

General Policies for Permitting Test Flights, etc. for Ultralight Planes and Gyroplanes

March 22, 2002	First issue (KOKU-KU-KI-1231)
February 13, 2006	Amended (KOKU-KU-KI-1142)
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Airworthiness Division, Aviation Safety and Security Department
Japan Civil Aviation Bureau
Ministry of Land, Infrastructure, Transport and Tourism

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Circular No. 1-007

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JCAB Circular

Director, Airworthiness Division
Aviation Safety and Security Department
Japan Civil Aviation Bureau
Ministry of Land, Infrastructure, Transport and Tourism

Subject: General Policies for Permitting Test Flights, etc. for Ultralight Planes and Gyroplanes

技術審査担当官の英語表記について

Chapter I General Provisions

1-1 Purpose

This JCAB Circular aims to stipulate general policies for flight permission for ultralight planes or gyroplanes (hereinafter referred to as “ultralight planes, etc.”) under the proviso of Article 11, paragraph (1) of the Civil Aeronautics Act. (Refer to Appendix 1.)

1-2 Applicability

With regard to ultralight planes, etc. that meet the requirements stipulated in Paragraph 1-4 of this JCAB Circular, this JCAB Circular applies only to ultralight planes, etc. for which, due to their peculiarities, it is difficult to demonstrate compatibility with the standards stipulated in Article 10, paragraph (4) of the Civil Aeronautics Act as well as whose airframe structure, systems, performance, etc. are suited to flights that are intended for sports, recreations, etc. Therefore, permission will not be given to flights intended for passenger/cargo transport, chemical spraying, etc. that contradict the purpose of this intent.

However, this JCAB Circular may apply even to amateur-built aircraft that meet the requirements stipulated in Paragraph 1-4 of this JCAB Circular. The JCAB Circular No.1-006 “General Policies for Permitting Test Flights, etc. for Amateur-Built Aircraft” applies to ultralight planes, etc. that do not meet the requirements stipulated in Paragraph 1-4 of this JCAB Circular.

1-3 Definition

1-3-1 In this JCAB Circular, the term “ultralight plane” refers to simply-structured aircraft equipped with landing gears (water landing gears) and a power unit that allows the pilot to make a flight in a sitting posture.

Note) Aircraft commonly known as ultralight aircraft, microlight aircraft, parachute plane, etc. are categorized as ultralight planes.

1-3-2 In this JCAB Circular, the term “gyroplane” refers to rotary-wing aircraft that, during flight, primarily gains lift from one or more rotary wings that are rotated by the action of aerodynamic force and also obtains propulsion force from propellers.

1-3-3 In this JCAB Circular, the term “safety manager” refers to a person who is qualified to engage in the duties stipulated in Chapter III of this JCAB Circular.

1-4 Requirements for Ultralight Planes, etc.

The requirements for ultralight planes, etc. that are allowed to flight under this JCAB Circular shall be as follows.

1-4-1 Requirements for Ultralight Planes

- (1) The categories shall be control surface driving type, weight-shift control type, and parachute type.
- (2) The aircraft must be single-seated type or double-seated type (two seats).
- (3) The empty-weight must not exceed 180kg (397lbs) for single-seated type and 225kg (496lbs) for double-seated type.

However, if the accessories listed below are equipped, the empty-weight is allowed to exceed these limits only for the weight of the individual accessories.

- a. The weight of emergency parachutes must not exceed 11kg (24lbs).
- b. Emergency floats shall be full weight.
- c. The weight of floats must not exceed 28kg (60lbs).

(Note) The term “empty-weight” refers to the weight of aircraft in a state that all accessories, etc. used, excluding the weights of persons on board, fuel and those listed in (a) through (c) above, are installed on the aircraft. The term “emergency float” refers to a float used for emergency, not for regular operation. The float’s allowable weight of up to 28kg (60lbs) applies only to hydroplanes that are intended only for takeoff and landing on water, and does not apply to amphibious aircraft.

- (4) The wing area must be 10m² (108ft²) or more.
- (5) The power-off stall speed must not exceed 65km/h (35 knots).
- (6) The maximum horizontal speed must not exceed 185km/h (100 knots).
- (7) Propulsion force must be gained from propellers.
- (8) Landing gears or water running gears including wheels, skis, floats, etc. must be installed.
- (9) The fuel tank capacity must not exceed 30L (8USgal).
- (10) Equipment that measures airspeed and altitude must be installed.

1-4-2 Requirements for Gyroplanes

- (1) The category shall be gyroplane.
- (2) The aircraft must be single-seated type or double-seated type (two seats).
- (3) The empty-weight must not exceed 180kg (397lbs) for single-seated type and 225kg (496lbs) for double-seated type.

However, if the accessories listed below are equipped, the empty-weight is allowed to exceed these limits only for the weight of the individual accessories.

- a. The weight of emergency parachutes must not exceed 11kg (24lbs).
- b. Emergency floats shall be full weight.
- c. The weight of floats must not exceed 28kg (60lbs).

(Note) The term “empty-weight” refers to the weight of aircraft in a state that all accessories, etc. used, excluding the weights of persons on board, fuel and those listed in

- (a) through (c) above, are installed on the aircraft. The term “emergency float” refers to a float used for emergency, not for regular operation. The float’s allowable weight of up to 28kg (60lbs) applies only to hydroplanes that are intended only for takeoff and landing on water, and does not apply to amphibious aircraft.
- (4) Landing gears or water running gears including wheels, skis, floats, etc. must be installed.
 - (5) The fuel tank capacity must not exceed 30L (8USgal).
 - (6) Equipment that measures airspeed and altitude must be installed.

Chapter II Registration of Ultralight Planes, etc.

2-1 Purpose

The aircraft registration and the identification mark given in this chapter aim to identify aircraft for evaluation on the flight permit, flight management, confirmation of obtaining permission based on this JCAB Circular, and the like, but are not replaced with the registration under Article 3 of the Civil Aeronautics Act and do not intend to certify the conformity with the requirements for ultralight planes, etc.

2-2 Applicability

This Chapter applies to the cases listed below.

- (1) First registration (hereinafter referred to as “new registration”)
- (2) If there is any change to the following registration information of an ultralight plane, etc. that has already been registered (hereinafter referred to as “registration of change”)
 - (i) Name or address of the owner or manager of an ultralight plane, etc.
 - (ii) Principal home base
- (3) Deregistration must be made if a registered ultralight plane, etc. will no longer be used for flight permanently or is disposed of.

2-3 Registration Requirements

Registration requirements are as follows.

- (1) Application must be made by the owner or manager of the ultralight plane, etc.
- (2) In principle, registration may not be made in cases falling under any of the following:
 - (i) If the aircraft has already been registered under Article 3 of the Civil Aeronautics Act
 - (ii) If the aircraft has a registration mark, etc. that has been approved by the foreign aviation authority or equivalent agencies

2-4 Period for Registration Application

The registration must be completed before the period when the flight permit application concerning the proviso of Article 11, paragraph (1) of the Civil Aeronautics Act is submitted.

2-5 Application of New Registration

The owner or manager of an ultralight plane, etc. must submit an application form and attached documents to the Airworthiness Engineer Office of the Regional Civil Aviation Bureau listed in Paragraph 2-8 of this JCAB Circular:

- (i) Application Form for Ultralight Planes, etc. Registration (Form 1A): 1 copy

- (ii) Return-addressed envelope (postage attached): 1 envelope

2-6 Notification Concerning Registration of Change

The owner or manager of an ultralight plane, etc. must, if there is any change falling under the cases in Paragraph 2-2 (2), submit the notification form and attached documents to the Airworthiness Engineer Office of the Regional Civil Aviation Bureau listed in Paragraph 2-8 of this JCAB Circular:

- (i) Notification Form for Registration of Change of Ultralight Planes, etc. (Form 2A): 1 copy
- (ii) Return-addressed envelope (postage attached): 1 envelope

2-7 Notification Concerning Dereistration

The owner or manager of an ultralight plane, etc. must, if his/her registered ultralight plane, etc. will no longer be used for flight permanently or is disposed of, submit the notification form to the Airworthiness Engineer Office of the Regional Civil Aviation Bureau listed in Paragraph 2-8 of this JCAB Circular:

- (i) Notification Form for Dereistration of Ultralight Planes, etc. (Form 2A-1): 1 copy

2-8 Destinations where Application, etc. Concerning New Registration or Notification, etc. Concerning Registration of Change or Dereistration Should be Submitted

- (1) If the flight area is in or east of Shizuoka Prefecture, Nagano Prefecture, and Niigata Prefecture, the destination is as follows.

Airworthiness Engineer Office, Air Traffic Services and Safety Department
Tokyo Regional Civil Aviation Bureau
Ministry of Land, Infrastructure, Transport and Tourism
Kudan Common Government Office Bldg. No.2
Kudan Minami 1-1-15, Chiyoda-ku, Tokyo 102-0074
Tel: 03-5275-9292 (switchboard)
Fax: 03-5216-5571

- (2) If the flight area is in or west of Aichi Prefecture, Gifu Prefecture, and Toyama Prefecture, the destination is as follows.

Airworthiness Engineer Office, Air Traffic Services and Safety Department
Osaka Regional Civil Aviation Bureau
Ministry of Land, Infrastructure, Transport and Tourism
Osaka Common Government Office Bldg. No.2 Annex
Otemae 4-1-67, Chuo-ku, Osaka City, Osaka 540-0008
Tel: 06-6949-6211 (Switchboard)

Fax: 06-6945-6313

2-9 Issuance of Identification Mark Notification, etc.

2-9-1 New Registration

If the application, etc. submitted are in order, the acceptance of the application concerning new registration is performed by issuing the applicant an Identification Mark Notice (Form 1A).

The identification mark is composed of two alphabetic characters and four Arabic numerals; if this combination is insufficient, the identification mark is composed by including alphabetic characters in the last one, two and three letters, excluding the alphabetic characters "I," "O," and "Q." The identification mark shall be allocated in order of application submission according to the following categories.

(1) Ultralight planes

- | | |
|----------------------------------|-------------|
| (i) Control surface driving type | JR0201-6ZZZ |
| (ii) Weight-shift control type | JR7001-7ZZZ |
| (iii) Parachute type | JR8001-9ZZZ |

(2) Gyroplanes

JE0001-9ZZZ

2-9-2 Registration of Change

If the notification, etc. submitted are in order, the acceptance of the notification concerning registration of change is performed by issuing the notifying person a Receipt of Registration of Change (Form 2A).

2-10 Display of Identification Mark

An applicant who has received a registration notice must display the identification mark on his/her ultralight plane, etc. in such a manner as instructed below.

The identification mark, consisting of each character with a size of 100mm, a width of 56mm, and a thickness of 20mm, must be displayed in such a manner as to be easily observed visually from the outside of both sides of vertical tails or both sides of the fuselage. In addition, the identification mark, consisting of each character with a size of 200mm or more, a width of 120mm or more, and a thickness of 33mm or more, must be displayed on the bottom of the left main wing (on the bottom of the fuselage if no space is available on the main wing). Each of the displays must have a space of 30mm between individual characters.

With regard to parachute-type ultralight planes and gyroplanes, the display on the bottom of the left main wing (or on the bottom of the fuselage) may be omitted.

If there is no space for the display as instructed above, by describing this information in the section for the identification mark display position of the Application Form for Ultralight Planes, etc. Registration (Form 1A), the size of characters may be changed or the display on the bottom of the

main wing (or on the bottom of the fuselage) may be omitted.

2-11 Interim Measures

Ultralight planes, etc. that are given an identification mark by the Japan Aeronautic Association before March 31, 2001 are deemed to be in effect even after the effective date of this JCAB Circular.

Chapter III Safety Manager

3-1 Purpose

A safety manager is a person who has sufficient ability to carry out aircraft confirmation and safety management for ensuring safety as listed in Paragraph 3-4 of this JCAB Circular, as well as who meets all of the requirements listed in Paragraph 3-2 of this JCAB Circular or who is confirmed by the director of the Regional Civil Aviation Bureau to satisfy all of the requirements listed in Paragraph 3-3 of this JCAB Circular.

3-2 Requirements for Safety Manager

A safety manager must:

- (1) have sufficient knowledge of general handling of ultralight planes, etc. as well as the maintenance methods and the methods for training maintenance personnel;
- (2) have sufficient knowledge of the Civil Aeronautics Act concerning ultralight planes, etc.;
- (3) have sufficient knowledge of general safety measures for flight as well as aircraft accident and failure report, etc.;
- (4) be deemed to have the spirit of complying with the Civil Aeronautics Act and other relevant laws and regulations; and
- (5) be qualified as an aircraft maintenance technician or an aircraft line maintenance technician, and have at least one year's practical experience in the general handling and maintenance stipulated in paragraph (1) of this Paragraph.

3-3 Requirements for Person Who Is Confirmed by the Director of the Regional Civil Aviation Bureau to Have Appropriate Ability for Safety Manager's Duties

The applicant must:

- (1) be 20 years of age or more;
- (2) have sufficient knowledge of general handling of ultralight planes, etc. as well as the maintenance methods and the methods for training maintenance personnel;
- (3) have sufficient knowledge of the Civil Aeronautics Act concerning ultralight planes, etc.;
- (4) have sufficient knowledge of general safety measures for flight as well as aircraft accident and failure report, etc.;
- (5) be deemed to have the spirit of complying with the Civil Aeronautics Act and other relevant laws and regulations; and
- (6) have at least two years' practical experience in general handling and maintenance of ultralight planes, etc.

3-4 Duties of Safety Manager

Safety manager carries out the following duties for the ultralight plane, etc. that he/she manages.

Safety manager:

- (1) creates and manages the management records (Form 9A) for the ultralight plane, etc.;
- (2) confirms the current conditions including the type of aircraft, etc. and accessories, etc. before applying for flight permission and issues a Letter of Aircraft Confirmation for Ultralight Plane, etc. (Form 8A);
- (3) confirms the maintenance and management conditions of the aircraft that is to be applied for flight permission; after flight permission is given, manages the condition of the aircraft within the permission period; and
- (4) provides instructions regarding aircraft inspection, maintenance, etc. required for safe operation of the ultralight plane, etc.

3-5 Confirmation of the Eligibility Requirements for Safety Manager

The confirmation of the conformity with the requirements for safety manager listed in Paragraph 3-2 or 3-3 of this JCAB Circular shall, when applying for flight permission under the proviso of Article 11, paragraph (1) of the Civil Aeronautics Act listed in Chapter IV, be performed by requesting a submission of necessary documents according to the cases listed below. Therefore, if any doubt arises as to the eligibility requirements, the acceptance of the application for flight permission may be suspended or rejected. Applicant should pay full attention to this precaution.

3-5-1 Documents Required for Person Who Meets the Requirements for Safety Manager Stipulated in Paragraph 3-2 of This JCAB Circular

- Confirmation Letter of Eligibility Requirements for Safety Manager (for Persons Qualified as Aircraft Maintenance Technician) (Form 4A)

3-5-2 Documents Required for Person Who Is Confirmed by the Director of the Regional Civil Aviation Bureau to Have Appropriate Ability for Safety Manager's Duties Stipulated in Paragraph 3-3 of This JCAB Circular

3-5-2-1 Person Whom Confirmation of the Eligibility Requirements Is Newly Required

Applicant who first requests a confirmation of his/her ability as a safety manager after April 1, 2006 (the effective date of JCAB Circular) must submit the following document.

- Confirmation Letter of Ability Equivalent to Safety Manager (for Persons Who Apply for New Confirmation) (Form 5A)

3-5-2-2 Person Who Has Previously Been Confirmed by the Director of the Regional Civil Aviation Bureau to Have Appropriate Ability for Safety Manager's Duties

Applicant, who has been a safety manager since before March 31, 2006 (the day before the effective date of JCAB Circular) as well as who submitted a Confirmation Letter of Ability Equivalent to Safety Manager (for Persons Who Apply for New Confirmation) (Form 8) to the director of Regional Civil Aviation Bureau in the past and was confirmed by the director of Regional Civil Aviation Bureau to have appropriate ability for the duties of safety manager, must submit the following document.

- Confirmation Letter of Ability Equivalent to Safety Manager (for Persons Who Have Already Been Confirmed) (Form 6A)

3-5-3 Confirmation of “Sufficient Knowledge”

The Confirmation of the “sufficient knowledge” stipulated in (1) through (3) of Paragraph 3-2 and (2) through (4) of Paragraph 3-3 of this JCAB Circular shall be performed by submitting a copy of certificate, etc. issued by a safety manager, which indicates the information that the applicant has completed lecture courses including the contents listed below. A person who provides lectures for this purpose must be a safety manager, and these lecture courses must be composed of sufficient contents as for the following items. However, an external lecturer with expert knowledge may be assigned to a part of lecture courses at the discretion of the safety manager who provides lectures.

- The latest Civil Aeronautics Act and circulars, etc. concerning ultralight planes, etc.
- Aerodynamics
- General matters concerning ultralight planes, etc. that include aircraft handling, structures, basics of maintenance, and descriptions of the Letter of Aircraft Confirmation for Ultralight Planes, etc. (Form 8A)
- Duties of safety manager listed in Paragraph 3-4 of this JCAB Circular
- Overview of past aircraft accidents, failures, etc.
- General safety measures for flight

3-6 Lecture Courses

Applicant must complete the lecture courses composed of the contents stipulated in Paragraph 3-5-3 of this JCAB Circular no later than two years after completing the previous lecture courses. For the purpose of confirming the appropriateness of the lecture contents, an applicant who has completed new lecture courses within the permission period may be requested to submit his/her course schedules or curriculum, etc. that describe the lecture contents at the time of the next application for flight permission for the aircraft that he/she manages. Until the appropriateness of the lecture contents is confirmed, the aircraft that seeks flight permission concerning the proviso of Article 11, paragraph (1) of the Civil Aeronautics Act and that was confirmed by the safety manager who completed the lecture courses may not be given approval. In addition, if two years

will pass after completing the previous lecture courses within the flight permission period (or if the valid period of safety manager will expire), the applicant must complete appropriate lecture courses before two years pass (or before the valid period expires).

3-7 Interim Measures

Safety manager whose status was in effect as of April 1, 2006 (the effective date of JCAB Circular) is regarded as a safety manager even after revisions; however, he/she is required to complete the lecture courses stipulated in Paragraph 3-6 of this JCAB Circular in this case as well.

Chapter IV Procedures Concerning Flight Permission

4-1 Purpose

This chapter aims to stipulate general policies to provide ultralight planes, etc. with flight permission under the proviso of Article 11, paragraph (1) of the Civil Aeronautics Act.

4-2 Flight Categories

In principle, a flight shall be performed by categorizing it into two phases as follows.

- 4-2-1 First-Phase Flight: A jump flight at an altitude of three meters or less, on the ground surface used for takeoff and landing or on the water surface used for takeoff and landing on water

- 4-2-2 Second-Phase Flight: In principle, a flight that flies within airspace in the vicinity of an aerodrome (hereinafter referred to as “an aerodrome traffic zone”), excluding the airspace over persons, houses, or properties, and that does not fly in a control area or control zone, as well as that complies with the provisions of Article 81 of the Civil Aeronautics Act and Article 174 of the Ordinance for Enforcement of the Civil Aeronautics Act (Minimum Safe Altitude). In principle, the term “aerodrome traffic zone” refers to airspace within a 3km radius from the airport or the designated area for takeoff and landing. However, if it is deemed that the requirements stipulated in the Appendix (Requirements for Airspace Expansion) are met, the airspace may be expanded to the extent of a 9km radius.

4-3 Period for Application

An application for flight permission must arrive at the submission destination no later than three weeks before the desired date to undertake a flight.

4-4 Categories of Application

The categories of application shall be as follows.

- (1) New..... The first aircraft application
- (2) Renewal Application concerning aircraft that has previously been given permission (excluding cases where the applications for (3) through (5) listed below are filed)
- (3) Change Application concerning a change of the flight area and the pilot

- (4) Airspace expansion..... Application concerning a flight involving airspace expansion
- (5) Alteration..... Application concerning cases that fall under any of the following
 - (i) In a case where the wings, rotors, propellers, and engines are altered, or where these are replaced with new ones whose part numbers are different from original ones.
 - (ii) In a case where other important accessories are changed.

4-5 Documents Required for Application

Applicant must, according to the categories of application listed in Appendix 2, submit an Application Form for Test Flight Permission, etc. (Form 7A) and necessary attached documents to the Airworthiness Engineer Office of the Regional Civil Aviation Bureau listed in Article 4-6 of this JCAB Circular.

Applicable documents required for the application for test flight permission must be attached in accordance with the List of Attached Documents Required for Application for Test Flight Permission (Form 3A).

Type specifications that were approved before March 31, 2006 are regarded as valid documents even after the effective date of this JCAB Circular.

4-6 Destinations where Application, etc. Should Be Submitted

Application Form for Test Flight Permission, etc. must be submitted to the following Airworthiness Engineer Office of Air Traffic Services and Safety Department at the Regional Civil Aviation Bureau that exercises jurisdiction over the applicable flight areas.

- (3) If the flight area is in or east of Shizuoka Prefecture, Nagano Prefecture, and Niigata Prefecture, the destination is as follows.

Airworthiness Engineer Office, Air Traffic Services and Safety Department

Tokyo Regional Civil Aviation Bureau

Ministry of Land, Infrastructure, Transport and Tourism

Kudan Common Government Office Bldg. No.2

Kudan Minami 1-1-15, Chiyoda-ku, Tokyo 102-0074

Tel: 03-5275-9292 (switchboard)

Fax: 03-5216-5571

- (4) If the flight area is in or west of Aichi Prefecture, Gifu Prefecture, and Toyama Prefecture, the destination is as follows.

Airworthiness Engineer Office, Air Traffic Services and Safety Department

Osaka Regional Civil Aviation Bureau

Ministry of Land, Infrastructure, Transport and Tourism
Osaka Common Government Office Bldg. No.2 Annex
Otemae 4-1-67, Chuo-ku, Osaka City, Osaka 540-0008
Tel: 06-6949-6211 (switchboard)
Fax: 06-6945-6313

4-7 Evaluation

The evaluation concerning the permission for the first-phase and second-phase flights shall be performed by document review.

The above-described document review shall be performed by evaluating the Letter of Aircraft Confirmation for Ultralight Planes, etc. (Form 8A) that is confirmed by a safety manager. However, the applicant or substitute applicant must confirm the design, production, and current condition of the aircraft on his/her own and also make sure that these configurations are the same as the ones that have been reported for application.

In addition, the design must, in principle, be as designed by the designer, and the aircraft must not be altered by the applicant on his/her own. If such alteration was performed, the applicant must analyze potential impacts of the alteration on the aircraft and prepare and submit supplemental data that demonstrate the aircraft safety under his/her own responsibility.

4-8 Issuance of Permission Letter

An evaluation will be conducted in accordance with Paragraph 4-7 of this JCAB Circular; if the application form for ultralight planes, etc. and attached documents submitted are in order, a Permission Letter (Form 7A) specifying the permission period will be issued to the applicant.

Permission Letter shall include the Aircraft List of Ultralight Planes, etc. (Form 10A) described in the application form and the List of Pilots (Form 11A).

4-9 Conditions for Permission

Permission is given under the condition of strict compliance with the Precautions for Safety of Ultralight Planes, etc. listed in Paragraph 4-13 of this JCAB Circular.

4-10 General Policies

- (1) Application must start with the first-phase flight; subsequent applications must be made in a phased manner.
- (2) If flights are conducted in a phased manner under the supervision of safety manager, the applicant may apply for the first-phase and second-phase flights at one time irrespective of the provision of preceding paragraph. However, if alteration that requires to be reported was

performed or a special repair was made due to accident, damage, etc., the application must start with the first-phase flight again, even if permission for the second-phase flight has already been given.

- (3) Double-seated type aircraft will be given flight permission only if all of the persons on board are pilots or other one person is a flight trainee.
- (4) In order to prevent adverse effects (noise, etc.) on the living environment of residents in the vicinity of the flight airspace, the person who applies for permission (hereinafter referred to as "applicant") is responsible for undertaking necessary coordination to obtain permission to use the location for takeoff and landing, and an agreement on the flight from the residents in the vicinity, to avoid problems from occurring.
- (5) Permission is given under the condition of strict compliance with the Precautions for Safety of Ultralight Planes, etc. listed in Paragraph 4-13 of this JCAB Circular; therefore, the applicant must be well familiar with the precautions. Other requirements may be added for permission if it is deemed necessary to ensure safety.
- (6) Applicant must fully confirm the safety of the ultralight plane, etc. before application.
- (7) Permission is given only to flights that are originally intended to be used for sports, recreations, etc., and not given to flights intended for passenger/cargo transport, chemical spraying, etc. that contradict the purpose of this original intent.
- (8) A part of documents attached to the application form may be omitted if the permission information is changed within the flight permission period or if it is deemed that no additional documents are necessary for the application concerning an ultralight plane, etc. that has previously given permission.
- (9) If the applicant confirms that the requirements listed in Paragraph 1-4 of this JCAB Circular are met, under his/her own responsibility, addition or change of accessories, skis, vehicle fairings, brakes, measuring gauges, and balloon tires associated with the change of engine starting method may, to the extent of 5% of the maximum take-off weight, be performed within the flight permission period by recording the information.

4-11 Permission Periods

4-11-1 In principle, the periods for flight permission are as follows.

4-11-1-1 Flight under the Supervision of Safety Manager

- (1) First-phase flight Within four months
- (2) First attempt at second-phase flight
(including simultaneous application for the first-phase flight) Within two months
- (3) Renewal of the second-phase flight Within 12 months

4-11-1-2 Flight without the Supervision of Safety Manager

(1) First-phase flight	Within four months
(2) First attempt at second-phase flight	Within two months
(3) Renewal of the second-phase flight	Within four months

4-12 Revocation of Permission

Permission may be revoked in cases that fall under any of the following.

- (1) Where a complaint has arisen from the residents living in the vicinity of the flight airspace due to noise, etc.
- (2) Where a problem has arisen with the land owner or manager about the use of the area for takeoff and landing
- (3) Where the applicant is deemed to have failed to comply with the Aviation Act and conditions for permission
- (4) Where it is found that there is discrepancy between the information that has been submitted and the facts
- (5) Where any event arises that is deemed appropriate to revoke permission

4-13 Precautions for Safety of Ultralight Planes, etc.

Precautions necessary to ensure the safety of ultralight planes, etc. are as follows.

4-13-1 General

- (1) Precautions for flying an ultralight plane, etc. to ensure the safety are as follows.
 - In principle, the flight area is limited to an aerodrome traffic zone excluding the airspace over persons, houses, or properties.
 - It is prohibited to fly in a control area or control zone.
 - In principle, it is prohibited to fly over an information zone and civil training and testing area. However, if a flight is conducted over these areas due to unavoidable reasons, the applicant must undertake necessary coordination in advance with air traffic control authorities, such as the airport administrative office.
 - Aircraft must fly in compliance with the provisions of Article 81 of the Civil Aeronautics Act and Article 174 of the Ordinance for Enforcement of the Civil Aeronautics Act (Minimum Safe Altitude).
 - In principle, the flight area shall be airspace within a 3km radius. However, if it is deemed that the requirements stipulated in the Appendix (Requirements for Airspace Expansion) are met, the airspace may be expanded to the extent of a 9km radius.
- (2) The applicant is responsible for assembly, maintenance, and operation of the ultralight plane, etc. for which he/she has applied; therefore, even if the ultralight plane, etc. faces trouble that results in a crash landing or accident, the applicant is required to be fully careful not to

inflict harm on the lives and property, etc. of persons other than those on board (it is preferable to take out insurance).

- (3) It is prohibited to conduct flights that contradict the purpose of the original intent, such as passenger/cargo transport and chemical spraying.
- (4) Flight permission is given to flights that accumulates experience with full understanding of flight characteristics of the ultralight plane, etc. and are conducted in a phased manner; therefore, granting of permission should not be interpreted as a certificate of safety for the ultralight plane, etc. for which he/she has applied.

4-13-2 Penalties

Use beyond the conditions of permission will be subject to punishment under Article 143 of the Civil Aeronautics Act. Primarily, a flight without permission of the proviso of Article 11, Paragraph (1) of the Civil Aeronautics Act will be subject to punishment under Article 143 of the Civil Aeronautics Act.

4-13-3 Precautions for Production of Ultralight Planes, etc.

- (1) Components and materials for commercial aircraft must be used as much as possible for the primary structure of ultralight planes, etc.
- (2) *The Aircraft Maintenance Work Standards* (FAA Published Advisory Circular 43.13, Japan Aeronautical Engineers Association), etc. are available as references for working methods, including steel pipe structure, wooden structure, and steel structure as well as other working methods for ultralight planes, etc.
- (3) Safety belts for persons on board must be installed.
- (4) Necessary measures must be taken to prevent serious injury to persons on board at the time of emergency landing by avoiding forming parts that include sharp corners or edges, projections, knobs, etc. or by installing protective pads, etc.
- (5) It is preferable to install equipment that measures the temperature of engine cylinders and equipment that measures the rotational speed of the engine.
- (6) The aircraft identification mark must be displayed in a durable manner.

4-13-4 Precautions for Flight Operations

4-13-4-1 Ground Test Operation and Ground (Water Surface) Running

- (1) Applicant must confirm that the installation and functionality of structures and systems (flight control system, fuel system, and other systems) are free of abnormalities.
- (2) Ground test operation (operation when the aircraft is in a stop state)
Applicant must confirm that the engine is able to operate without problem after maintaining the tested engine in a state of anticipated flying posture for two or more hours in total for the period from low-speed state to full-throttle state. (If the engine manufacturer provides a recommended operating time, the applicant must follow it.) The engine must be handled in

compliance with the instructions provided by the manufacturer. Applicant must confirm that vibration, etc. occurring during test operation do not cause any problem to the installation and functionality of structures and systems.

(3) Ground (water surface) running

Ground (water surface) running of one or more hours in total must be performed. For parachute-type ultralight planes, ground (water surface) running may be carried out without a parachute. The running must include more than eight high-speed ground (water surface) running attempts. In addition, the running must include ground running performed with the nose wheels or tail wheels floated from the ground surface for more than 30 minutes.

After each set of several ground (water surface) running tests, at least, the applicant must inspect the status of the main mounting bolts and the aircraft as a whole in detail. Special attention must be paid to overtorque.

Detailed inspection must be carried out for the flight control system, power system, etc. and the aircraft as a whole after ground (water surface) running is performed in order to confirm that all of them are free of abnormalities. For inspection, special attention must be paid to the installation of propellers, engines, main wings, tails, rotors, landing gears, etc., as well as to the connecting parts of these flight control systems.

If the results of the ground test operation and ground (water surface) running are completely free of abnormalities and it is deemed appropriate to make the transition to jump flight, the applicant may apply for permission for the first-phase flight.

4-13-4-2 First-Phase Flight (Jump Flight)

Prior to the first-phase flight, ground test operation and ground (water surface) running must be performed. If the results of the ground test operation and ground (water surface) running are completely free of abnormalities and it is deemed appropriate to make the transition to flight, the applicant may perform a flight that slightly floats in the air with an altitude of three meters or less.

In the first phase, more than 20 flights must be conducted; for every single flight, the applicant must inspect the aircraft as a whole in detail in order to confirm that the aircraft is free of abnormalities. In particular, detailed inspection must be conducted for the flight control system and power system.

With careful attention to the controllability, reaction (vertical and horizontal directions), etc. of the flight control system, the applicant must obtain and utilize data concerning operational limitations and operation procedures that are deemed essential for safe flight.

If the results of the first-phase flight are completely free of abnormalities and it is deemed appropriate to make the transition to flight in an aerodrome traffic zone, the

applicant may apply for permission for the second-phase flight.

4-13-4-3 Second-Phase Flight (Flight in an aerodrome traffic zone)

The second-phase flight must, in accordance with the environmental conditions of the area used for takeoff and landing, be conducted by performing straight flight and shallow turning to the extent possible at a minimum altitude required to ensure the safety. After that flight, altitude must be increased gradually in consideration of the previous flight conditions.

With special attention to the controllability and reaction of the flight control system for every single flight, the applicant must obtain and utilize data concerning operational limitations and operation procedures for the next-phase flight.

Flight must start with moderate maneuvers. Aerobatics such as steep turns and loop flight, and drastic maneuvers such as nosedives, must not be performed.

Detailed inspection of the aircraft as a whole must be carried out before and after each flight in order to confirm that the aircraft is free of abnormalities.

If the results of the second-phase flight are completely free of abnormalities and it is deemed appropriate to continue flights in this condition, the applicant may apply for renewal of permission for the second-phase flight permission.

4-13-4-4 If flight procedures are specified by the manufacturer, the applicant must follow them.

4-13-4-5 Ultralight planes, etc. have the possibility to cause serious accidents due to fatigue fracture of structural members; therefore, even if his/her ultralight plane, etc. seems safe in terms of past successful performance, the applicant should keep this in mind and conduct sufficient inspection.

4-13-5 Other Precautions

4-13-5-1 Assembly and disassembly of an ultralight plane, etc. must be performed in accordance with the procedures specified by the designer or manufacturer in the instructions, etc. An ultralight plane, etc. that requires complicated assembly work must be assembled by persons who have sufficient experience in assembling the same or a similar type of aircraft. Even an ultralight plane, etc. that requires simple assembly work should, to a maximum extent, be assembled under the instruction of persons who have sufficient experience in such assembly work.

4-13-5-2 Persons on board must wear a helmet and clothes suited for flight.

4-13-5-3 Persons on board flying over the water must wear a life jacket.

4-13-5-4 Prior to flight, necessary safety measures must be taken to prevent accidents.

Personnel responsible for limiting people's access, rescue personnel, and rescue equipment must be placed at the area used for takeoff and landing. In addition, appropriate communication methods, including a transceiver, hand-flags, etc. must be

prepared in advance.

4-13-5-5 For flight operation, the safety management manuals, etc. developed by the applicant must be observed.

4-13-5-6 For flight, the applicant must pay full attention to the aircraft's motion characteristics and also note that drastic or excessive operations must not be performed.

4-13-5-7 Flight is allowed to be conducted only during daytime hours with visual metrological conditions. Flight over clouds and ocean must not be performed. Flight must not be conducted when there is a possibility of icing on the aircraft or of flying over clouds, or when the wind is strong or the weather is inclement.

4-13-5-8 When performing takeoff and landing, equipment that indicates wind direction such as a windsock must be placed.

4-13-5-9 The applicant must strive to prevent adverse effects (noise, etc.) on the living environment of residents in the vicinity of the flight airspace.

4-13-5-10 Flight must not be conducted if the aircraft has even very slight signs of malfunction.

4-13-5-11 Inspection of the aircraft must be conducted before and after the flight in accordance with the instructions, etc. of the aircraft in order to confirm that the aircraft is free of abnormalities. Maintenance work must be properly performed in accordance with the inspection items in the instructions, etc. developed by the designer or manufacturer.

4-13-5-12 For flight, the applicant must always carry the written permission for test flight, etc. or its copy with him/her.

4-13-5-13 The applicant must pay careful attention to the rule that permission may be revoked in the event that his/her conduct falls under the Revocation of Permission specified in Paragraph 4-12 of this JCAB Circular.

4-13-6 Storage and Utilization of Records

The applicant must prepare a record book (a document that describes items equivalent to flight logbook specified in the Civil Aeronautics Act) of the aircraft and record necessary items in this record book so as to utilize the data for future maintenance and flight operation.

If the aircraft is handed over to a new owner or user, this record book must also be transferred to the new owner or new user.