

INTERNATIONAL CIVIL AVIATION ORGANIZATION
FIRST MEETING OF DIRECTORS OF CIVIL AVIATION OF THE
CARIBBEAN REGION (CAR/DCA/1)

(Grand Cayman, Cayman Islands, 8-11 October 2002)

Agenda Item 5: Human Resources Planning and Training

Aviation Training Courses

(Presented by the United States of America)

SUMMARY

This paper provides information on upcoming training courses provided by the Federal Aviation Administration's Academy in Oklahoma City, Oklahoma.

I. Introduction

1.1 Throughout the global air transportation system, safety is the paramount issue. The Federal Aviation Administration (FAA) shares with aviation authorities worldwide mutual responsibility for international aviation safety and security. The FAA fulfills its international mission in a number of ways including participating with other nations in the International Civil Aviation Organization (ICAO) and with regional organizations to establish international standards for the safe and efficient operation of civil aircraft. The variety of U.S. aviation technology and its diverse applications by the FAA create unique opportunities for aviation authorities throughout the world to benefit from FAA experience.

1.2 The international aviation system is dynamic, complex, and critical to the world's economic well-being and progress. Harmonization of rules, practices, procedures and standards is essential to bring about global improvements. Technical training and staff development will continue to play a vital role in fostering effective changes.

2. Discussion

2.1 Technical assistance in international civil aviation takes many forms, but at its heart is training. The primary source of FAA aviation training is the FAA Academy located at the Mike Monroney Aeronautical Center in Oklahoma City, Oklahoma. The Aeronautical Center is a vital service and support facility for the FAA and the Department of Transportation (DOT). The Center's primary functions are training, logistics, research and service. The Center is home to the largest concentration of employees in the Department. Almost every aviation-related activity is supported by the Center's vast facilities and operations. Access to FAA and other DOT operational resources enhances training and provides a very effective learning environment.

2.2 In addition to the FAA Academy, the Center is home to the Transportation Safety Institute (TSI), the Civil Aeromedical Institute (CAMI), and the U.S. Coast Guard Institute. These organizations provide specialized technical training in aviation and related transportation safety and security areas. TSI is the primary source of training in transportation safety for DOT and other federal agencies. TSI's safety training programs have a direct impact on DOT's mission to reduce deaths and injuries in transportation. CAMI is the medical certification, research, education, and occupational health wing of the FAA's Office of Aviation Medicine. CAMI promotes aviation safety through aeromedical education programs, which select, train and evaluate Aviation Medical Examiners, and train pilots and FAA aircrews in physiological and survival skills. The Coast Guard Institute is responsible for administering correspondence study courses and advancement examinations used for Coast Guard training.

3. Conclusion

3.1 The meeting is invited to take note of the information presented in this paper and to review the attached course description for the instrument approach procedures using ICAO's Procedures for Air Navigation Services – Operations (PANS-OPS). Also attached is a schedule of the FAA's international courses that will be held through September 2003.

3.2 For further information on the FAA's international training programs please contact the FAA at:

Federal Aviation Administration
Office of International Aviation
International Training
800 Independence Ave., SW
Washington, DC 20591
Telephone: (202) 267-3173
Facsimile: (202) 267-5032
E-mail: 9-awa-aia-intl-training@faa.gov

INSTRUMENT PROCEDURE DESIGN USING THE INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) STANDARDS IN PROCEDURES FOR AIR NAVIGATION SERVICES - OPERATIONS (PANS-OPS)

DESCRIPTION

This is a basic course in designing instrument approach procedures using the standards contained in the International Civil Aviation Organization (ICAO) Procedures for Air Navigation Services - Operations (PANS-OPS), Vol. II, ICAO Doc. 8168. Other ICAO documents containing PANS and Standards and Recommended Practices (SARPS) are referenced during the course. The course covers: general criteria; design of non-precision approaches; design of precision approaches; applications of the ICAO Collision Risk Model (CRM); design of area navigation (RNAV) procedures; design of GNSS procedures; and helicopter procedures. The training format includes lectures, presentation of examples, desk exercises, and practical laboratory exercises in designing instrument approach procedures.

OBJECTIVES

Using references the participants will be able to demonstrate:

- Knowledge of general ICAO criteria applicable to approach procedure design, including applications of aircraft speeds, altitude effects, temperature effects, establishing fix tolerances, turn rates, turn radii, wind effects and other general principles, and other performance and environmental factors affecting procedure design.

- Application of criteria to the design of non-precision approach design.

- Application of criteria to the design of precision approaches.

- Application of the ICAO CRM and interpreting results.

- Application of criteria to RNAV and GNSS procedures.

- Use of maps and charts in procedure design.

- Interpretation of approach charts.

- Preparation of a simple draft approach chart.

- Preparation of records of work done in the laboratory design work.

- Performance of geodetic calculations for preparation of procedures using earth-referenced navigation.

WHO SHOULD ATTEND

The course is primarily directed to persons with the background for procedure design and to fill the initial training needs of persons who will be involved in the design of instrument approach procedures or in the evaluation and approval of procedures, therefore the course is rigorous. However, the course would be of significant benefit to persons managing organizations under which procedures are designed, pilots - particularly those involved in flight inspection, and persons in related fields such as airport design, air traffic, charting, aircraft operation and other related disciplines.

COURSE OUTLINE

Aviation principles related to procedure design
General criteria
Aircraft performance
Environmental effects
 Temperature
 Altitude
Turn performance calculations
Climbs and descents - gradients and rates
Speeds: IAS and TAS calculations and applications
Wind effects and allowances - wind spirals
Organization and Application of ICAO Documents
Non-Precision Approaches
VOR
NDB
Laboratory Procedure Design Exercise
Precision Approaches
ILS
MLS
CRM operation and application
Laboratory Procedure Design Exercise
Course Reversals
Departures
Conventional
RNAV
Area Navigation (RNAV)
VOR/DME
DME/DME
GNSS Approach Procedures
System operation
Waypoints
Geodetic Calculations
Procedure Design Criteria
Laboratory Procedure Design Exercise
Helicopter Criteria