Aviation Regulations. In the proposed new Part 94 it will be emphasised that 'no-radio' operations may be carried out in Class G airspace under VFR only.

1.3. Current Regulation

"(1) Except with written approval of missioner, no owner or operator of an

aircraft shall operate the aircraft, unless such aircraft is equipped with radio communication equipment capable of maintaining two-way communication with an air traffic service unit".

SCHEDULE 3

1.1 Proposed amendment of sub-regulation 121.02.1(6) and the insertion of new sub-regulation (7), while renumbering the current sub-regulation (7) as sub-regulation 8: (Composition of flight crew)

"(6) For operations under IFR or by night in a large commercial air transport aeroplane, an operator shall ensure that the minimum flight crew includes a properly rated second pilot: Provided that for all-cargo operations with a Class D aeroplane a single-pilot operation is allowed if –

(i) the aeroplane has been certificated and is equipped for single-pilot IFR operation, as prescribed by Regulation 121.05.3;

(ii) the operator has included in the operations manual, referred to in Regulation 121.04.2, an approved conversion and recurrent training programme for pilots, which includes the additional requirements for a single-pilot operation, as prescribed by Regulation 121.03.3; and

(iii) the pilot-in-command shall have completed in aeroplanes not less than 1 500 hours of flight time, of which –

(aa) 250 hours shall be as pilot-in-command, or not less than 100 hours as pilot-in-command and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(bb) 200 hours shall be cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(cc) 75 hours shall be instrument time, of which not more than 30 hours may be acquired in a simulator;

(dd) 100 hours shall be night flight time as pilot-in-command or as co-pilot; and

(ee) not more than 100 hours may be acquired in a simulator, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

"(7) Notwithstanding the proviso to sub-regulation (6), no person may operate an aeroplane in a Category II or Category III operation unless the flight crew includes a properly rated second pilot..".

1.2. Motivation:

To provide for single-pilot, single-engine IFR cargo-only operations with large commercial Class D air transport aeroplanes. Recently introduced new regulation 121.08.27 is ambiguous, and its technical standard discriminates between turbine and reciprocating engines (See proposed amendment of regulation. 121.08.27.).

The pilot experience requirement is based on the minimum experience required for the issue of an airline transport pilot licence. Such a licence is required for the pilot-in-command of a commercial multi-crew air transport operation. The fact that the co-pilot is replaced by an autopilot should not mean that the pilot-in-command may be less experienced.

1.3. Current regulation:

"(6) For operations under IFR or by night in a large commercial air transport aeroplane, the operator shall ensure that the minimum flight crew is two pilots.".

2.1. Proposed insertions of new paragraphs (k) and (l) into regulation 121.05.3(1) 121.05.3(6): (Flight, navigation and associated equipment for aeroplanes operated under IFR)

"(1) The operator of a large commercial air transport aeroplane shall not operate the aeroplane in accordance with IFR, unless such aeroplane is equipped with –

(a) to (j) ...

...

(k) if a multi-engine aeroplane, at least two generators or alternators, each of which is on a separate engine, of which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aeroplane; or

(l) if a single-engine aeroplane,:

(i) two independent electrical power-generating sources, each of which is able to supply all probable combinations of continuous in-flight electrical loads for required instruments or equipment; or

(ii) in addition to the primary electrical power-generating source, a stand-by battery or an alternate source of electrical power that is capable of supplying 150% of the electrical loads of all required instruments and equipment

necessary for safe emergency operation of the aeroplane for at least one hour;

(iii) an approved operative auto-pilot system, capable of operating the aircraft controls to maintain flight and manoeuvre it about the three axis; and

(iv) if the aeroplane is fitted with a turbo engine–

(aa) an auto-ignition system or use of continuous ignition during take-off, landing and flight during heavy precipitation; and

(bb) a manual throttle that bypasses the governing section of the fuel control unit, and permits continued unrestricted operation of the engine in the event of a fuel control unit failure.

For the purpose of sub-regulation (i), a continuous in-flight electrical load includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

"(6) If the aeroplane to be operated under IFR is a performance Class D aeroplane, the aeroplane shall furthermore be equipped with IFR-approved area navigation equipment that provides immediate identification and heading to the nearest suitable aerodrome.".

2.2. Motivation

To provide for additional safety measures when operating under IFR, and for the operation with large Class D aeroplanes under IFR in terms of Part 121.

2.3. Current regulation

The proposal is for the insertion of two new paragraphs into the relevant regulation as well as for the insertion of a new sub-regulation.

3.1. Proposal to add a proviso to regulation 121.05.6 (Airborne weather radar requirement)

": Provided that in the case of a non-pressurised aeroplane the airborne weather radar equipment may be substituted by other approved equipment, capable of detecting thunderstorms and other potentially hazardous weather conditions.".

3.2. Motivation:

For non-pressurised aeroplanes, the alternate equipment should suffice.

3.3. Current regulation:

" The operator of a large commercial air transport aeroplane shall not operate the aeroplane unless such aeroplane is equipped with airborne weather radar equipment whenever such aeroplane is being operated by night or in IMC in areas where thunderstorms or other potentially hazardous weather conditions, regarded as detectable with airborne weather radars, may be expected to exist along the route.".

4.1 Proposal to amend regulation 121.08.27:

"**General**
121.08.27 (1) The regulations in this Division shall apply to –

(a) the operator of a Class B aeroplane that does not comply with the performance operating instructions prescribed in Division Two; and

(b) the operator of a Class D aeroplane.

(2) Notwithstanding the provisions of sub-regulation (a),an operator who operates such aeroplane at the time this amended regulation comes into operation, under performance operating limitations approved by the Commissioner in the past, may continue to do so. Such performance operating limitations need not to be more restrictive than those prescribed in this Division.

(3) The operator of a Class D aeroplane shall ensure that, for determining ompliance with the requirements prescribed in this Division, the approved performance data in the aeroplane flight manual referred to in regulation 121.04.4 is supplemented, as necessary, with other approved data if the approved performance data in such aeroplane flight manual are insufficient."

(4) The operator of a Class D aeroplane shall not use such aeroplane for the provision of any scheduled public air transport service unless a Class B or Class C aeroplane is available as a back-up in case the provisions of sub-regulation (5) cannot be met.

(5) The operator of a Class D aeroplane, carrying passengers, shall not operate such aeroplane under IMC or above more than three eighths of clouds within a radius of five nautical miles of the aeroplane, unless-

(a) the latest weather reports or forecasts, or any combination of them, indicate that the weather along the planned route (including take-off and landing), with due regard for the provisions of regulation 121.08.30, allows flight under VFR under the ceiling (if a ceiling exists) and that the weather is forecast to remain so until at least one hour after the estimated time of arrival at the destination; and

(b) a descent can be made under VFR if the aeroplane's engine fails.".

4.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 121.02.1(6) and the proposed insertion of new sub-regulations 121.02.1(7), 121.05.3(1)(l), 121.05.3(6) and 121.09.2(5) to (7), which provide for the operation of Class D aeroplanes under IFR and with a single-pilot in cargo-only operations; and to ensure that a Class D aeroplane is not used in an scheduled air service, as regularity cannot be guaranteed.

4.3 Current regulation

"(1) The operator of a Class D aeroplane shall not operate the aircraft –

(a) by night;

(b) in IMC, except –

(i) under special VFR;

(ii) in accordance with the requirements of sub-regulation (2); or

(iii) when conducting a cargo-only flight.

"(2) Notwithstanding the requirements of sub-regulation (1), single-engine aircraft with an approved passenger seating configuration of maximum nine passengers may conduct operations in IMC conditions or without visual reference to the ground, provided they meet the requirements in SA-CATS-OPS 121.08.1.

"(3) The operator of a Class D aeroplane shall ensure that, for determining compliance with the requirements prescribed in this Division, the approved performance data in the aeroplane flight manual referred to in regulation 121.04.4 is supplemented, as necessary, with other approved data if the approved performance data in such aeroplane flight manual are insufficient.".

5.1 **Proposal to insert new sub-regulations 121.09.2(5), (6) and (7): (Aeroplane maintenance schedule)**

"(5) The operator of a large commercial air transport Class D aeroplane, carrying passengers under IFR, shall include in the schedule, referred to in sub-regulation (1) –

(a) either the manufacturer's recommended engine trend monitoring programme, which includes an oil analysis, if appropriate; or

(b) an engine trend monitoring programme, approved by the Commissioner, that includes an oil analysis at each 100 hours interval or at the manufacturer's suggested interval, whichever is more frequent.

"(6) The results of each test, observation, and inspection, required by the applicable engine trend monitoring programme prescribed by sub-regulation (5) shall be recorded and maintained in the engine maintenance records;

"(7) The schedule shall contain, in respect of any aeroplane referred to in sub-regulation (5), written maintenance instructions containing the methods, techniques, and practices necessary to maintain the equipment specified in sub-regulation 121.05.3.".

5.2 Motivation

To provide for engine health monitoring in respect of large commercial air transport Performance Class D aeroplanes, operated with passengers under IFR.

5.3 Current regulation

The proposal is for the insertion of three new sub-regulations into the relevant regulation.

SCHEDULE 4

1.1 Proposed amendment of sub-regulation 127.02.1(8) and the insertion of a new sub-regulation (9), while renumbering the current sub-regulation (9) as sub-regulation (10):

"(8) A helicopter, referred to in sub-regulation (7), may be operated by a single pilot under IFR if the following requirements are complied with:

(a) the helicopter shall be certificated and equipped for single-pilot IFR, as prescribed by Regulation 127.05.3;

(b) the operator has included in the operations manual, referred to in Regulation 127.04.2, an approved conversion and recurrent training programme for pilots, which includes the additional requirements for a single-pilot operation, as prescribed by Regulation 127.03.3;

(c) ...

(d) ...

(e) the pilot-in-command shall have completed in helicopters not less than 1 000 hours of flight time, of which –

(i) 250 hours shall be as pilot-in-command, or not less than 100 hours as pilot-in-command and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(ii) 200 hours shall be cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(iii) 30 hours shall be instrument time, of which not more than 10 hours may be acquired in a simulator; and

(f) ...

(9) Notwithstanding the provisions of sub-regulation (8), no person may operate a helicopter in a Category II or Category III operation unless the flight crew includes a properly rated second pilot.".

1.2 Motivation:

To clarify better the conditions under which a single-pilot IFR operation may be carried out.

The pilot experience requirement is based on the minimum experience required for the issue of an airline transport pilot licence. Such a licence is required for the pilot-in-command of a commercial multi-crew air transport operation. The fact that the co-pilot is replaced by stability augmentation or automatic flight control management equipment should not mean that the pilot-in-command may be less experienced.

1.3 Current regulation:

"(8) A helicopter, referred to in sub-regulation (7), may be operated by a single pilot under IFR or by night if the following requirements are complied with:

(a) the helicopter shall be certificated and equipped for single-pilot IFR or night operations;

(b) the operator has included in the operations manual, referred to in Regulation 127.04.2, an approved conversion and recurrent training programme for pilots, which includes the additional requirements for a single-pilot operation;

(c) ...

(d) ...

(e) the pilot concerned shall have a minimum of 50 hours of flight time on the specific type or class of helicopter under IFR of which 10 hours shall be as pilot-in-command; and

(f) ..."

2.1 Proposal to insert a new sub-regulation 127.03.3(6): (Conversion training)

It is proposed to insert the following sub-regulation:

"(6) The operator of a commercial air transport helicopter to be operated by a single pilot in terms of sub-regulation 127.02.1(8) shall ensure that the additional crew training is provided, as prescribed in Document SA-CATS-OPS 127.".

2.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 127.02.1(8).

2.3 Current regulation

The proposal is for the insertion of a new sub-regulation.

3.1 Proposed insertion of new paragraphs (m) to (q) into regulation 127.05.3(1): (Flight, navigation and associated equipment for helicopters operated under IFR)

"**127.05.3** (1) The operator of a commercial air transport helicopter shall not operate the helicopter in accordance with IFR, unless such helicopter is equipped with ---

(a) to (l) ...

...

(m) a power-failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;

(n) two independent sources of energy (with means of selecting either), of which at least one is an engine-driven pump or generator, each of which is able to drive all required gyroscopic instruments powered by, or to be powered by, that particular source, and installed so that failure of one instrument or source does not interfere with the energy supply to the remaining instruments or the other energy source unless, for a single-engine helicopter in all-cargo operations only, the rate-of-turn indicator has a source of energy separate from the bank and pitch and direction indicators. For the purpose of this sub-regulation (l), for multi-engine helicopters, each engine-driven source of energy must be on a different engine.

(o) if a multi-engine helicopter, at least two generators or alternators of which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the helicopter (both units may be mounted on the main rotor drive train); or

(p) if a single-engine helicopter:

(i) two independent electrical power-generating sources, each of which is able to supply all probable combinations of continuous in-flight electrical loads for required instruments or equipment; or

(ii) in addition to the primary electrical power-generating source, a stand-by battery or an alternate source of electrical power that is capable of supplying 150% of the electrical loads of all required instruments and equipment necessary for safe emergency operation of the helicopter for at least 30 minutes;

Note: For the purpose of sub-regulation (i), a continuous in-flight electrical load includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

(q) either airborne weather radar equipment, or other by the Commissioner approved equipment capable of detecting thunderstorms and other potentially hazardous weather conditions:

Provided that the provisions of sub-regulations (n) to (q) shall apply only to helicopters carrying passengers under IFR.

3.2 Motivation:

To bring the South African regulations in line with international practices in particular those of the USA, and to introduce additional safety requirements for passenger-carrying operations.

3.3 Current regulation:

The proposal is for the introduction of two new paragraphs into the relevant regulation.

4.1 Proposed insertion of new sub-regulation 127.05.3(5): (Flight, navigation and associated equipment for helicopters operated under IFR)

127.5.3 (5) When a commercial air transport helicopter is operated with a single pilot in terms of sub-regulation 127.02.1(8) while carrying passengers under IFR, the helicopter shall furthermore be equipped with –

(a) IFR-approved area navigation equipment that provides immediate identification and heading to the nearest suitable aerodrome;

(b) an approved stability augmentation or automatic flight control management system; and

(c) if the helicopter is fitted with a turbo engine–

(i) an auto-ignition system or use of continuous ignition during take-off, landing and flight during heavy precipitation; and

(ii) a manual throttle that bypasses the governing section of the fuel control unit, and permits continued unrestricted operation of the engine in the event of a fuel control unit failure.".

4.2 Motivation

To bring South African regulations in line with international practices, and in particular with the US Federal Aviation Rules, which were promulgated following an intensive study of the safety and economic benefits of allowing single-engine aircraft to be operated under IMC/IFR, arguments and benefits that are equally true for the South African situation.

4.3 Current regulation

The proposal is for the insertion of a new sub-regulation.

5.1 Proposal to insert new sub-regulation 127.08.13(3)(General)

"(3) The operator of a Class 3 helicopter, carrying passengers, shall not operate such helicopter under IMC or above more than three eighths of clouds within a radius of five nautical miles of the helicopter, unless-

(*a*) the latest weather reports or forecasts, or any combination of them, indicate that the weather along the planned route (including take-off and landing), with due regard for the provision of regulation 127.08.15, allows flight under VFR under the ceiling (if a ceiling exists) and that the weather is forecast to remain so until at least one hour after the estimated time of arrival at the destination; and

(b) a descent can be made under VFR if the helicopter's engine(s) fail(s).".

5.2 Motivation

To clarify under what conditions a Class 3 helicopter, carrying passengers, may operate under IMC or above clouds.

5.3 Current regulation

The proposal is for the insertion of a new sub-regulation.

6.1 Proposal to insert new sub-regulations 127.09.2(5), (6) and (7): (Helicopter maintenance schedule)

"(5) The operator of a commercial air transport Class C helicopter, to be operated under IFR while carrying passengers, shall include in the schedule, referred to in sub-regulation (1) –

(a) either the manufacturer's recommended engine trend monitoring programme, which includes an oil analysis, if appropriate; or

(b) an engine trend monitoring programme, approved by the Commissioner, that includes an oil analysis at each 100 hours interval or at the manufacturer's suggested interval, whichever is more frequent.

"(6) The results of each test, observation, and inspection, required by the applicable engine trend monitoring programme prescribed by sub-regulation (5) shall be recorded and maintained in the engine maintenance records;

"(7) The schedule shall contain, in respect of any helicopter referred to in sub-regulation (5), written maintenance instructions containing the methods, techniques, and practices necessary to maintain the equipment specified in regulation 127.05.3.".

6.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 127.02.1(8).

6.3 Current regulation

The proposal is for the insertion of new sub-regulations into the relevant regulation.

SCHEDULE 5

1.1 Proposed amendment of sub-regulation 135.02.1(6) and the insertion of a new sub-regulation (7), while renumbering the current sub-regulation (7) as sub-regulation (8): (Composition of flight crew)

"(6) For operations under IFR or by night in a small commercial air transport aeroplane, an operator shall ensure that the minimum flight crew includes a properly rated second pilot: Provided that a single-pilot operation with a Class D aeroplane is allowed if –

(i) the aeroplane has been certificated and is equipped for single-pilot IFR operation, as prescribed by Regulation 135.05.3;

(ii) the operator has included in the operations manual, referred to in Regulation 135.04.2, an approved conversion and recurrent training programme for pilots, which includes the additional requirements for a single-pilot operation, as prescribed by Regulation 135.03.3; and

(iii) the pilot-in-command shall have completed in aeroplanes not less than 1 500 hours of flight time, of which –

(aa) 250 hours shall be as pilot-in-command, or not less than 100 hours as pilot-in-command and the necessary additional flight time as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(bb) 200 hours shall be cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command;

(cc) 75 hours shall be instrument time, of which not more than 30 hours may be acquired in a simulator;

(dd) 100 hours shall be night flight time as pilot-in-command or as co-pilot; and

(ee) not more than 100 hours may be acquired in a simulator, of which not more than 25 hours shall have been acquired in a flight procedure trainer or a basic instrument flight trainer.

"(7) Notwithstanding the proviso to sub-regulation (6), no person may operate an aeroplane in a Category II or Category III operation unless the flight crew includes a properly rated second pilot.".

1.2 Motivation:

To bring South African regulations in line with FAA practices, and to remove the variance between reciprocating- and turbo-powered aeroplanes, and the

ambiguity recently introduced by the amended regulation 135.08.17 and its technical standard.

The pilot experience requirement is based on the minimum experience required for the issue of an airline transport pilot licence. Such a licence is required for the pilot-in-command of a commercial multi-crew air transport operation. The fact that the co-pilot is replaced by an autopilot should not mean that the pilot-in-command may be less experienced.

1.3 Current regulation:

"(6) For operations under IFR or by night in a small commercial air transport turbo-propeller or turbo-jet aeroplane, an operator shall ensure that the minimum flight crew is two pilots".

2.1 Proposal to insert a new sub-regulation 127.03.3(6): (Conversion training)

"(6) The operator of a commercial air transport helicopter to be operated by a single pilot in terms of sub-Regulation 127.02.1(8) shall ensure that the additional crew training is provided, as prescribed in Document SA-CATS-OPS 127.".

2.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 127.02.1(8).

2.3 Current regulation

The proposal is for the insertion of a new sub-regulation

3.1 Proposed insertion of new paragraphs (k) to (o) into regulation 135.05.3: (Flight, navigation and associated equipment for aeroplanes operated under IFR)

"**135. 05.3** (1) The operator of a small commercial air transport aeroplane shall not operate the aeroplane in accordance with IFR, unless such aeroplane is equipped with ---

(a) to (j) ...

...

(k) a power-failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;

(l) two independent sources of energy (with means of selecting either), of which at least one is an engine-driven pump or generator, each of which is able to drive all required gyroscopic instruments powered by, or to be powered by, that particular source, and installed so that failure of one instrument or source does not interfere with

the energy supply to the remaining instruments or the other energy source unless, for a single-engine aeroplane in all-cargo operations only, the rate-of-turn indicator has a source of energy separate from the bank and pitch and direction indicators. For the purpose of this sub-regulation (l), for multi-engine aeroplanes, each engine-driven source of energy must be on a different engine.

(m) if a multi-engine aeroplane, at least two generators or alternators, each of which is on a separate engine, of which any combination of one-half of the total number are rated sufficiently to supply the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aeroplane; or

(n) if a single-engine aeroplane:

(i) two independent electrical power-generating sources, each of which is able to supply all probable combinations of continuous in-flight electrical loads for required instruments or equipment; or

(ii) in addition to the primary electrical power-generating source, a stand-by battery or an alternate source of electrical power that is capable of supplying 150% of the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aeroplane for at least one hour;

For the purpose of sub-regulation (i), a continuous in-flight electrical load includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

(o) if a non-pressurised aeroplane, either airborne weather radar equipment, or other by the Commissioner approved equipment capable of detecting thunderstorms and other potentially hazardous weather conditions:

Provided that the provisions of sub-regulations (l) to (o) shall apply only to aeroplanes carrying passengers under IFR.".

3.2 Motivation:

To bring the South African regulations in line with international practices in particular those of the USA, and to introduce additional safety requirements for passenger-carrying operations.

3.3 Current regulation:

The proposal is for the introduction of additional paragraphs into the relevant regulation.

4.1 Proposed insertion of new sub-regulation 135.05.3(3): (Flight, navigation and associated equipment for aeroplanes operated under IFR)

135.5.3 (1) ...

(2) ...

(3) In the case of a Performance Class D aeroplane, operated with a single pilot in terms of sub-Regulation 135.02.1(6) while carrying passengers under IFR, the aeroplane shall furthermore be equipped with –

(a) IFR-approved area navigation equipment that provides immediate identification and heading to the nearest suitable aerodrome;

(b) an approved operative auto-pilot system, capable of operating the aircraft controls to maintain flight and manoeuvre it about the three axis; and

(c) if the aeroplane is fitted with a turbo engine–

(i) an auto-ignition system or use of continuous ignition during take-off, landing and flight during heavy precipitation; and

(ii) a manual throttle that bypasses the governing section of the fuel control unit, and permits continued unrestricted operation of the engine in the event of a fuel control unit failure.".

4.2 Motivation

To bring South African regulations in line with international practices, and in particular with the US Federal Aviation Rules, which were promulgated following an intensive study of the safety and economic benefits of allowing single-engine aircraft to be operated under IMC/IFR, arguments and benefits that are equally true for the South African situation.

4.3 Current regulation

The proposal is for the insertion of a new sub-regulation.

5.1 Proposal to amend regulation 135.08.17:

"General
135.08.17 (1) The regulations in this Division shall apply to –

(a) the operator of a Class B aeroplane that does not comply with the performance operating instructions prescribed in Division Two; and

(b) the operator of a Class D aeroplane.

(2). Notwithstanding the provisions of sub-regulation (a), an operator who operates such aeroplane at the time this amended regulation comes into operation, under performance operating limitations approved by the Commissioner in the past, may continue to do so. Such performance operating limitations need not to be more restrictive than those prescribed in this Division.

(3) The operator of a Class D aeroplane shall not use such aeroplane for the provision of any scheduled public air service, unless a Class B or Class C aeroplane is available as a back-up in case the provisions of sub regulation (4) cannot be met.

(4) The operator of a Class D aeroplane, carrying passengers, shall not operate such aeroplane under IMC or above more than three eighths of clouds within a radius of five nautical miles of the aeroplane, unless-

(a) the latest weather reports or forecasts, or any combination of them, indicate that the weather along the planned route (including take-off and landing), with due regard for the provisions of regulation 135.08.20, allows flight under VFR under the ceiling (if a ceiling exists) and that the weather is forecast to remain so until at least one hour after the estimated time of arrival at the destination; and

(b) a descent can be made under VFR if the aeroplane's engine fails.".

5.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 135.02.1(6) and the insertion of new sub-regulations 135.03.3(6), 135.05.3(1)(k) to (0), 135.05.3(3), and 135.09.2(5) to (7), which provide for the operation of Class D aeroplanes at night or under IF; and to ensure that a Class D aeroplane is not used in a scheduled air service, as regularity cannot be guaranteed.

5.3 Current regulation

"(1) The operator of a Class D aeroplane shall not operate the aircraft –

(a) by night;

(b) in IMC, except –

(i) under special VFR;

(ii) in accordance with the requirements of sub-regulation (2); or

(iii) when conducting a cargo-only flight.

"(2) Notwithstanding the requirements of sub-regulation (1), single-engine aircraft with an approved passenger seating configuration of maximum nine passengers may conduct operations in IMC conditions or without visual reference to the ground, provided they meet the requirements in SA-CATS-OPS 135.08.17.".

6.1 Proposal to insert new sub-regulations 135.09.2(5), (6) and (7): (Aeroplane maintenance schedule)

"(5) The operator of a small commercial air transport Class D aeroplane, to be operated by a single pilot in terms of sub-Regulation 135.02.1(6), shall include in the schedule, referred to in sub-regulation (1) –

(a) either the manufacturer's recommended engine trend monitoring programme, which includes an oil analysis, if appropriate; or

(b) an engine trend monitoring programme, approved by the Commissioner, that includes an oil analysis at each 100 hours interval or at the manufacturer's suggested interval, whichever is more frequent.

"(6) The results of each test, observation, and inspection, required by the applicable engine trend monitoring programme prescribed by sub-regulation (5) shall be recorded and maintained in the engine maintenance records;

"(7) The schedule shall contain, in respect of any aeroplane referred to in sub-regulation (5), written maintenance instructions containing the methods, techniques, and practices necessary to maintain the equipment specified in regulation 135.03.3.".

6.2 Motivation

The amendment is consequential to the proposed amendment of sub-regulation 135.02.1(6).

6.3 Current regulation

The proposal is for the insertion of new sub-regulations.