



ANNEXE **STOL**

MICROLIGHTS

WEIGHT SHIFT CONTROL, MOVABLE AERODYNAMIC
CONTROL & AUTOGYRO



TABLE OF CONTENTS

I.	PRESENTATION AND PECULIARITIES OF STOL	3
II.	DEFINITIONS, REGISTRATIONS & TERMS	4
A.	PILOTS	4
1.	French pilots and/or who have a Microlight identified in France	4
2.	Foreign pilots	5
3.	Arrival procedures	5
4.	Pilots' equipment	5
5.	Support and technical assistance during the competition	5
B.	SUPERVISION	6
6.	Pilot briefing	6
7.	Microlights coordination: on the ground and in flight	6
8.	Competition proceeding and safety aspects	6
9.	Radio frequencies	6
10.	Marshall safety on the ground	6
C.	AIRCRAFTS	7
11.	Control of each aircraft	7
12.	Fuel	7
D.	CONDITIONS	7
13.	Weather	7
14.	Parking	7
15.	Presence of visitors on STOL zones, maneuvering areas and traffic	8
16.	Holding point management	8
17.	In the event of an accident	8
E.	FLYING	8
18.	Aircraft carrier deck	8
19.	Take-off	9
20.	Landing	9
21.	Management of not stabilized or interrupted/missed approaches	9
F.	SCORING	10
22.	NATIONAL ranking of the French STOL Microlights Championship	10
23.	Penalties	10
24.	Pools and results	11
25.	Podium	11
III.	MANAGEMENT AND ORGANIZATIONAL TEAM	12
IV.	FACT SHEETS	12
V.	TASKS CATALOG: SUMMARY of REGULATIONS - STOL	13

I. PRESENTATION AND PECULIARITIES OF STOL

The **French Microlight Federation (FFPLUM)**, within the framework of its public service delegation from the Ministry of Sports, oversees two ULM sports practices: **Paramotor** (Class 1) and **Microlights** (Classes 2, 3, and 4).

STOL (Short Takeoff and Landing) is one of the disciplines within Microlight practices.

The objective of the discipline is for the pilot & aircraft to achieve the shortest combined takeoff and landing distances from the aircraft carrier's deck start line.

The flights take place on an aerodrome or an ULM base and in the pattern vicinity, in the form of a sports and technical piloting demonstration.

The ranking is made by adding the best take-off and landing distances of each microlight. The lowest total is targeted.

NAMES & ABBREVIATIONS used in this document:

- **ORGANIZER:** In charge of organizing the competition in the various aspects: sporting, security, equipment and welcoming the public (CLUBS and/or REGION).
- **SITE MANAGER:** Person in charge of operating the facilities (aerodrome or ULM base).
- **FFPLUM:** Federation Française d' ULM – French Microlight Federation
- **FFPLUM OFFICIAL:** Referent in charge of accompanying, helping and controlling the preparation and conduct of the competition in accordance with the rules as well as the issuance of titles.
- **RACE DIRECTOR** (Directeur de Course - **DC**): Person validated by the FFPLUM to supervise the official competition in sporting aspects. Supervises the teams in charge of running the events, measuring the performance and co-hosting briefings.
- **FLIGHT COORDINATOR** (Coordinateur Des Vols - **CDV**): In large-scale sites or facilities, this position can be activated with specific functions under the direction of the DC. Person responsible for communicating important information to competitors on the ground and in flight depending on the situation. He/she also provides information to visiting air traffic around the competition aerodrome to make the competition area safe.
- **STARTER:** Person responsible for giving the start on the white start-line. He is the technical referent and validates the take-off and landing distances recorded by the referees.
- **PARKER:** Person responsible for managing the flow of microlights on the ground. He/she guarantees good traffic flow on the ground. Competing pilots receive his/her instructions to taxi during the competition.
- **MARSHAL:** Responsible for recording the ground distances of pilot performances.
- **SCRIPT:** Person who write down pilot's performances in real time to remedy a computer failure.
- **SCORING:** Person in charge of transcribing the results over time digitally.

II. DEFINITIONS, REGISTRATIONS & TERMS

■ ACCESS-STOL

The **ACCESS-STOL** category allows any licensed pilot wishing to discover STOL or an experienced STOL pilot who does not want to appear in the ranking of a competition, to practice the discipline while benefiting from the logistics and security put in place during official competitions organized by the French Microlight Federation (FFPLUM). Although their performances are measured, no ranking of pilots in the **ACCESS-STOL** category will be carried out.

It should be noted that during a competition, the presence of at least 8 competitors in the NATIONAL ranking of the French Microlights STOL Championship will be requested before accepting entries in the ACCESS STOL category.

■ French CHAMPIONSHIP “Microlights STOL”

The participation in the French Microlights (or “ULM”) STOL championship is open to any pilot and any aircraft meeting the criteria for defining a Microlight (or “ULM”) in classes 2 (Weight-Shift control – RWL1T/E), -3 (Movable aerodynamic control – RAL1T/E) and -4 (Autogyro – RGL1T/E).

The **SCRATCH-type** competition and ranking allows pilots to train and demonstrate their STOL flight skills in a controlled environment where their best performances will be recorded.

At the end of each competition and only for pilots and aircrafts meeting the defined criteria, the **NATIONAL** ranking for **the French Microlights STOL championship** will be determined from the **SCRATCH** ranking. At the end of the season and in view of the results of the **NATIONAL** ranking, the French Microlights STOL champion will be declared and the possible future France Microlights STOL team will be formed.

A. PILOTS

1. French pilots and/or who have a Microlight identified in France

Entries will be defined in the organizer's practical sheet and only those showing a complete file will be validated, i.e.:

- Identification card (“yellow card”).
- Identification sheet
- Declaration of fitness for flight of less than 2 years.
- Federal license (FFPLUM) for the current year.
- Valid insurance.
- Medical certificate of non-contraindication to microlight flying in competition valid on the day of the competition (N-1). This medical certificate is issued by a general practitioner.
An aeronautical medical certificate is accepted under the same conditions.
- Be up to date with registration participation.
- An airworthy aircraft under the conditions of the regulations, showing its race number.
A visual check of the race commissioners will be carried out before the competition and will confirm registration for the competition. The authorities present will also be able to carry out the checks in force.

2. Foreign pilots

Foreign pilots are invited to participate in STOL competitions in France under certain conditions:

- Registration must be made no later than **two weeks** before the start of the competition.
- The pilot must provide the DGAC “Permit to Fly” validation to the ORGANIZER in his registration file if his microlight does not meet the French ULM regulations.
- Aircraft documentation must be in accordance with the country of origin.
- Have a valid insurance covering competition.
- Have an up-to-date FFPLUM federal license or an up-to-date federal aeronautical license from the country of origin or an FAI competition license as well as a medical certificate of non-contraindication to microlight flying in competition or an aeronautical medical certificate.

3. Arrival procedures

Depending on the site and local rules, supplements may be imposed and communicated to participants.

- The arrival procedure must be in accordance with the Visual Approach Card (VAC) or the BASULM sheet if the competition is carried out on a microlight (ULM) airfield.
- On arrival, taxi to the parking area provided for this purpose.
- The runway in use will be indicated by the organization according to the elements of the day (see VAC map).
- After the general briefing, the participating microlights (ULM) will taxi in groups (amount to be defined) from the parking area to the STOL zone under the orders of the PARKER.
- The runway in use will be named STOL ZONE on the map.
- An area will be used for taxiing microlights (named on the map).
- An area is reserved for visitors and the public.
- During the event, the microlights participating in the competition will be parked if possible in a dedicated area “PARKING MACHINES IN COMPETITIONS”

4. Pilots' equipment

- Wearing a safety belt or harness is mandatory.
- Wearing a helmet is not mandatory but strongly recommended

5. Support and technical assistance during the competition

Competitors' assistants must comply with the instructions of the organizer and are under the responsibility of the competitor. A “public” area will welcome accompanying persons.

(Pass) + Reflecting Vests of a specific color depending on the missions and access areas.

Example: orange for the organization, blue for the competitors, assistants will have a “pass” badge.

B. SUPERVISION

6. Pilot briefing

- Before the general briefing, during the arrival check, bring your papers.
- The presence of competitors at each briefing is mandatory.
- The briefings will take place in a room dedicated to this purpose. They will be scheduled by the Race Directorate as many times as necessary.
- All procedures specific to STOL as well as safety reminders will be given at each briefing.

7. Microlights coordination: on the ground and in flight

- A frequency is dedicated to the event. It will be used by competitors both on the ground and in flight. The **STARTER** and the **PARKER** will give instructions via this frequency.
- For the air traffic of visiting Microlights, a frequency will be communicated (in accordance with the VAC or the baseulm sheet) and used for auto-information or in the rules set by the manager.
- A flight coordinator (CDV) will ensure the frequency dedicated to the arrival and departure of visitor aircrafts. It is recalled that the pilot-in-command always remains solely responsible for the conduct and continuation of his flight, in strict compliance with visual flight rules (VFR).
- Use of visual signals (flags for ground maneuvers in the STOL zone). To ensure constant spacing between the microlights, specific airfield pattern and minimum air speeds will be communicated during the briefing.

8. Competition proceeding and safety aspects

- Arrival of the competitors and verification of the documents, (recommendation under the responsibility of the pilot) preferably **the day before the competition**.
- Management of departures under the pilots' responsibility.
- Fatigue management: a resting area is provided to the competitors (briefing room or other).
- Attendance at each briefing is mandatory.
- At the end of each RUN, there must be at least 15L of gas left in the tank.

9. Radio frequencies

- **ONE** single frequency (pilots/ground). (See above)
 - Only the registration/competition number will be used and must be visible.
 - In the event of flight disruption by aircraft foreign to the competition, a flight coordinator (CDV) will act as the link between the two frequencies (competition & official airfield frequency).

10. Marshall safety on the ground

The take-off order will be given by the line judge (STARTER) using a flag as visual cue.

C. AIRCRAFTS

- The STOL competition shall be **strictly flown SOLO**.
- The “down wind” minimum speed is set to 110 km/h. For the safety of each pilot within one RUN only aircraft able to maintain this speed are permitted to participate.
- Fuel: A minimum Quantity of >15L shall be present at the end of each RUN.
- Possible off airport authorized fields or alternate airfield will be specified during the briefing and remain under the responsibility of each pilot.

11. Control of each aircraft

A control will be made with one of the marshals on the aircraft airworthiness at the beginning and during the competition.

The points checked in the presence of the pilot are:

- The general condition of the aircraft
- Fulfilling the regulation of the country of registration
- In the event of an incident, only the **Race Director** (DC) is entitled to authorize the resumption of flights. A competent technician recognized by the race management will be able to give an opinion.
- All technical aspects are under the responsibility of the pilot.
- The aircraft and pilot documents shall be able to be presented on request of the race director or the authorities (BGTA) at any time.

12. Fuel

- Fuel management remains under the responsibility of the pilot.
- The minimum fuel quantity shall allow each pilot to reach nearby installations, in particular the emergency aerodrome: see fact sheet.
- Have at least 15L of reserve in your aircraft in addition to the minimum fuel intended for the RUN. (with reference to the regulations).
- Pay attention to managing your fuel.
- The organizer shall provide a sealed parking area for participating aircrafts. The access to the area is prohibited without authorization from the Race Director. 3 devices (drawn at random) will be checked at the end of a competition event.

D. CONDITIONS

13. Weather

The DC and/or the CDV will communicate the situation and the weather minima to activate or pause the progress of the competition.

The pilot makes the decision on his own whether or not to take off.

14. Parking

- Engine start-up safety.
No unmanned engine starts will be allowed. (the penalty will be elimination).

- Taxiing is only done following the **PARKER** or **STARTER** orders.

15. Presence of visitors on STOL zones, maneuvering areas and traffic

Zones should be organized with supervised access.

Installation of barriers and access restrictions put in place by the organization.

16. Holding point management

Under the responsibility of **PARKER**.

17. In the event of an accident

In the event of an incident and the presence of a damaged microlight on the runway, the aerodrome will be inaccessible for airborne aircraft.

The DC and/or the CDV together with the organizer will organize the proceedings to ensure safety and the relay for rescue and care on the site.

If the aircraft present on the runway is not moveable, the Flight Coordinator (CDV) in conjunction with the starter (machine in competition) will organize the communication of instructions to the aircraft in flight to reach the emergency aerodrome.

A marshal will oversee relaying information to organize the return of all aircrafts.

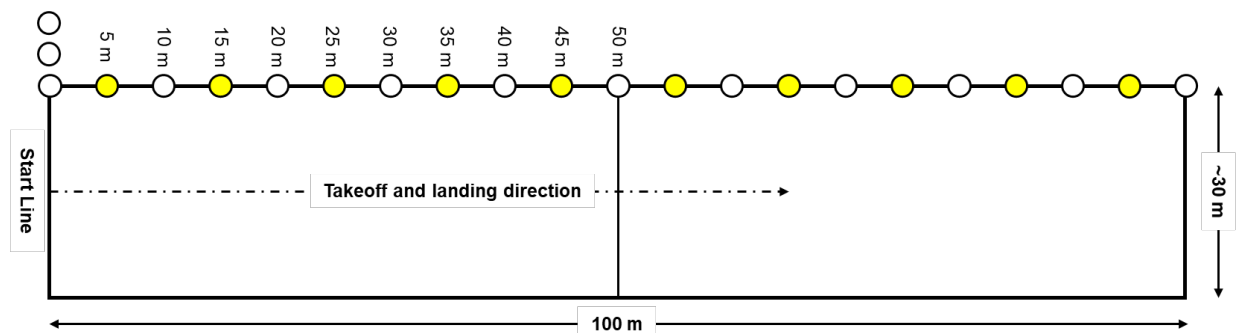
If the aircraft is moveable, a Flight Coordinator (CDV) and the **STARTER** will be responsible for providing information and spacing recommendations to organize landings under normal conditions.

Depending on the situation, the organizer and the DC and/or the CDV will organize the resumption or the official end of the competition.

E. FLYING

18. Aircraft carrier deck

- The official terrain is assimilated to an aircraft carrier deck with a maximum length of 100 meters by commonly 30 meters width and delimited by clearly visible marks (white paint, lime, small cones with 4 angles & feather flags).



- Markings are also planned every 5 and 10m to support the marshals.
- The start/finish line ("reference line") is commonly painted as a white line, typically 40 centimeters (18 in.) wide, in which measurements are marked from. On takeoff and landing, distances are measured from the **downwind** side of the line, thus taking its width into account.

- Exiting the aircraft carrier is by only order of the MARSHAL; U-turns are prohibited!
- If the aircraft leaves the aircraft carrier deck before taking off or before full stop after landing, this take-off or landing will not be validated.
- The competition follows a “zip-lip” procedure where radio communication is not needed. Nevertheless, every aircraft equipped with radio shall monitor the frequency communicated by the DC and specified during the general briefing and in the organizer's practical information sheet.

19. Take-off

- Recommendations and reminders will be communicated at each briefing.
- Taxi into position as directed by the STARTER, with main gear stopped on the start line; the main landing gear wheel axle is the point of reference.
- Begin take-off roll after the STARTER lowers down the flag. Once the aircraft starts their departure roll, the next aircraft should already have started their taxi towards the start line
- The start, acceleration, rotation, and climb are carried out along the axis of the runway.
- Steep Initial climbs must be avoided.
- **NO MAX-RATE CLIMBS:** When the wheels leave the ground, your performance is over. Any reckless maneuvers can be subject to immediately disqualification.
- No hot-dogging, low passes, sudden or abrupt maneuvers on take-off or in the pattern.

20. Landing

- Navigate, be precise in your flying and respect the airfield landing pattern!
- A landing is validated when the main landing gear touches on or after the start line. In case of a landing on the line, the main wheel axle shall be used as the reference.
- Touching the ground with the main landing gear before the start line invalidates the landing.
- For taildragger, a tailwheel touchdown prior to reference line is **NOT** invalidating a landing.
- “Go Arounds” are common real-world safety decisions. If conditions deteriorate on short approach and you are too close to the edge of the safe flight envelope, **GO AROUND!**
- Aircraft must come to a full stop with all wheels on the ground and remain stopped until the marshals have had a chance to measure the distance and wave the aircraft clear of the runway. **Do not move until cleared ahead by a MARSHAL.**
- Landing distance is measured from the **downwind** side of the start line to the nearest main landing gear wheel axle.
- If the aircraft leaves the Aircraft Carrier Deck before it comes to a full stop following the landing, the distance will not be validated.

21. Management of not stabilized or interrupted/missed approaches

No time limit is given in case a landing run needs to be repeated because of a missed approach. **Go-arounds are not sanctioned** but encouraged to avoid hazardous approaches and to ensure safety.

F. SCORING

22. NATIONAL ranking of the French STOL Microlights Championship

The NATIONAL ranking, based on the SCRATCH ranking, considers the performances achieved by each pilot during each competition of the current season, provided that the pilots meet the following criteria:

- Pilot of French nationality with an aircraft with French microlight (ULM) identification.
- Pilot of French nationality with an aircraft under foreign microlight identification but meeting the identification criteria for a French microlight (ULM).
- Pilot of foreign nationality who has his main residence in France with an aircraft with French microlight (ULM) identification.
- Pilot of foreign nationality who has his main residence in France with an aircraft under foreign microlight identification but meeting the identification criteria for a French microlight (ULM).

At the end of each competition, the points acquired are added to each competitor to feed into the national ranking by microlight (ULM) class (2, -3, -4).

Place	Points
1	25
2	18
3	15
4	12
5	11
6	10
7	9
8	8
9	7
10	6
11	5
12	4
13	3
14	2
15 and +	1

Points will be awarded to each participant according to their position, in accordance with the table above.

The points of each round are added up at the end of the season to award the title of

French Champion in each of the microlight (ULM) classes (2 or RWL1T/E, -3 or RAL1T/E, -4 or RGL1T/E)

In the event of a tie, the best place obtained during the season will separate the pilots. If the tie persists, the best performance in the final will be considered.

The following season a new ranking will start.

23. Penalties

List of general penalties applicable to the competition:

- In the event of an aerial incident involving an aircraft in flight or on the ground, only the involved aircraft can complete the competition, the pilot cannot continue with another one.

- If the aircraft is repairable, it can only fly back after repair and only with the DC authorization.
- The grid order established for each pool shall be scrupulously respected.
If a pilot is not ready to line up on the start line at the scheduled time, his turn will be declared lost and cannot be recovered unless notified by the DC.
- The organization reserves the right to disqualify any participant who would risk their safety or that of the other participants and persons on the ground.

24. Pools and results

- The training phase is open to everyone and is highly recommended.
- There is no selection by elimination!
- We want all participants to be able to fly every day.
As such, we have chosen a competition in the form of pools and a SCRATCH-type ranking.
- The qualifying pools will be determined as follows:
Pilots who have already been ranked in the NATIONAL ranking of the French Microlights STOL Championship or who have been ranked in the SCRATCH ranking during a competition in the last two seasons, will be grouped in reverse order of their performance.
For all other pilots participating for the first time or who have not competed for more than two years, their allocation order in each pool will be determined by the Race Director (DC).
- The qualifying phase is used to determine the order of passage for the final.
The pools for the finals will be made up in descending order of performance of each pilot.
- Pilots in the ACCESS-STOL category will not be allowed to participate in the final top pool (or pool "A"); During final the second pool (or pool "B") will be the first accessible for them.
- In the event of a tie in the qualifying phase, an additional run will be held to separate the competitors.
- In case of a complaint, the procedure provides for an independent commission, consisting of 3 members appointed at the general briefing by the Race Director (DC) and his team, which will study the requests.
- The fixed price for filing a claim is €50.
- In the event of an irregularity or an organizational error, this amount will be returned.

25. Podium

- The categories are mixed male/female.
- The three microlight (ULM) classes (2 or RWL1T/E, -3 or RAL1T/E, -4 or RGL1T/E) will be differentiated.
- Single-seater categories will be differentiated from two-seater categories.
- A class will get a ranking if at least 3 participants are registered and flying.
- A cup will be awarded to the winners of each microlight (ULM) class per category.
- The organizer, in agreement with the DC, may propose one or more trophies to reward participants.

III. MANAGEMENT AND ORGANIZATIONAL TEAM

- The organizing club, affiliated with FFPLUM, is responsible for organizing and running the competition and flights, as well as welcoming the crews.
- The FFPLUM is helping to formalize and support the sporting organization. Within the framework of the Sport Commission, competitions are integrated into the federal sports agenda.
- The manager of the aerodrome or the ULM base is responsible for the aeronautical infrastructure and the reception of visitors. He/She provides material logistics (barriers, markings, maintenance of the track, premises and car parks, etc.).

An organization chart will be communicated with the functions and contacts in the practical information sheet.

IV. FACT SHEETS

A practical information sheet will include all the information useful for the organization of the competition and access to competitors.

It includes general information about the organizer, the organization chart of the organizing structure during the competition as well as local specificities.

V. TASKS CATALOG: SUMMARY of REGULATIONS - STOL

The objective is for the aircraft to achieve the shortest combined takeoff and landing distances from the aircraft carrier's deck start line.

This task simulates takeoffs and landings on an aircraft carrier deck, the deck being a deck 100 meters long and at commonly 30 meters wide (see figure 1.).

The width of the deck may be adjusted to the width of the existing runway. The start line shall be clearly visible from the air.

The total length of the deck is marked with 5- and 10-meters reference markings on the side of the deck. The 50 meters mark may be symbolized by a full line on the ground across the decks' width.

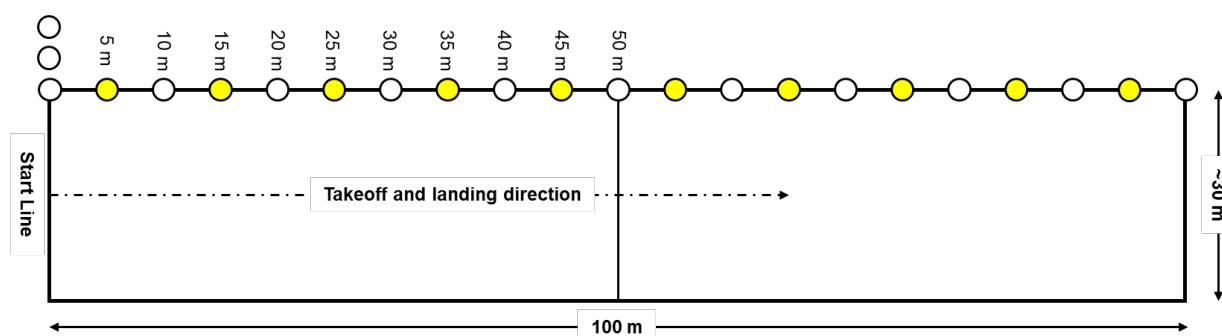


Figure 1: example of Aircraft Carrier Deck.

Each pool includes a maximum number of microlights (ULM) specified during the general briefing and in the practical sheet. A RUN consists of two airfield patterns for each pool.

The takeoff distance is measured and validated when the main wheels leave the ground and do not rebound. The exit from the aircraft carriers' deck is defined by the first element of the landing gear that leaves the boundaries of the deck.

The landing is measured and validated when the wheels of the main landing gear touch down on or after the start line and the aircraft shall come to a complete halt (full stop) within the 100 meters deck, as close to the start line of the deck as possible.

In the event of a rebound, the last touch down will be retained to measure the landing distance.

Microlight (ULM) of the class 3 or RAL1T/E will not be penalized when the tail protection (for nose draggers) or the tail wheel (for tail draggers), touches the ground before the start line. Leaving the aircraft carrier's deck at its' end (lined up) and thus landing in more than 100 meters invalidate the landing run. The deck shall be exited from its end, not from the sides, unless expressly indicated by a MARSHAL.

The score of a RUN is based on the addition of the shortest take-off distance to the shortest landing distance, recorded from both patterns. Be the best result of the RUN.

Example: TO-1=15m, Landing-1=35m, TO-2=10m, Landing-2=40m: distance withheld =45m.

This choice was made to free the pilots as much as possible from performance stress. Everyone has a second chance to do the same RUN again. The rule is common to all.