AC NO: 21-4B

DATE: 7/30/69

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: SPECIAL FLIGHT PERMITS FOR OPERATION OF OVERWEIGHT AIRCRAFT

---

1. PURPOSE. This circular provides information and guidance with respect to application for, and issuance of special flight permits to operate an aircraft in excess of its maximum certificated takeoff weight, for flight beyond the normal range over water, or over land areas where adequate landing facilities or appropriate fuel is not available.

2. CANCELLATION. AC No. 21-4A, effective 9/16/66, is cancelled.

3. REFERENCE.

   a. Federal Aviation Regulations (FAR) Part 21, Sections 21.197(b) and 21.199.

   b. International Flight Information Manual. (This Federal Aviation Administration manual is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.)

4. GENERAL. FAR 21.197(b) limits the excess weight that may be authorized for overweight operations to additional fuel, fuel carrying facilities, and navigational equipment necessary for the flight. Guidance and information specifically applicable to the applicant's proposed flight may be obtained from any Federal Aviation Administration District or Area Office. The following paragraphs provide general information which should be helpful to the applicant.

   a. Application for a special flight permit is made on FAA Form 8130-6 "Application for Airworthiness Certificate." (A sample form is in Appendix 1). FAR 21.199 establishes the general application requirements.

Initiated by: FS-180

AUTHENTICATED U.S. GOVERNMENT INFORMATION GPO

b. FAR Part 43 prescribes requirements for approval, return to service, and alteration records associated with the installation of additional facilities. Appendix B of FAR Part 43 and Advisory Circular 43.9-1B give instructions for completion of the FAA Form 337, on which alterations are recorded.

c. It is recommended that the applicant discuss the proposed flight with the manufacturer of the aircraft or an FAA-approved repair station, to determine the availability of technical data on the installation of additional fuel carrying facilities and/or navigational equipment.

d. Before flight to a foreign country of an aircraft having a special flight permit authorizing overweight operation, the applicant should determine whether operating requirements may be imposed by that country, and any other country on the route of flight, because of the condition of the aircraft. (See Section D on the reverse side of the Special Airworthiness Certificate, FAA Form 8130-7.) A request for permission to operate over or within a foreign country should include a statement describing the deviations from the FAA airworthiness standards. (Such deviations, in effect, would also be deviations from the airworthiness standards of Annex 8 to the Convention on International Civil Aviation (ICAO), since the FAA standards meet ICAO requirements.) With respect to an aircraft operating under FAR 21.197(b), the statement may be worded as follows: "This aircraft does not comply with the International Airworthiness Standards of Annex 8 to the Convention on International Civil Aviation when operated at a weight in excess of its maximum certificated takeoff weight because of the additional fuel, fuel carrying facilities, and navigation equipment installed in the aircraft." (Note: The words "and navigation equipment" should not be used if such additional equipment is not required for the flight.)

e. If the aircraft is being exported, the applicant must comply with any applicable requirements established by the Departments of State, Treasury, and Commerce, and, if an FAA Export Certificate of Airworthiness is required, with the applicable regulations in FAR Part 21, Subpart L. The FAA International Flight Information Manual also provides guidance with respect to the requirements for navigation and operation of aircraft in foreign countries, as well as other miscellaneous information of value to persons contemplating flights outside of the United States.

5. CRITERIA USED TO DETERMINE THE SAFETY OF ADDITIONAL FACILITIES. In approving the installation of additional facilities, the FAA must find that the altered aircraft is safe for operation. To assist in arriving at such a determination, the following questions are normally considered:

a. Does the technical data include installation drawings, structural substantiating reports, weight, balance, new center of gravity limits computations, and aircraft performance limitations in sufficient detail to allow a conformity inspection of the aircraft to be made?

b. In what ways does the aircraft not comply with the applicable airworthiness requirements (See FAR 21.199(a)(4))?

c. Are the fuel tanks vented to the outside? Are all areas in which tanks are located ventilated to reduce fire, explosion, and toxicity hazards?

d. Are the tanks even when empty strong enough to withstand the differential pressure at maximum operating altitude for a pressurized aircraft?

e. Have means been provided for determining the fuel quantity in each tank prior to flight?

f. Are shutoff valves, accessible to the pilot, provided for each additional tank to disconnect these tanks from the main fuel system?

g. Are the additional fuel tank filler connections designed to prevent spillage within the aircraft during servicing?

h. Is the engine oil supply and cooling adequate for the extended weight and range?

6. LIMITATIONS. The following types of limitations may be necessary for safe operation of the aircraft (Reference FAR 21.199(a)(6)):

a. Revised operational airspeeds for use in the overweight condition.

b. Increased pilot skill requirements.

c. A prescribed sequence for using fuel from various tanks as necessary to keep the aircraft within its center of gravity range.

d. Notification to the control tower of the overweight takeoff condition to permit use of a runway to minimize flight over congested areas.

e. Avoidance of severe turbulence. If encountered, the aircraft should be inspected for damage as soon as possible.

f. Notification to the nearest District or Area Office located at the point of departure from the U. S. in sufficient time for that office to determine that the aircraft still conforms to the terms and conditions of the special flight permit.

R. S. Slift

acting Director
Flight Standards Service

Example of an Application for a Special Flight Permit for Operation in Excess of Maximum Certificated Takeoff Weight

(Face Side)

Form Approved
Budget Bureau No. 04-R0058

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

APPLICATION FOR AIRWORTHINESS CERTIFICATE

INSTRUCTIONS—Print or type. Do not write in shaded areas, these are for FAA use only. Submit original only to an authorized FAA Representative. If additional space is required, use an attachment. For special flight permits complete Sections II and VI or VII as applicable.

I. AIRCRAFT DESCRIPTION

1. REGISTRATION MARK	2. AIRCRAFT BUILDER'S NAME (make)	3. AIRCRAFT MODEL DESIGNATION	4. YR MFG.	FAA CODING
5. AIRCRAFT SERIAL NO	**6. ENGINE BUILDER'S NAME (make)**	**7. ENGINE MODEL DESIGNATION**		
8. NUMBER OF ENGINES	**9. PROPELLER BUILDER'S NAME (make)**	**10. PROPELLER MODEL DESIGNATION**	**11. AIRCRAFT IS**	
			NEW	USED / IMPORT

II. CERTIFICATION REQUESTED

APPLICATION IS HEREBY MADE FOR: (Check applicable items)

A	1		STANDARD AIRWORTHINESS CERT (Indicate category)	NORMAL		UTILITY		ACROBATIC		TRANSPORT		GLIDER	BALLOON
B		X	SPECIAL AIRWORTHINESS CERTIFICATE (Check appropriate items)										
	2		LIMITED										
	5		PROVISIONAL (Indicate class)	1		CLASS I							
				2		CLASS II							
	3		RESTRICTED (Indicate operation(s) to be conducted)	1		AGRICULTURE & PEST CONTROL	2		AERIAL SURVEYING	3		AERIAL ADVERTISING	
				4		FOREST (Wild life conservation)	5		PATROLLING	6		WEATHER CONTROL	
				0		OTHER (Specify)							
	4		EXPERIMENTAL (Indicate operation(s) to be conducted)	1		RESEARCH AND DEVELOPMENT	2		AMATEUR BUILT	3		EXHIBITION	
				4		RACING	5		CREW TRAINING	6		MKT. SURVEY	
				0		TO SHOW COMPLIANCE WITH FAR							
	8	X	SPECIAL FLIGHT PERMIT (Indicate operation to be conducted then complete Section VI or VII as applicable on reverse side)	1		FERRY FLIGHT FOR REPAIRS, ALTERATIONS, MAINTENANCE OR STORAGE							
				2		EVACUATE FROM AREA OF IMPENDING DANGER							
				3	X	OPERATION IN EXCESS OF MAX. CERTIFICATED TAKE-OFF WEIGHT							
				4		DELIVERING OR EXPORT	5		PRODUCTION FLIGHT TESTING				
C	6		MULTIPLE AIRWORTHINESS CERTIFICATE (Check appropriate Restricted Operation and Standard or Limited as applicable above)										

III. OWNER'S CERTIFICATION

A. REGISTERED OWNER (As shown on Certificate of Aircraft Registration) — IF DEALER, CHECK HERE →

NAME	ADDRESS

B. AIRCRAFT CERTIFICATION BASIS (Check applicable blocks and complete items as indicated)

AIRCRAFT SPECIFICATION OR TYPE CERTIFICATION DATA SHEET (Give No. and Revision No.)	AIRWORTHINESS DIRECTIVES (Check if all applicable AD's complied with and give latest AD No.)
AIRCRAFT LISTING (Give page No(s).)	SUPPLEMENTAL TYPE CERTIFICATE (List number of each STC incorporated)

C. AIRCRAFT OPERATION AND MAINTENANCE RECORDS

CHECK IF RECORDS IN COMPLIANCE WITH FAR 91.173	TOTAL AIRFRAME HOURS—Enter for used aircraft only	3	EXPERIMENTAL ONLY—Enter hours flown since last certificate issued or renewed

D. CERTIFICATION—I hereby certify that I am the owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958, and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is airworthy and eligible for the airworthiness certificate requested.

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE

IV. INSPECTION AGENCY VERIFICATION

A. THE AIRCRAFT DESCRIBED ABOVE HAS BEEN INSPECTED AND FOUND AIRWORTHY BY: (Complete this section only if FAR 21.183 (d) applies)

2	FAR PART 121 OR 127 CERTIFICATE HOLDER (Give Certificate No.)	3	CERTIFICATED MECHANIC (Give Certificate No.)	6	CERTIFICATED REPAIR STATION (Give Certificate No.)
5	AIRCRAFT MANUFACTURER (Give Name of Firm)				

DATE	TITLE	SIGNATURE

V. FAA REPRESENTATIVE CERTIFICATION

I have inspected the aircraft described in item I or VII and find it meets the requirements for:

A. STANDARD AIRWORTHINESS CERTIFICATE	X	B. SPECIAL AIRWORTHINESS CERTIFICATE	
4	C. AMENDMENT OR MODIFICATION OF ITS CURRENT AIRWORTHINESS CERTIFICATE		

DATE	DISTRICT OFFICE	4	DESIGNEE'S SIGNATURE AND NO.	1	FAA INSPECTOR'S SIGNATURE
7/10/69	CE-GADO-1 /				Richard C. Smith Richard C. Smith

FAA Form 8130-6 (3-69) SUPERSEDES FAA FORM 305 AND FAA FORM 8100-3

Example of an Application for a Special Flight Permit for Operation in Excess of Maximum Certificated Takeoff Weight

(Reverse Side)

VI. PRODUCTION FLIGHT TESTING

A. MANUFACTURER

NAME	ADDRESS

B. PRODUCTION BASIS (Check applicable item)

- ☐ PRODUCTION CERTIFICATE (Give production certificate number)
- ☐ TYPE CERTIFICATE ONLY
- ☐ APPROVED PRODUCTION INSPECTION SYSTEM

C. GIVE QUANTITY OF CERTIFICATES REQUIRED FOR OPERATING NEEDS:

DATE OF APPLICATION	NAME AND TITLE (Print or type)	SIGNATURE

VII. SPECIAL FLIGHT PERMIT PURPOSES OTHER THAN PRODUCTION FLIGHT TEST

A. DESCRIPTION OF AIRCRAFT

REGISTERED OWNER	ADDRESS
John J. Doe	1492 North Street St. Louis, Missouri 12345
BUILDER (Name)	**MODEL**
Beech	D50A
SERIAL NUMBER	**REGISTRATION MARK**
4321	N1234Z

B. DESCRIPTION OF FLIGHT

FROM	TO	
St. Louis, Missouri	Honolulu, Hawaii	
VIA	**DEPARTURE DATE**	**DURATION**
Oakland, California	July 15, 1969	15 days

C. CREW REQUIRED TO OPERATE THE AIRCRAFT AND ITS EQUIPMENT

☒ PILOT ☒ CO-PILOT ☐ NAVIGATOR ☐ OTHER (Specify)

D. THE AIRCRAFT DOES NOT MEET THE APPLICABLE AIRWORTHINESS REQUIREMENTS AS FOLLOWS:

The aircraft does not meet the applicable airworthiness requirements when operated at a weight in excess of its certificated weight of 6300 lbs. The temporary fuel tank installation is in accordance with Flight Inc., Drawing 2-26189 and FAA Form 337 "Major Repair and Alteration" dated June 15, 1969, issued by CE-GADO-17.

E. THE FOLLOWING RESTRICTIONS ARE DEEMED NECESSARY FOR SAFE OPERATION (Use additional if necessary)

1. When the aircraft is overweight, the cruising speed (Vc) should not exceed 185 m.p.h. and the maximum speed (Vne) should not exceed 205 m.p.h.
2. The sequence of use for the auxiliary fuel tanks, as shown by a temporary placard on the instrument panel, should be aft, forward, center.
3. The fuel quantity should not exceed 106 gallons in the forward tank, 164 gallons in the center tank, and 45 gallons in the aft tank.

F. CERTIFICATION—I hereby certify that I am the registered owner (or his agent) of the aircraft described above; that the aircraft is registered with the Federal Aviation Administration in accordance with Section 501 of the Federal Aviation Act of 1958; and applicable Federal Aviation Regulations; and that the aircraft has been inspected and is airworthy for the flight described

DATE	NAME AND TITLE (Print or type)	SIGNATURE
July 2, 1969	John J. Doe	John J. Doe

VIII. AIRWORTHINESS DOCUMENTATION (FAA use only)

A. Operating Limitations and Markings in Compliance with FAR 91.31 as Applicable	G. Statement of Conformity, FAA Form 317 (Original if new aircraft)
B. Current Operating Limitations Attached	H. Foreign Airworthiness Certification for Import Aircraft (If such aircraft is listed)
C. Data, Drawings, Photographs, etc.	I. Previous Airworthiness Certificate Issued in Accordance with FAR _____ CAR _____ (Original attached)
D. Current Weight and Balance Information Appropriate to Aircraft	J. Current Airworthiness Certificate Issued in Accordance with FAR _____ (Copy attached)
E. Major Repair and Alteration, FAA 337	
F. This Inspection Recorded in Aircraft Records	

* U.S. GOVERNMENT PRINTING OFFICE: 1969 O—347-330

Example of a Special Airworthiness Certificate
Issued to Permit Operation in Excess of Maximum
Certificated Takeoff Weight

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION — FEDERAL AVIATION ADMINISTRATION
SPECIAL AIRWORTHINESS CERTIFICATE

A	CLASSIFICATION: Special Flight Permit		
	PURPOSE: Operation in excess of max. certificated T.O. weight		
B	MANUFACTURER	NAME N/A	
		ADDRESS N/A	
C	FLIGHT	FROM St. Louis, Missouri	
		TO Honolulu, Hawaii	
D	N—1234Z		SERIAL NO. 4321
	BUILDER Beech		MODEL D50 A
E	DATE OF ISSUANCE 7/10/69		EXPIRY 7/30/69
	OPERATING LIMITATIONS DATED: 7/10/69		ARE A PART OF THIS CERTIFICATE
	SIGNATURE OF FAA REPRESENTATIVE VALID Richard C. Smith Richard C. Smith		DESIGNATION OR OFFICE NO. CE-GADO-17

Any alteration, reproduction, or misuse of this certificate may be punishable by a fine not exceeding $1,000 or imprisonment not exceeding 3 years, or both. THIS CERTIFICATE MUST BE DISPLAYED IN THE AIRCRAFT IN ACCORDANCE WITH APPLICABLE FEDERAL AVIATION REGULATIONS.

FAA FORM 8130-7 (3-69) SUPERSEDES FAA FORMS 1362-B; 8100-3; 8130-5 *SEE REVERSE SIDE*

(Face Side)

A	This airworthiness certificate is issued under the authority of the Federal Aviation Act of 1958 and the Federal Aviation Regulations (FAR).
B	This airworthiness certificate authorizes the manufacturer named on the reverse side to conduct production flight tests, and only production flight tests, of aircraft registered in his name. No person may conduct production flight tests under this certificate: (1) Carrying persons or property for compensation or hire; and or (2) Carrying persons not essential to the purpose of the flight.
C	This airworthiness certificate authorizes the flight specified on the reverse side for the purpose shown in Block A.
D	This airworthiness certificate certifies that, as of the date of issuance, the aircraft to which issued has been inspected and found to meet the requirements of the applicable FAR. The aircraft does not meet the requirements of the applicable comprehensive and detailed airworthiness code as provided by Annex 8 to the Convention On International Civil Aviation. No person may operate the aircraft described on the reverse side: (1) except in accordance with the applicable FAR and in accordance with conditions and limitations which may be prescribed by the Administrator as part of this certificate; (2) over any foreign country without the special permission of that country.
E	Unless sooner surrendered, suspended, or revoked, this airworthiness certificate is effective for the duration and under the conditions prescribed in FAR Part 21, Section 21.181 or 21.217.

(Reverse Side)

Example of Operating Limitations Which May be Prescribed as Part of the Special Airworthiness Certificate Shown on Page 3 of this Appendix

Aircraft Make: Beech Model: D50A

Serial No: 4321 Ident. Marks: N1234Z Issue Date: 7/10/69

OPERATING LIMITATIONS

1. Maximum weight must not exceed 8,150 pounds.

2. Maximum quantity of fuel carried in auxiliary tanks must not exceed 106 gallons in fwd tank, 164 gallons in center tank, and 45 gallons in aft tank.

3. Center of gravity limits must not exceed (fwd) +116.8 and (aft) +124.6.

4. Acrobatics are prohibited.

5. Use of autopilot while in overweight condition is prohibited.

6. Weather conditions with moderate to severe turbulence should be avoided.

7. When an overweight landing is made or the aircraft has been flown through moderate or severe turbulence while in an overweight condition, the aircraft must be inspected for damage after landing. The inspections performed and the findings must be entered in the aircraft log. The pilot must determine, before the next takeoff, that the aircraft is airworthy.

8. When operated in the overweight condition, the cruising speed (Vc) shall not exceed 185 m.p.h. and the maximum speed (Vne) shall not exceed 205 m.p.h.

9. Operation in the overweight condition must be conducted to avoid areas having heavy air traffic, to avoid cities, towns, villages, and congested areas, or any other areas where such flights might create hazardous exposure to person or property on the ground.

10. Prior to requesting clearance to takeoff position, the pilot in command must advise the tower of the overweight condition and of any limitations with respect to a specific runway or prescribed meteorological conditions.

11. The pilot-in-command shall contact the Oakland General Aviation District Office (WE-GADO-7), 9636 Earhart Road, P. O. Box 2397, Airport Station, Oakland, California 94614, telephone (415) 569-8879, prior to arrival at Oakland, in sufficient time for review of the ferry permit and FAA inspection of the aircraft before departure for Honolulu.