FEDERAL AVIATION AGENCY
AIR TRAFFIC SERVICE
WASHINGTON 25, D. C.

CIVIL AIR REGULATIONS DRAFT RELEASE NO. 62-45

SUBJECT: Amendment of Parts 48 and 60 of the Civil Air Regulations - Operation Rules for Unmanned Free Balloons

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The Air Traffic Service of the Federal Aviation Agency has under consideration a proposal to amend Parts 48 and 60 of the Civil Air Regulations. Part 48, which now governs moored balloons and kites, would be amended to include operation rules for unmanned free balloons. Concurrently, Part 60 would be amended to exclude unmanned free balloons from its provisions. The reasons therefor are set forth in the explanatory statement of the attached proposal which is being published in the Federal Register as a Notice of Proposed Rule Making.

The Agency desires that all persons who will be affected by the requirements of the proposed regulation be fully informed as to its effect upon them and is, therefore, circulating copies in order to afford interested persons an opportunity to submit comments.

Because of the large number of comments which we anticipate receiving in response to this draft release, we will be unable to acknowledge receipt of each reply. You may be assured, however, that all comments will be given careful consideration.

All comments must be submitted in duplicate to the Docket Section, Federal Aviation Agency, Room A-103, 1711 New York Avenue, N. W., Washington 25, D. C. In order to insure consideration, comments must be received by the Agency prior to December 31, 1962.

D. D. Thomas
Director, Air Traffic Service

NOTICE OF PROPOSED RULE MAKING

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As published in the Federal Register on
November 1, 1962 (27 F. R. 10656)

FEDERAL AVIATION AGENCY

[14 CFR Parts 48, 60]

[Reg. Docket No. 1457; Draft Release 62-45]

OPERATION RULES FOR UNMANNED FREE BALLOONS

Notice of Proposed Rule Making

Pursuant to the authority delegated to me by the Administrator (14 CFR Part 405), notice is hereby given that the Federal Aviation Agency (FAA) has under consideration a proposal to amend Parts 48 and 60 of the Civil Air Regulations as hereinafter set forth.

Interested persons may participate in the making of the proposed rules by submitting such written data, views, or arguments as they may desire. Communications should be submitted in duplicate to the Docket Section, Federal Aviation Agency, Room A-103, 1711 New York Avenue, NW., Washington 25, D.C. All communications received prior to December 31, 1962, will be considered by the Administrator before taking action upon the proposed rules. The proposals contained in this notice may be changed in the light of comments received. All comments submitted will be available in the Docket Section for examination by interested persons at any time. Because of the large number of comments anticipated in response to this proposal, we will be unable to acknowledge receipt of each reply.

Part 48 now governs the operation of moored balloons and kites. The amendment to Part 48 proposed herein would incorporate regulations regarding the operation of unmanned free balloons. Part 60 contains the Air Traffic Rules governing the operation of aircraft, including unmanned free balloons. The amendment to Part 60 proposed herein would exclude unmanned free balloons from Part 60.

On February 25, 1961, in Draft Release No. 61-4 (26 F.R. 1666), the FAA proposed regulations pertaining to the operation of unmanned free balloons. That proposal generated a great deal of interest, as evidenced by the number of comments received. Opposition in varying degree was expressed by many segments of the scientific community engaged in research utilizing balloons. The majority of these comments indicated that the proposal would have a serious effect on future scientific balloon operations. Civil aviation interests, on the other hand, generally endorsed the proposed regulations.

Satisfactory resolution of the many comments received would have resulted in final regulatory action substantially different from that proposed in the draft release. It was concluded that the significance of the proposal and the tenor of the comments made it desirable that the Agency obtain additional public opinion on the proposed regulations. Therefore, a public hearing, noted in 26 F.R. 10701, was convened on December 7, 1961, before a representative of the Administrator, to solicit comment which would aid in a satisfactory resolution. Valuable information gained at the hearing has been used by the Agency in developing the new proposed regulations.

This proposal, like the earlier draft release, is designed primarily to minimize the potential collision hazard to aircraft created by the release of unmanned free balloons. Activity in the field of unmanned free balloon operations has been steadily increasing, especially among the scientific communities of a great many of our colleges and universities. The increase in activities of this nature requires the promulgation of specific rules which will reasonably govern them without decreasing the usefulness of the balloon as an atmospheric research tool. The regulatory measures proposed would apply to the launching, tracking, and impact of the unmanned free balloon in addition to requirements regarding weather, equipment components and safety marking devices.

It was apparent from comments on the earlier draft release that some misunderstanding existed regarding the applicability of the proposal. Some persons apparently felt that operations would be prohibited if the payload exceeded four pounds. It must be pointed out that the Agency intent is not to prohibit operations. The applicability of the proposal merely defines which operations are subject to the requirements of the regulation and which operations are not.

The proposed regulations would require the balloon operator to obtain an authorization from air traffic control if the launch is to be made from within an airport traffic area or a control zone. This requirement is designed to ensure a greater degree of compatibility and safety in these areas of more concentrated air traffic. Launches from areas other than an airport traffic area or control zone do not require advance approval. Also, since the possibility of hazard to persons and property on the surface is greater until the balloon assumes a normal climb configuration, during the initial 1,000 feet of ascent it would be restricted from operating over the congested area of a city, town or settlement or an open-air assembly of persons not associated with the balloon operation.

The proposal would establish a lighting requirement applicable to night operations below 60,000 feet. Night at the altitude of operation is used as the criterion since the higher the balloon ascends the shorter will be the nighttime period. The Air Almanac publishes information from which sunset, twilight, and sunrise may be determined. Weather minimums are also proposed herein and are designed to ensure that sufficient horizontal visibility and minimum cloud coverage prevail to permit recognition and avoidance of balloons.

Notification to appropriate FAA air traffic facilities will enable the Agency to provide information by Notice to Airmen (NOTAM) to airspace users to inform them of the existence and general location of the balloon. For this reason, a requirement for an accurate system of tracking the balloon and an expeditious method of passing track data is considered most necessary. Also, we propose to require certain safety and quick release termination equipment, such as time clock, barometric or radio controlled devices, capable of removing the balloon and its payload from the airspace in the event malfunction, unsuitable weather, or hazardous conditions arise.

Although the data sought by free balloons is generally obtained above 44,000 feet (standard pressure altitude), where airplane operations are limited, occasionally there are requirements for free balloons to operate at lower altitudes. The earlier draft release required unmanned free balloons to be operated above 44,000 feet, however, this requirement has been deleted from this proposal. This approach appears to be more realistic in view of the launching and tracking notification, marking, lighting and weather requirements which would be imposed on the balloon operator. These precautions would ensure that the balloon would be operated in a manner that would make it easily seen and avoided.

Section 60.1 of the Air Traffic Rules, states in part, "the Air Traffic Rules of this part shall apply to aircraft operated anywhere in the United States, * * *" Since unmanned free balloons are within

the definition of aircraft, they are subject to all the provisions contained therein. The scope of Part 60 would be amended to exclude unmanned free balloons from its provisions.

This proposal is subject to the FAA Recodification Program, announced in Draft Release No. 61-25 (26 F.R. 10698). The final rule, if adopted, may be in a recodified form, however, the recodification itself will not alter the substantive contents proposed herein.

In consideration of the foregoing, it is proposed that Parts 48 and 60 of the Civil Air Regulations be amended as follows:

1. By amending § 48.1 to read:

§ 48.1 Applicability.

This part applies to the operation of moored balloons, kites and unmanned free balloons in the United States.

NOTE: Radio transmitting equipment used in conjunction with operations under this part must be licensed as required by the Federal Communications Commission, Washington 25, D.C.

2. By amending Part 48 to include a new Subpart D to read:

Subpart D—Unmanned Free Balloons

§ 48.30 Applicability.

(a) This subpart applies to the operation of any unmanned free balloon which:

(1) Carries a payload package in excess of four pounds that has a size/weight ratio exceeding three ounces per square inch on any surface of such package;

(2) Carries a payload package in excess of six pounds;

(3) Carries a payload, consisting of more than one package, whose total weight is in excess of 12 pounds; or

(4) Uses a rope or other device for suspension of the payload that requires a force in excess of 50 pounds for separation of the suspended payload from the balloon.

(b) Operations conducted within restricted areas must comply only with § 48.31 (b) and (e) and with such additional limitation as may be imposed by the using agency or controlling agency.

§ 48.31 Operating limitation.

An unmanned free balloon may not be operated:

(a) In a control zone below 2,000 feet above the surface or in an airport traffic area unless authorized by air traffic control;

(b) During the first 1,000 feet of ascent, over a congesteti area of a city, town or settlement or an open-air assembly of persons not associated with the operation;

(c) At any altitude where clouds or obscuring phenomena of more than five tenths coverage prevail;

(d) At any altitude below 60,000 feet standard pressure altitude (SPA) where the horizontal visibility is less than five miles; or

(e) In such manner that impact of the balloon, or portion thereof including its payload, with the surface creates a hazard to persons or property not associated with the operation.

§ 48.32 Equipment and marking requirements.

Each person operating an unmanned free balloon:

(a) Shall provide a barometric, timed, radio-controlled, or similar termination device and shall provide for such device to activate if the weather conditions imposed by this subpart preclude further operations, or if malfunction or other reasons make further operation hazardous to other air traffic or to persons or property on the surface.

(b) Shall provide lighting on the balloon which is visible for at least five miles when the balloon is operated below 60,000 feet SPA at night, as corrected to the altitude of operation.

(c) Equipped with a trailing antenna, shall attach to the antenna, at no more than 50 foot intervals, colored pennants or streamers which are visible from at least one mile. They are not required, if the trailing antenna can be broken at any point by a force of 50 pounds or less.

§ 48.33 Notice requirements.

(a) *Prelaunch notice:* Except as provided in paragraph (b) of this section, the following shall be forwarded to the nearest FAA air traffic facility (Air Route Traffic Control Center, Airport Traffic Control Tower, Flight Service Station) at least six hours but not more than 24 hours prior to the launching of an unmanned free balloon:

(1) Balloon identification;

(2) Estimated date and time of launching, amended as necessary to remain within plus or minus 30 minutes;

(3) Geographical location of launching site;

(4) Cruising altitude;

(5) Forecast trajectory and estimated time to cruising altitude or 44,000 feet SPA, whichever is lower;

(6) Length of balloon and payload, and length of trailing antenna, if used;

(7) Duration of flight; and

(8) Forecast time and location of impact with the surface of the earth.

(b) For solar or cosmic disturbance investigation operations involving a critical time element, the information in paragraph (a) of this section shall be forwarded at least 30 minutes but not more than 24 hours prior to the launching.

(c) *Cancellation notice:* If the operation is cancelled, the nearest FAA air traffic facility shall be notified immediately.

(d) *Launch notice:* The nearest FAA or military air traffic facility shall be notified immediately of the launch time.

§ 48.34 Balloon position reports.

Each person operating an unmanned free balloon shall:

(a) Monitor the course of the balloon and record its position at least every two hours and as further required by air traffic control.

(b) Forward to the nearest FAA air traffic facility the following balloon information two hours and one hour prior to the descent phase:

(1) Current geographical position;

(2) Altitude;

(3) If applicable, forecast time of penetration of 44,000 feet SPA in descent;

(4) Forecast trajectory for balance of flight; and

(5) Forecast time and location of impact with the surface of the earth.

(c) Notify the nearest FAA air traffic facility immediately if a position is not recorded for any two hour period of flight. Such notice shall include the last recorded position and any revision to the forecast trajectory. The nearest FAA air traffic facility shall be notified immediately when tracking is re-established.

(d) Notify the nearest FAA air traffic facility upon termination of the balloon operation.

3. By amending § 60.1 of Part 60 to include a new paragraph (c), to read:

§ 60.1 Scope.

* * * * *

(c) Unmanned free balloons.

This amendment is proposed under the authority of section 307 of the Federal Aviation Act of 1958 (72 Stat. 749; 49 U.S.C. 1348).

Issued in Washington, D.C., on October 26, 1962.

D. D. THOMAS,
Director, Air Traffic Service.