

NORTHWEST MOUNTAIN REGION AIRCRAFT CERTIFICATION DESIGNEE NEWSLETTER



US Department
of Transportation

**Federal Aviation
Administration**

Aircraft
Certification
Division

Northwest Mountain Region
Seattle, WA 98168
(206) 764-7049



ABOUT THE COVER

McDonnell Douglas Model MD-100 Airplane

McDonnell Douglas recently gave a briefing on the new MD-100 airplane to the Los Angeles Aircraft Certification Office. The MD-100 is a derivative of the DC-10 with improved performance through the use of a 60-inch shortened fuselage and advanced technology improvements such as a two-crewmember advanced flight deck system, composite material structure, improved alloys, and energy-efficient engines. The airplane will be capable of carrying 270 passengers in a mixed-class configuration.

Candidate engines include the advanced technology Pratt & Whitney PW4000, GE CF6-80C2, and Rolls Royce RB 211-60, with takeoff thrust ratings ranging from 48,000 lbs to 62,000 lbs.

NOTE: Each month we plan to feature a different aircraft and would like to use your submissions. If you have a photo that measures no larger than 8 1/2 X 8 1/4, please submit the photo and your article to the Newsletter Editor, FAA, Aircraft Certification Division, ANM-100, Northwest Mountain Region, 17900 Pacific Highway S., C-68966, Seattle, WA 98168.

INTRODUCTION

With the rapid growth in aviation in the late 1950s, the designee system was implemented as an alternate to increasing the FAA staffing. The FAA Act of 1958 included provisions which allowed the Administrator to appoint and supervise qualified persons to act as his representatives. This concept has been very successful from both the standpoint of safety and savings to all of us taxpayers.

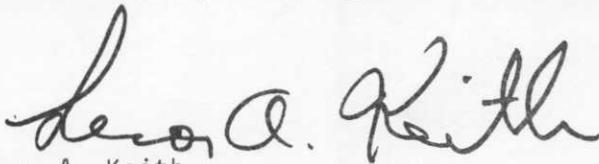
It is recognized that the FAA cannot accomplish the certification mission alone. Aviation will continue to grow with technological advances beyond our expectations. For us to continue the success of the designee system, the communication lines between designees and their FAA counterparts must be improved. It is our responsibility to keep you informed of pertinent issues, changes in regulations and their interpretation, and other tools for assistance in accomplishing your tasks as the Administrator's representative.

There must be complete freedom of communication between the designees themselves, and between designees and the aircraft certification offices. We encourage frequent contacts as a means for establishing and continuing good coordination and open lines of communication.

This newsletter is intended as one means of improving communications and keeping you informed. It will be issued on a regular basis and will contain newsworthy items involving the following areas:

- Regulatory activities, changes, and philosophy.
- Guidance material (Advisory Circulars, Orders, etc.).
- DER/DMIR responsibilities.
- Directorate activities.
- Specific technical issues (fatigue, damage tolerance, composites, avionics, fly-by-wire, etc.).
- National Resource Specialist (NRS) activity.
- Personnel actions/changes (within FAA, designee appointments, etc.).
- Designee meetings held/planned (significant discussion issues, etc.).

You should be proud of the job you do for the FAA and the traveling public who are carried in the aircraft we certificate together. We appreciate your help. We are always open to suggestions and comments for further improvements.



Leroy A. Keith
Manager, Aircraft Certification Division

LETTERS TO THE EDITOR

Let us know what you think!

This newsletter is designed to respond to your needs as our regional designees. We welcome your ideas and suggestions for the newsletter. Let us know if you have any comments or if you have any particular areas of interest we can address. Send your comments to the Newsletter Editor, FAA, Aircraft Certification Division, ANM-100, Northwest Mountain Region, 17900 Pacific Highway S., C-68966, Seattle, WA 98168.

FORECAST SEES AVIATION GROWTH

Better times are in sight for aviation, according to FAA's "Aviation Forecasts for Fiscal Years 1983-1994."

With the return of the air traffic control system to full capacity and the upturn in the economy, the forecasts see significant gains across the board for the airlines, commuters, and general aviation. All of this means higher annual activity levels at FAA air traffic control facilities.

Some of the key growth indicators in the forecasts are a 70 percent jump in airline travel with passenger traffic passing the 500 million mark in FY-1994; a 46 percent increase in the size of the general aviation fleet with the number of aircraft going from 215,000 to 315,000, and 135 percent growth in commuter activity, with passengers increasing from 17.6 million to 41.5 million.

NEW CATEGORY OF DESIGNEES

Part 183 of the Federal Aviation Regulations (FARs) is being amended to provide for the establishment of Designated Airworthiness Representatives (DARs) as a new category of persons to act as representatives of the Administrator. It is anticipated that this amendment will be effective by the end of April 1983. When fully implemented the DAR program should have a most favorable impact on FAA resources since services which would otherwise be provided by the FAA will be accomplished by appointed DARs. This expansion of the designee program was deemed necessary since the delegations previously provided for in Part 183 constrained the Federal Aviation Administration's ability to deal with the proliferation of requests for FAA certification services.

Any qualified person (including organizations) may be authorized to represent the FAA as a DAR for the purpose of performing certain examination, inspection, and testing functions relative to certification actions in the areas of maintenance, manufacturing, and engineering. DAR authority will be limited to the issuance of original airworthiness certificates; the issuance of original export airworthiness approvals; and conformity inspections, as required.

More will follow concerning this new designee category in future Newsletters.

NEW SUPPLIER SURVEILLANCE PROCEDURES

On July 22, 1982, the FAA issued Advisory Circular (AC) 21-20, "Supplier Surveillance Procedures." This advisory circular abolished scheduled quality control audits of domestic and foreign suppliers and established special supplier audits on an "as needed" basis. The new policy recognizes the fact that production approval holders have final responsibility for ensuring that foreign and domestic products conform to approved type design and are in condition for safe operation.

FAR 23 AIRFRAME POLICY PROGRAM REVIEW

The Small Airplane Certification Directorate in Kansas City is conducting an airframe policy program review. In conjunction with this review, the FAA has scheduled a meeting with Industry and GAMA representatives in Wichita, Kansas on June 8, 1983, to submit their views on airframe policy. The results of the policy review will be published in a future Notice of Proposed Rulemaking (NPRM) to inform the public and other interested parties of activity in this area.

SPECIAL FEDERAL AVIATION REG. (SFAR) SFAR 41 REINSTATED

As a result of a number of petitions for exemption and rulemaking submitted to the FAA, the provisions of SFAR 41B, which expired October 17, 1981, were reinstated in SFAR 41C. SFAR 41C, which became effective September 13, 1982, also amended the regulation as follows:

1. Eliminated the 12,500 pound maximum zero fuel weight restriction.
2. Limited the number of passenger seats to 19 for small propeller-driven multi-engine airplanes that operate at a take-off weight in excess of 12,500 pounds.
3. Revised the landing distance requirements consistent with Parts 23 and 25.

COMPOSITE MATERIALS TEXTBOOK

Volume I of FAA's Composite Material Textbook, "Fiber Composite Analysis and Design," has been completed in draft form by Materials Sciences Corporation (MSC). The two-volume textbook is an outgrowth of the composite material technology course being presented to FAA engineers by MSC. Volume I, titled "Composite Materials and Laminates," will remain in draft pending completion of Volume II, "Structures," to accommodate possible additions. The textbook is scheduled for completion by the end of 1983.

NEW FAR 103-ULTRALIGHT VEHICLES; OPERATING REQUIREMENTS

The operating requirements for ultralight vehicles have been published in the Federal Register, Volume 47, Number 171, dated Thursday, September 2, 1982, (FR 38770). The effective date was October 4, 1982. In summary, the amendment establishes rules governing the operation of ultralight vehicles in the United States. The rule defines ultralight vehicles in two categories: powered and unpowered. To be considered an ultralight vehicle, a hang glider must weigh less than 155 pounds, while a powered vehicle must weigh less than 254 pounds, is limited to 5 U.S. gallons of fuel, must have a maximum speed of not more than 55 knots, and must have a power-off stall speed of not more than 24 knots. Both powered and unpowered ultralight vehicles are limited to a single occupant. Those vehicles which exceed the above criteria will be considered aircraft for purposes of airworthiness certification and registration, and their operators will be subject to the same certification requirements as are aircraft operators.

COMPOSITE AIRCRAFT STRUCTURES

A revision to Advisory Circular (AC) 20-107, Composite Aircraft Structure, is underway at the Office of Airworthiness, FAA Washington Headquarters. The revision will reflect state-of-the-art technology advances, and has been submitted to the Federal Register for publication requesting public comments.

Advisory Circular (AC) 20-107, Composite Aircraft Structure, should not be applied as conditions for the type certification of gliders, including fixed-wing and self-launching (powered) gliders, under FAR 21.23. AC 20-107 assumes a type certification basis (i.e., FARs 23, 25, 27, and 29) that includes a higher level of fail-safe, safe-life, and/or damage tolerance constitution than that envisaged by FAR 21.23. It should, however, be recommended to applicants who are pursuing type certification of gliders with composite structures that they consider using AC 20-107 to assist them in developing better designs.

ROTORCRAFT OFFICE ESTABLISHED BY AGENCY

Recognizing the growing importance of helicopters in air transportation, the FAA has established a Rotorcraft Program Office in Washington Headquarters. Mr. Jerry Chavkin has been appointed to be Director of this new program. The Rotorcraft Program Office will serve as the focal point for all FAA rotorcraft matters. The first major task of the office is to complete work on an agency master plan for rotorcraft through the year 2000.

FAR REFERENCES TO MIL-HANDBOOKS

The MIL-Handbooks listed in various FAR paragraphs (e.g., 25.613) are available from:

Naval Publications and Forms Center
5801 Tabor Avenue
Philadelphia, Pennsylvania 19120
Telephone (215) 697-3311

The reference to the Government Printing Office (GPO) in the FARs is incorrect. The GPO does not provide MIL-Handbooks.

REGULATION BY OBJECTIVE (RBO) - NEW PART 120

The FAA has taken the first step to implement a new concept in aviation operation safety regulations known as "Regulation by Objective (RBO)." The purpose of RBO is to replace the present method of developing detailed rules that specify both safety objectives and the means for accomplishing these objectives with a more flexible system that would foster innovative ways of achieving desired safety levels.

One of the first regulations to be written using the Regulation by Objective philosophy is the new Part 120 that was issued September 20, 1982, in a Notice of Proposed Rulemaking. The proposed Part 120 would replace FAR Parts 121 and 135, which govern most commercial flights.

The new Part 120 would incorporate the safety objectives inherent in Parts 121 and 135 but the methods of compliance would be spelled out in advisory circular form rather than in the rule itself.

Operators would have the option of selecting the method of compliance but all changes would require FAA review and approval.

HAND FIRE EXTINGUISHER FOR USE IN AIRCRAFT

Advisory Circular (AC) 20-42B, Hand Fire Extinguishers for Use in Aircraft, was approved on August 25, 1982. This AC updates methods for showing compliance with the hand fire extinguisher provisions in FAR Parts 25, 29, 91, 121, 125, 127, and 135. The AC has been expanded to include detailed information, precautions, helpful hints, information on the use of Halon 1211, and nomographs for compartment air change time.

MINOR OBSTRUCTIONS, FAR 25.813(c)

We were recently asked for an interpretation of FAR 25.813(c)(2) regarding side facing divan soft seat back cushions which protrude into the emergency exits on transport airplanes. The concern was whether the protuberance of the divan's cushions constituted a minor obstruction of the exit opening.

The interpretation, which was issued to all certification directorates nationwide, was that no protuberances may be allowed into the minimum required exit opening. The only allowable exception is a maximum encroachment of two inches of the cushion if the cushion can be easily compressed to clear the exit opening. Berths or divans, whether made or unmade, should be installed so as not to impair the accessibility of the emergency exits.

Along the same lines, we have become aware that divans installed on certain transport airplanes have been modified so that seat back cushions protrude into a major portion of the exit. Since such modifications may be contrary to FAR 25.813(c)(2), we recommend that you coordinate with us prior to approving such a modification.

EXPORT REQUIREMENTS, AC 21-2E

The most recent export airworthiness approval procedures have been incorporated in Advisory Circular 21-2E. The AC contains the special requirements that have been submitted to the FAA by foreign governments.

Some of the principal changes from the previous AC 21-2D include:

- a. All references to the Republic of China have been changed to Taiwan.
- b. New special requirements have been added for the Republic of Portugal.
- c. Bilateral Airworthiness Agreement Composite Charts were revised to reflect an amendment to the U.S./Polish Bilateral Airworthiness Agreement.
- d. A Transport Canada flight manual requirement was added.
- e. A Botswana requirement for an emergency locator beacon was added.

DMIRs should stay in contact with their Manufacturing District Office to keep abreast of these special export provisions.

FAA NATIONAL RESOURCE SPECIALIST HONORED

FAA's James J. Treacy has been honored by Aviation Week and Space Technology for his "significant contribution" to aviation in 1982. A National Resource Specialist in avionics assigned to the Northwest Mountain Region, Treacy was one of 36 people in the aerospace industry selected by the magazine editors for special mention in the January 9, 1983, issue. He was cited for "technical guidance in defining and executing FAA policy for certification of the new digital avionics in both the 767 and 757 transports." A 13-year FAA veteran, Treacy has been working out of the Seattle Office since 1975.

EMERGENCY LIGHTING FAR 25.812(k)

We recently issued an interpretation of FAR 25.812(k) concerning emergency exit lights. FAR 25.812(k) requires that certain emergency exit lights remain operative after a single transverse separation of the fuselage unless the lights are directly damaged. There has been some discussion as to where battery packs for the emergency exits may be located and yet still ensure that the signs remain operative. We have interpreted the regulation to mean that the battery packs may be placed between the frames that form the edge of the exit or, where the exit sign is beside the door, the battery may be located at the same fuselage station as any part of the sign.

You should coordinate with us prior to issuing any approvals which deviate from the criteria listed above.

AIRCRAFT CERTIFICATION DIVISION ORGANIZATION CHART

Attached for your information is the Transport Airplane Directorate Aircraft Certification Division Organizational Chart.

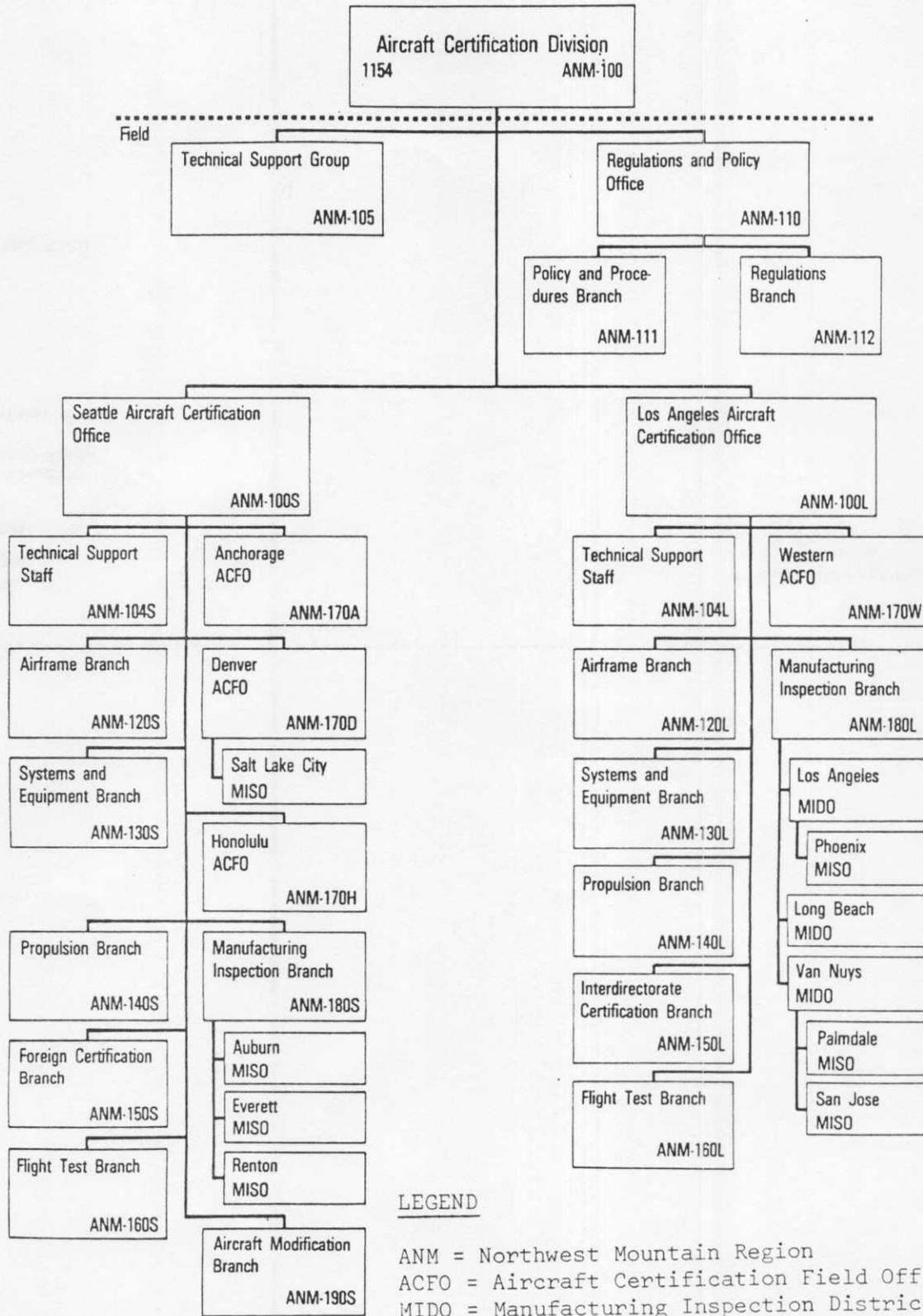
The Regional Headquarters Building is located at 17900 Pacific Highway South, Seattle, WA, 98168. The Seattle Aircraft Certification Office is located at 9010 East Marginal Way South, Seattle, WA 98108. The Los Angeles Aircraft Certification Office is located at 4344 Donald Douglas Drive, Long Beach, CA, 90808.

Any revisions to the organization chart will be forwarded to you with future Designee Newsletters.

AIRCRAFT CERTIFICATION PERSONNEL AND PHONE LISTING

The Aircraft Certification Division will be changing phone systems in the near future. When the changeover is accomplished, a new personnel and phone listing will be published in our next newsletter.

Figure 11-3. Aircraft Certification Division



LEGEND

- ANM = Northwest Mountain Region
- ACFO = Aircraft Certification Field Office
- MIDO = Manufacturing Inspection District Office
- MISO = Manufacturing Inspection Satellite Office