

## Order dated 23 September 1998 pertaining to motorised microlights

NOR: EQUA9801294A

Consolidated version, 24 June 2019

[...]

### TITLE 1: GENERAL.

#### Article 1

This order sets forth the particular provisions to be met by motorised microlight aircraft (hereafter "microlights"), as defined in article 2 below, in order to be exempted from the obligation to obtain an airworthiness document authorising them to fly.

#### Article 1-1

The following terms are used for the application of this order, with the following definitions:

**Series microlight:** A series-produced microlight or a microlight assembled from a series-produced kit. For class 1, 2 and 5 microlights, the series production criterion applies to the sail, the wing or the balloon respectively.

**Reference microlight:** A microlight specially designated as a baseline by its manufacturer for the other microlights in the series.

**Unladen weight:** the weight of the complete aircraft, ready to fly, without any occupants or load. The unladen weight of each microlight is determined with:

- 1) The fixed ballast;
- 2) The unusable fuel;
- 3) Where appropriate, the maximum quantity of oil, the engine coolant and the hydraulic fluid.

**Maximum unladen weight:** the maximum substantiated value for the unladen weight of the microlight.

**Maximum weight:** the maximum substantiated weight of the microlight on take-off.

**Wing load:** the ratio of the weight of the aircraft to the wing surface area.

**Wing surface area:** a flat projection of the aircraft's wing in the line of flight, in the landing or cruising configuration, including, where appropriate, the surface area of the fuselage between the straight line linking the two leading edges to the wing root and the straight line linking the two trailing edges to the wing root. For multi-plane aircraft, for the application of this order, the wing surface area is said to be the sum total of the surface area of each wing.

**Rotor load:** the ratio of the weight of the aircraft to the rotor surface area. The surface area of the

rotor is equal to the product of the square of the diameter of the rotor by  $\pi / 4$ .

**V<sub>SO</sub>**: stall speed, if it can be reached in flight, or minimum speed in stabilised flight at maximum pitch, at which the microlight can still be controlled in the following configuration: engine idling or stopped, minimum power setting, propeller in normal take-off configuration, landing gear down, flaps in landing position, least favourable centring, maximum weight.

**V<sub>C</sub>**: (conventional speed): indicated speed, corrected by the errors due to the anemometry system.

**Maximum power**: maximum power on the drive shaft, under standard conditions at sea level, that the engine can produce when used within its declared operating limits.

The maximum power is the highest power declared by the manufacturer of the engine, irrespective of any limitations related to the use of this power.

It includes the take-off rating, if defined, and any emergency ratings.

No instructions limiting the speed of rotation, the maximum inlet pressure, or any other parameter used to control the power within the operating limits declared by the engine manufacturer, will be permitted as an acceptable means of compliance.

**Home port**: the place where the microlight is usually moored, where the authority can ask the holder of the microlight's papers to present the aircraft in order to perform the checks and surveillance specified in article 14-1 of this order.

However, for class 1 microlights, the home port can be the home address of the holder of the identification papers. In this case, the authority can ask the holder of the microlight's papers to present the aircraft in a suitable place, with a view to proceeding with the checks specified in article 14-1 of this order.

## Article 2

A microlight is a single-seater or two-seater aircraft with a light powered engine that meets one of the following class definitions:

### Class 1 (powered paragliders)

A powered paragliders is a single-engine propeller driven aircraft suspended by a supple wing system, such as a parachute or a paraglider. It meets the following technical conditions:

- the maximum power is less than or equal to 60 kW for a single-seater and 75 kW for a two-seater;
- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights can be increased by 15 kg for single-seater powered paragliders equipped with an emergency parachute, or 25 kg for two-seater powered paragliders equipped with an emergency parachute.

### Class 2 (suspended microlights)

A suspended microlight is a single-engine propeller driven aircraft with a rigid wing, under which a motor-driven trike is usually attached. It meets the following technical conditions:

- the maximum power is less than or equal to 60 kW for a single-seater and 75 kW for a two-seater;
- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights may be increased by 15 kg for single-seater suspended microlights equipped with an emergency parachute, or 25 kg for two-seater suspended microlights

- equipped with an emergency parachute, and 30kg for single-seater suspended microlights designed for use on water, or 45 kg for two-seater suspended microlights designed for use on water;
- the speed  $V_{S0}$  does not exceed a conventional speed ( $V_c$ ) of 35 knots (65 km/h).

### Class 3 (multi-axis microlights)

A multi-axis microlight is a single-engined propeller driven aircraft suspended by a fixed wing. It meets the following technical conditions:

- the maximum power is less than or equal to 65 kW for a single-seater and 80 kW for a two-seater;
- the maximum weight is less than or equal to 330 kg for a single-seater and 500 kg for a two-seater. These weights may be increased by 15 kg for single-seater multi-axis microlights equipped with an emergency parachute, or 25 kg for two-seater multi-axis microlights equipped with an emergency parachute, and 30kg for single-seater multi-axis microlights designed for use on water, or 45 kg for two-seater multi-axis microlights designed for use on water;
- the speed  $V_{S0}$  does not exceed a conventional speed ( $V_c$ ) of 38 knots (70 km/h).

### Class 4 (microlight gyrocopters)

A microlight gyrocopter meets the following technical conditions:

- a single-engine propeller driven aircraft with maximum power less than or equal to 85 kW for a single-seater and 105 kW for a two-seater;
- the maximum weight is less than or equal to 330 kg for a single-seater and 500 kg for a two-seater. These weights may be increased by 15 kg for single-seater microlight gyrocopter equipped with an emergency parachute, or 25 kg for two-seater microlight gyrocopter equipped with an emergency parachute, and 30 kg for single-seater microlight gyrocopter designed for use on water, or 45 kg for two-seater microlight gyrocopter designed for use on water;
- the rotor load at maximum weight is between 4.5 and 12 kg per m<sup>2</sup>.

### Class 5 (microlight airships)

A microlight airship meets the following technical conditions:

- the maximum power is less than 75 kW for a single-seater and 90 kW for a two-seater;
- cumulative power applies to multi-engines microlights airships;
- the volume of the helium envelope is less than or equal to 400 m<sup>3</sup>, or, for microlight airships outside the scope of the regulation (EU) 2018/1139 of the European Parliament and the Council of 4 July 2018 for any reason other than that specified in h) of Annex I of this regulation, less than or equal to 900 m<sup>3</sup>;
- the volume of the hot air balloon is less than or equal to 1200 m<sup>3</sup>, or, for microlight airships outside the scope of the regulation (EU) 2018/1139 of the European Parliament and the Council of 4 July 2018 for any reason other than that specified in h) of Annex I of this regulation, less than or equal to 2,000 m<sup>3</sup>.

### Class 6 (microlight helicopters)

A microlight helicopter meets the following technical conditions:

- a single-engine aircraft with maximum power less than or equal to 85 kW for a single-seater and 105 kW for a two-seater;
- the maximum weight is less than or equal to 330 kg for a single-seater and 500 kg for a two-seater. These weights may be increased by 15 kg for single-seater microlight helicopters

equipped with an emergency parachute, or 25 kg for two-seater microlight helicopters equipped with an emergency parachute, and 30kg for single-seater microlight helicopters designed for use on water, or 45 kg for two-seater microlight helicopters designed for use on water;

- the rotor load at maximum weight is between 8 and 20 kg per m<sup>2</sup>.

Sub-classes 1A, 2A and 3A of classes 1, 2 or 3  
(with ancillary engines)

Microlights with ancillary engines meet the following technical conditions:

- the number of seats equals one;
- the maximum power is less than or equal to 30 kW;
- the maximum weight is less than or equal to 170 kg;
- the wing load at maximum weight is less than 30 kg per m<sup>2</sup>.

The increases in maximum weight for microlights equipped with an emergency parachute or designed for use on water can be accumulated.

## **TITLE II: IDENTIFICATION.**

### **Article 3**

An identification document is issued for any microlight.

The applicant may be an individual or an organisation in possession of sufficient information pertaining to the design and build of the microlight to make the declaration required by this article to issue the identification document and the declaration of compliance required by article 5 of this order in order to receive the identification card.

The applicant provides the information describing the microlight that appears on the identification document. This information identifies the essential characteristics of the microlight, in particular regarding the weight, the engine and the speeds, required to classify it as a microlight.

For series microlights, the so-called "series" identification document is issued for a reference microlight and applies to all the aircraft in the series that share the same essential characteristics.

The requirement for a series identification document does not apply to class 1 microlights.

The applicant declares that he:

- a) Guarantees the compliance of the microlight with the description contained in the identification document;
- b) Has demonstrated compliance with the applicable technical conditions and completed the corresponding compliance demonstration programme, as per article 8 of this order;
- c) Possesses a technical file containing:
  1. All the proof of compliance with the applicable technical conditions mentioned in b;
  2. A user file.

The user file consists of a user manual and a service manual. However, for single-seater microlights other than series microlights, and if the applicant is the manufacturer of the microlight, the user file may not include the user manual.

For series identification documents, or if the applicant is not the manufacturer of the microlight, the technical file mentioned in c is sent to the Minister in charge of civil aviation to be archived, and in the event of serious incidents during use, to support the definition of the measures specified in article 13 of this article.

In other cases, the manufacturer's technical file is archived by the applicant and kept at the disposal of the Minister in charge of civil aviation.

For the application of the above provisions pertaining to the content of the user file and the transmission of the technical file, for class 1, 2 and 5 microlights, "manufacturer" refers to the manufacturer of the sail, wing or balloon respectively.

#### **Article 4**

The Minister in charge of civil aviation notifies the identification code of the microlight on the identification document.

In consideration of the applicant's declaration as per article 3 and on the strength of the description provided by the applicant, the identification document is signed and issued by the Minister in charge of civil aviation.

#### **Article 5**

The identification card of the microlight is signed and issued by the Minister in charge of civil aviation on the strength of:

- either, the identification document of the microlight, obtained as per the provisions of article 3 of this order, or a copy of the series identification document accompanied by a declaration by the holder of the document certifying that the microlight complies with the descriptive information contained in this document and the applicable technical conditions;
- the applicant's statement declaring that:

1. he possesses the user file corresponding to the identification document and, for all microlights apart from those in class 1, a weighing report.
2. the microlight is airworthy.
3. For microlights built from a kit, that the manufacturer's assembly instructions were followed;

- the declaration of the home port of the microlight.

#### **Article 5-1**

The identification card is valid for an unlimited time, provided that the card is accompanied by an acknowledgement of receipt issued within the last 24 months by the administration upon receipt of a statement by the applicant that the microlight is airworthy.

Nevertheless, identification cards with an expiry date remain valid until this date.

#### **Article 5-2**

The Minister in charge of civil aviation notifies the identification markings on the identification

card.

The identification markings include the number of the department of the home port chosen by the applicant, followed by two or three letters. These identification markings are allocated to the microlight indefinitely.

If the microlight changes its home port or if the holder of the identification card changes address, the latter must inform the Minister in charge of civil aviation within one month.

It is possible to receive identification markings on demand before buying a microlight, so that the manufacturer can put it on the microlight.

### **Article 5-3**

The following special provisions apply to class 1 and 5 microlights and to their sub-classes:

- a) The provisional identification markings specified in article 9 can be kept when the definitive identification card is received, provided that it does not contain the letter W;
- b) It is possible for a user to receive identification markings on demand before buying a microlight, so that the manufacturer can mark it on the microlight.

### **Article 6**

When a microlight is sold, the holder of the identification card sends the following information to the new applicant:

- a) The identification card, with the mention "cédé" and the date of sale;
- b) A declaration of the state of the microlight regarding its airworthiness;
- c) The identification document of the microlight;
- d) The user file, which consists of the following for all microlights:
  1. A user manual;
  2. A service manual;
- e) The weighing report, except for class 1 microlights.

The former holder of the identification card informs within two weeks the authority that issued the identification card of the sale by a registered letter with acknowledgement of receipt.

The new identification card is signed and issued by the Minister in charge of civil aviation, in view of the previous identification card, the corresponding identification document and a declaration of the applicant, as per article 5.

The previous identification card remains valid for one month after the date when the microlight is sold.

### **Article 7**

Microlights are not authorised to fly without the following markings under the wings or on the structure:

- a) The identification markings, or
- b) The provisional identification markings, or
- c) The manufacturer's identification markings.

These markings, without any decorations, and at least 50 centimetres high, are clearly legible.

If the dimensions of the microlight do not allow for markings of a height of at least 50 centimetres, they must be as large as possible and not smaller than 15 centimetres in height.

As an exemption to the above provisions:

- the manufacturer's markings are optional for class 1 and 5 microlights;
- the letter W in the provisional markings is optional for class 1 and 5, and sub-class 2A and 3A microlights.

### **TITLE III: DEMONSTRATION OF COMPLIANCE.**

#### **Article 8**

The purpose of the design file and the flight and ground tests is to test all the elements pertaining to safety and to cover all the intended uses of the microlight.

These demonstrations are conducted according to a minimal programme defined by the Minister in charge of civil aviation.

The report on this programme is attached to the manufacturer's technical file.

#### **Article 8-1**

The Minister in charge of civil aviation can impose substantiations and special flight and ground tests to cover particular uses or characteristics of the microlight, in particular for class 2 or 3 microlights with wing loads at maximum weight higher than  $30 \text{ kg/ m}^2$ , for class 6 microlights and for microlights equipped with one or more devices, such as a variable-pitch propeller, a retractable undercarriage or an emergency parachute, or for class 3 microlights used to tow gliders.

#### **Article 8-2**

With the exception of class 1, the maximum unladen weight and the maximum weight are chosen such that the maximum weight is between the following two limits:

- a) a lower limit equal to the sum total of:
  - 1) the maximum unladen weight;
  - 2) the total weight of one or two occupants, or 86 kg for a single-seater, or in the sub-classes, a weight adapted to the user chosen by the manufacturer, and 156 kg for a two-seater; and
  - 3) with the exception of electrically-powered microlights, a fuel weight equal to:
    - i) for classes 2 and 5, the weight of fuel corresponding to a minimum of one hour's flight;
    - ii) for classes 3, 4 and 6, the weight of the fuel corresponds to the lower of the values of the maximum capacity of the tank and 30 litres for a single-seater and 45 litres for a two-seater;
- b) An upper limit equal to the lowest of the following weights:
  - 1) the limit of the maximum weight resulting from the application of article 2;
  - 2) the maximum design weight, at which compliance with all the technical conditions applicable to the strength of the structure was demonstrated; or
  - 3) the maximum weight, at which compliance with all the technical conditions applicable to the flight qualities and the performance of the microlight was demonstrated.

For the application of paragraph a)3) of this article, the density chosen for two-stroke mixtures or gasoline is 0.7, and that for turboshaft engine fuel or diesel is 0.8.

For class 1 microlights, the maximum weight is chosen such that it is lower than or equal to the lowest of the following weights:

- 1) the limit of the maximum weight resulting from the application of article 2;
- 2) the maximum design weight, at which compliance with all the technical conditions applicable to the strength of the structure was demonstrated; or
- 3) the maximum weight, at which compliance with all the technical conditions applicable to the flight qualities and the performance of the microlight was demonstrated.

#### **Article 9**

Flight tests are conducted with only the pilot onboard, either with a provisional identification card, or with a manufacturer's identification card.

#### **TITLE IV: MODIFICATIONS.**

#### **Article 10**

Any modification affecting any of the descriptive information in the identification document is considered to be a major modification.

#### **Article 11**

In the event of a major modification, the validity of the identification card is suspended until the modification has been declared in accordance with this article.

However, in the event of a modification specified by the manufacturer on the identification document to which the identification card of the microlight refers, the card holder is exempted from the declaration stipulated in this article, if the conditions of installation of the modification defined by the manufacturer are met.

In the event of a major modification, the identification card holder declares the airworthiness of the modified microlight and sends this declaration to the authority that issued the identification card within two weeks.

The following are attached to the declaration:

- the identification of the modified descriptive elements;
- the updated weighing report.

In the event of a major modification specified by the manufacturer who obtained, for the modified reference microlight, a revision of the identification document or a new identification document, the declaration of airworthiness includes a certification that the conditions of installation of the modification defined by the manufacturer have been met and that any modifications to the user file by the manufacturer have been received.

The declaration of airworthiness of the modified microlight results in the issue of a new identification card referring to the new or revised identification document.

The previous identification card remains valid for two months after the date of the declaration of airworthiness of the modified microlight, provided that it is accompanied by a copy of this declaration.

In other cases of major modifications, the declaration of airworthiness includes a declaration of



compliance with the applicable technical conditions and the corresponding substantiation is archived by the applicant and kept at the disposal of the Minister in charge of civil aviation.

The declaration of airworthiness of the modified microlight is linked to the identification card and they are always produced together.

#### **Article 11-1**

In the event of a non-major modification, the microlight is only used for the purposes of test flights until the holder of the identification card has made sure that the modified microlight is airworthy and, in particular, that it meets the applicable technical conditions.

### **TITLE V: USE.**

#### **Article 12**

Microlights are used and maintained in accordance with their user file.

Only flights according to the daytime visual flight rules (VFR) are authorised.

Public air transport flights, with the exception of the local flights defined in paragraph III of article R. 330-1 of the French civil aviation code, are forbidden.

#### **Article 12-1**

The towing of gliders, other than those complying with the definition in the order of 7 October 1985 pertaining to the use of ultralight gliders, is only authorised for multi-axis microlights used by organisations duly authorised by the Minister in charge of civil aviation.

The organisation provides the Minister in charge of civil aviation with a manual describing all the measures it has taken to protect the safety of the towing aircraft and the towed aircraft. In particular, the manual contains the definition, selection and limitations of the acceptable aircraft, their conditions of maintenance, the training and skills of the pilots of the towing aircraft and the appropriate operating procedures. The applicable requirements and the standard content of this manual are defined in the annex of this order.

The organisation declares that it agrees to follow all these provisions at all times and keeps the corresponding proof at the disposal of the Minister in charge of civil aviation.

It sends an annual report of its glider-towing activity with microlights to the Minister in charge of civil aviation.

#### **Article 12-2**

The Minister in charge of civil aviation can suspend the authorisation of the organisation overseeing the towing of gliders for safety reasons.

#### **Article 13**

The Minister in charge of civil aviation can impose operational or airworthiness instructions specifying verifications, modifications or limits of use for safety reasons.

#### **Article 14**

Microlights can only fly if they are airworthy, i.e., if, at all times:

a) The general technical design conditions, applicable on the date when the identification card was

first signed, are met;

- b) Any special technical design conditions notified by the Minister in charge of civil aviation are applied;
- c) The microlight complies with the description in its identification document;
- d) Any modifications have been made in accordance with this order;
- e) The particular rules established by the Minister in charge of civil aviation in the form of operational instructions or airworthiness instructions are obeyed;
- f) The microlight has been maintained in accordance with its maintenance manual;
- g) The microlight has been repaired following an incident or accident;
- h) Experience has not shown that the microlight poses any risks or serious dangers that were not foreseen when the identification card was signed.

The Minister in charge of civil aviation can declare that a microlight is not airworthy:

1. In the cases specified above, or
2. When the holder of the identification card does not present the microlight at the request of the Minister in charge of civil aviation, or
3. When the holder of the identification card does not fulfil the obligation to provide information on the airworthiness and the use of the microlight, as required by the applicable regulatory provisions.

In this case, the holder of the identification card is informed directly in writing by the Minister in charge of civil aviation. The non-airworthiness of the microlight can be annotated directly on the identification card.

#### **Article 14-1**

The Minister in charge of civil aviation can perform, or can call on duly qualified organisations to perform, verifications and surveillance that it deems to be necessary to ensure that a microlight meets the conditions of this order.

### **TITLE VI: EXECUTION.**

#### **Article 15**

The conditions of application of this order are specified in an instruction from the Director General of Civil Aviation.

#### **Article 16**

- I. The amended order of 17 June 1986 pertaining to authorisation to fly of microlights have been abrogated.
- II. Temporary measures:
  - a) The reference forms in the manufacturer's technical file and the identification documents issued before the introduction of this order dated 24 June 2019 are deemed to be identification documents issued in accordance with this order.

In particular, they allow new identification cards to be issued in accordance with article 5.

- b) Modifications made to a microlight and declared before the introduction of this order dated 24 June 2019, in accordance with the applicable regulations on that date, are deemed to have

been made and declared in accordance with this order.

c) For the issue of a series identification document for a microlight derived from a microlight covered by a reference form in the manufacturer's technical file or an identification document issued before the introduction of this order dated 24 June 2019 the requirements of article 8-2 of this order can be replaced by those of III of this article, provided that the limitations of IV in this article are respected.

c) For the declaration of a major modification of a microlight covered by a reference form in the manufacturer's technical file or an identification document issued before the introduction of this order dated 24 June 2019, or in accordance with c) of II in this article, the requirements of article 8-2 of this order can be replaced by those of III of this article, provided that the weight limitations contained in IV in this article are respected.

III. Alternative provisions to article 8-2 of this order, in the cases specified in II of this article:

The maximum unladen weight and the maximum weight are chosen such that the maximum weight is between the following two limits:

- a) a lower limit equal to the sum total of:
  - 1) the maximum unladen weight;
  - 2) the total weight of one or two occupants, or 86 kg for a single-seater, or in the sub-classes, a weight adapted to the user chosen by the manufacturer, and 156 kg for a two-seater; and
  - 3) with the exception of electrically-powered microlights, a fuel weight corresponding to a minimum of one hour's flight;
- b) An upper limit equal to the lower of the following weights:
  - 1) the maximum design weight, at which compliance with all the technical conditions applicable to the strength of the structure was established; or
  - 2) the maximum weight, at which compliance with all the technical conditions applicable to the flight qualities and the performance of the microlight was established.

For the application of paragraph a)3) of this paragraph, the density chosen for two-stroke mixtures or gasoline is 0.7, and that for turboshaft engine fuel or diesel is 0.8.

IV. Weight limitations replacing those in article 2 of this order, applicable in the cases specified in II of this article:

For class 1:

- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights may be increased by 5% for microlights equipped with an emergency parachute.

For classes 2 and 3:

- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights may be increased by 5% for microlights equipped with an emergency parachute, or 10% for microlights designed for use on water;
- the stall speed or the minimum constant flight speed in landing configuration (V<sub>SO</sub>) does not exceed 35 knots (65 km/h) in conventional speed (V<sub>c</sub>).

For class 4:

- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights may be increased by 5% for microlights equipped with an emergency parachute, or 10% for microlights designed for use on water.

For class 6:

- the maximum weight is less than or equal to 300 kg for a single-seater and 450 kg for a two-seater. These weights may be increased by 10% for microlights designed for use on water.

Where appropriate, the increases in maximum weight for microlights equipped with an emergency parachute or designed for use on water cannot be accumulated.

[...]

**Signed on 23 September 1998 and modified by Order signed on 24 June 2019**

Courtesy translation ONLY

## Annex

### REQUIREMENTS AND COMPOSITION OF A MANUAL TO TOW A GLIDER WITH A MICROLIGHT

To receive authorisation by the Minister in charge of civil aviation, the organisation meets the following requirements:

#### A.-Selection of the towing microlights

The organisation checks that the microlights it has selected for towing operations meet the following conditions:

- the microlight's user file specifies towing activities and the corresponding limitations (the maximum weight of the towed gliders in particular);
- the holder of the identification document of the microlight has certified that it complies with the additional technical conditions specific to the usability of a microlight for towing gliders. If the holder of the identification document had not foreseen towing activity, a major modification is established for the microlight in question with the corresponding certification.

#### B.-Maintenance of the towing microlights

The aircraft is maintained according to a maintenance plan drawn up in accordance with:

- the user file of the microlight;
- any recommendations made by the organisation performing the maintenance;
- any recommendations on the maintenance of the engine or specific parts related to towing (hooks, reel, cable, etc.).

The organisation is entirely responsible for establishing this programme. It is not subject to acceptance by the authority.

#### C.-Towing pilots

The towing pilots meet the following conditions:

- hold a licence to fly the class of microlight in question;
- hold a glider pilot's licence;
- have flown a glider as a captain for at least 50 hours and passed a microlight flight test before starting training in towing gliders, delivered by an instructor designated by the organisation;
- have followed the minimal training in accordance with the programme described in paragraph D of this annex. In particular, the training programme sets the skills targets corresponding to the specifics of towing gliders in a microlight. In-flight training is delivered by a pilot who is qualified as an instructor for multi-axis class microlights, has the qualification to tow gliders on their microlight pilot's licence and is qualified as a glider pilot instructor. Pilots who have followed special training in towing gliders in accordance with paragraph 2.7.3 of the order of 31 July 1981 must follow training adapted to the specifics of towing in a microlight, as specified by the organisation. After the training, the qualified instructor issues a certificate of fitness to tow gliders, which is mentioned on the microlight pilot's licence in the form of an additional authorisation, under the conditions specified in

4.5.2.4 of the order of 31 July 1981;

-follow the refresher training, as described and provided by the organisation.

The organisation takes internal measures allowing it to keep track of the flying hours for the initial and the refresher training.

D.-Training in towing gliders

The content of the training includes:

## 1. Theoretical knowledge

### *1.1. Aviation medicine*

Pilot fatigue due to the conditions of use of the microlight.

### *1.2. Regulations*

Pilots.

The microlight user file.

The towing system.

Air traffic.

### *1.3. Limitations of use*

Limits of the microlight/glider weight ratio.

The corresponding engine limitations.

Minimum and maximum hitching speeds in view of the respective performances of the microlight and the glider.

Engine potential.

### *1.4. Performances*

Performances of the tow system on take-off and when climbing, in view of all the parameters (speed, pitch, centring). Use of the flaps.

Optimal flight paths (distance from the airfield according to altitude).

### *1.5. Towing systems and manoeuvres associated with their use.*

Hook, release handle cable, rear view mirror, reel.

Use of conventional signs.

### *1.6. Emergency and safety manoeuvres.*

Appropriate use of signals.

Operations to be performed in the following cases: accidental release, engine failure, faulty release.

### *1.7. Special cases*

Convoy flight.

Multiple towing.

## 2. Practical instruction.

### *2.1. Collision prevention.*

In all flight phases.

## *2.2. Ground manoeuvres.*

Particularities of the pre-flight inspection.

Positioning the microlight, the cable and the corresponding checks.

Alignment of the microlight.

Taxiing and take-off.

## *2.3. Climbing.*

Consideration of the parameters allowing for the best flight path.

Observation of the towed glider.

Search for a release zone according to the aerology and the weather.

Choice of overflight zones to limit nuisances.

## *2.4. Release.*

Sequence of operations.

Possible use of a reel.

## *2.5. Descent.*

Optimal flight path and integration in the circuit.

Engine control.

## *2.6. Landing.*

### *2.6.1. With a cable.*

Offset of the approach plane and the landing point relative to the runway threshold.

Possible use of a reel without a cable.

### *2.6.2. Without a cable.*

Releasing the cable.

Approach procedure.

## *2.7. Emergency and safety manoeuvres.*

Appropriate use of signals.

Operations to be performed in the following cases: abnormal glider or towing gear configurations, procedure when the glider cannot be released.

## *2.8. Special cases*

Convoy flight.

## E.-Operating procedures

The organisation provides the personnel concerned with all the instructions and information required to perform the towing activity in complete safety.

In particular, the organisation shall ensure that the microlights are airworthy, that they have a valid identification card and that they are used in keeping with the normal procedures, the emergency procedures and within the limits of their user file.

## F.-Manual for towing gliders with microlights

The organisation provides the DSAC with a manual containing at least the following information:

## 1. A description of the organisation

The internal organisation (structure of the organisation, organisation if there are several operations bases, director and delegations of authority).

Human resources (functions required for the administrative personnel, pilots and maintenance staff).

Material resources (in particular, the premises, microlights and gliders).

## 2. Towing microlights.

For each type of towing microlight:

The part of the user file covering towing and the corresponding limitations.

A copy of the certificate of compliance with the additional technical conditions specific to the usability of a microlight for towing gliders.

## 3. Towing pilots

The minimal skills of towing pilots required by the organisation.

The minimal skills of instructor pilots required by the organisation to give training in towing.

The towing training programme.

The refresher training programme.

## 4. Operating procedures

All the instructions and information required to perform the towing activity in complete safety.

All local restrictions (e.g., aerology).

Courtesy translation ONLY