

DPE Meeting

Training Device Types, Use and Credit.

Presented to: DPE Participants

By: Steve Moore, Aviation Safety Inspector

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Federal Aviation
Administration



FSTD

Flight Simulation Training Devices (FSTD) are Full Flight Simulator (FFS) or Flight Training Devices (FTD)

- **FFS – Levels A through D.**
- **FTD – Levels 4 through 7.**
- **Evaluated Annually by NSP (ASO-205).**
- **Statement of Qualification (SOQ). Valid for 12 months.**
- **Training Approved by the TPAA.**
- **14 CFR Part 60**



FFS – Full Flight Simulator



FSTD

- **Grandfathering allowed.**
- **Former approvals for FSTDs are permitted.**
- **Guidance doc. for FFS - AC121-14 (1969-1976), AC121-14A (1976-1978), AC121-14B (1978-1980), AC121-14C (1980-1983), AC120-40 (1983-1986), AC120-40A (1986-1991), 14 CFR 121 Appendix H, (1991-1996), AC120-40C Draft (1996-2008), 14 CFR 60 (2008-Present).**
- **Guidance doc. for FTD AC120-45 (1987-1992), AC120-45A (1992-2008), 14 CFR 60 (2008-Present).**



FFS

Level A

Static Control Loading.

Three Axis - Pitch, Roll and Yaw.

Night Scene.

45 Degrees X 30 Degrees field of view.

Some cockpit noise.



FFS

Level B

Static Control Loading.

Three Axis - Pitch, Roll and Yaw.

Night Scene.

45 Degrees X 30 Degrees field of view.

Some cockpit noise.

Ground Handling Packet.



FFS

Level C

Static and Dynamic control loading.

Six Axis-Pitch, Roll, Yaw, Heave, Surge, Sway

Day, Dusk, and Night Scenes.

180 Degrees X 40 Degrees field of view.

Significant Cockpit Noise.

Ground Handling Package.

Feel and See some Runway Contaminates.



FFS

Level D

Static and Dynamic control loading.

Six Axis-Pitch, Roll, Yaw, Heave, Surge, Sway

Day, Dusk, and Night Scenes.

180 Degrees X 40 Degrees field of view.

Realistic Cockpit Noise.

Ground Handling Package.

Feel and See Runway Contaminates.

Operating Weather Radar.



FTD- Flight Training Device



FTD

Level 4

Open or Enclosed Flight Deck Area.

Air and Ground Logic.

At Least One Operating System.

Displays maybe Flat, LCD, or Actual.

Controls, Switches, Knobs maybe touch screen or physical controls.



FTD

Level 5

Open or Enclosed Flight Deck Area.

Generic Aerodynamic Programming.

At Least One Operating System.

Displays maybe Flat, LCD, or Actual.

Controls, Switches, Knobs maybe touch screen.

Primary and secondary flight control must be physical controls.



FTD

Level 6

Enclosed Flight Deck Area.

Airplane Specific Aerodynamic Programming.

All applicable Operating Systems.

Control Loading.

**All Controls, Switches, Knobs must be
physical controls.**

Significant Sound Representation.



- Level 7 Flight Training Device



FTD

Level 7

Helicopter Only!

Same as airplane level 6 except:

At least 146 degree horizontal and 36 degree vertical Visual systems.

Vibration cueing system as characterized by helicopter at pilot station.



ATD – Aviation Training Device



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Aviation Training Device (ATD)

- **Basic Aviation Training Device (BATD).**
- **Advanced Aviation Training Device (AATD).**
- **Approval granted by AFS-800.**
- **Must have an approved Qualification and Approval Guide (QAG).**
- **Letter of Authorization (LOA). Valid for 5 years. Has an expiration date.**



Aviation Training Device (ATD)

LOA, QAG, and Performance Information must be available for student/instructor review.

No approvals or authorization are provided for aircraft type ratings using ATDs.



Example LOA- AATD

THIS DOCUMENT IS THE LATEST REVISION AS OF 02Jan2015 - UNCONTROLLED ONCE PRINTED.



U.S. Department
of Transportation
Federal Aviation
Administration

200 Independence Ave. SW
Washington, DC 20591

NOV 6 5 2014

Mr. Jonathan Wisdom
FSTD Regulatory Affairs SMC
Frasca International, Inc.
906 Airport Road
Urbana, Illinois 61802-7407

Dear Mr. Wisdom:

The Federal Aviation Administration (FAA) last qualified and approved your helicopter Model 342 device as an Flight Training Device (FTD) on February 9, 2005 in accordance with Title 14 Code of Federal Regulations (14 CFR) section (§) 61.4(e). This training device was found to meet the criteria for an FTD as described in FAA Advisory Circular AC 120-45A.

Starting on January 1, 2015, the FAA requires all Letters of Authorization (LOA) to contain an expiration date to remain valid. The FAA issued the previous LOA for the Model 342 without an expiration date. Based on the previous approval and review of the Qualification and Approval guide dated October 15, 2014, the Frasca model 342 is authorized for use as a helicopter AATD in satisfying the following sections of Title 14 of the Code of Federal Regulations parts 61 and 141:

Frasca Model 342 Helicopter Advanced Aviation Training Device (AATD)

- § 61.51(b)(3)(iii) Logbook entries;
- § 61.51(h)(1) – Logging training time;
- § 61.57(c)(2) – Instrument experience;
- § 61.57(c)(4)(iii) – Instrument experience;
- § 61.57(c)(5)(ii) – Instrument experience;
- § 61.57(d)(1)(ii) – Instrument proficiency check, per the Instrument PTS;
- § 61.65(?) – Instrument rating;
- § 61.129(j)(1)(ii) – Commercial Pilot Certificate: up to 25 hours;
- § 61.161(a)(2) – Airline Transport Pilot Certificate: up to 25 hours; and
- § 141.41(c) – Approved for use under the Part 141 Appendices as follows:
 - *Appendix C* – As allowed under 4(c) toward the total instrument flight training time requirements;



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ATD

- **Guidance Document for ATDs is AC61-136A and FAA Order 8900.1 Volume 11, Chapter 10, Section 1.**
- **No Grandfathering.**
- **Former approvals for Ground Trainers, Level 1 through 3 FTDs, PCATDs, and ATD (not approved by AFS-800) without expiration dates are terminated.**



ATD

- **BATD**

- **In accordance with AC61-136A, Appendix 2.**
- **Acceptable cockpit configuration and instrument panel design.**
- **Perform operational functions and maneuvers that closely mimic representative aircraft.**



ATD

- **AATD**

- In accordance with AC61-136A, Appendix 3.
- Same as BATD with the addition of :
- Realistic cockpit, knobs, switches, and controls.
- GPS.
- Autopilot.
- Day/Night/VFR/IFR Visual System.
- Separate instruction station.
- No Motion and No Control Loading required.



Testing and Checking Credit

FFS and FTD:

In accordance with 14 CFR 61.64, testing and/or checking only under Part 141, 142, 121, or 135 approved training program is allowed.

Use appropriate PTS appendix chart.

ATD: No Testing or Checking allowed (exception IPC in an AATD in accordance with the Instrument PTS)



Appendix 1 FSTD Credit

Appendix 1: Flight Simulation Training Device Credit

Task vs. Flight Simulation Training Device (FSTD) Credit

Examiners conducting the instrument rating practical tests with Flight Simulation Training Devices (FSTDs) should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking, and assigned the appropriate qualification level in accordance with the requirements of 14 CFR part 60. The FAA must approve the device for training, testing, and checking the specific flight TASKS listed in this appendix. The device must continue to support the level of student or applicant performance required by this practical test standard.

If an FSTD is used for the practical test, the instrument approach procedures conducted in that FSTD are limited to one precision and one nonprecision approach procedure.

Use of Chart

- X Creditable
- A Creditable if appropriate systems are installed and operating

Note: Users of the following chart are cautioned that use of the chart alone is incomplete. The description and objective of each Task as listed in the body of the practical test standard, including all Notes, must also be incorporated for accurate FSTD use.

"Postflight Procedures" means closing flight plans, checking for discrepancies and malfunctions, and noting them on a log or maintenance form.

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FAA-S-8081-4E



Appendix 1 FSTD Credit

FAA-S-8081-4E

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Flight Task Areas of Operation	Flight Simulation Training Device (FSTD) Level							
	4*	5*	6*	7*	A*	B*	C	D
II. Preflight Procedures								
C. Instrument Cockpit Check	A	A	X	X	X	X	X	X
III. Air Traffic Control Clearances and Procedures								
A. Air Traffic Control Clearances	A	A	X	X	X	X	X	X
B. Departure, En Route and Arrival Clearances	-	-	X	X	X	X	X	X
C. Holding Procedures	-	-	X	X	X	X	X	X
IV. Flight by Reference to Instruments								
A. Basic Instrument Flight Maneuvers	-	-	X	X	X	X	X	X
B. Recovery from Unusual Flight Attitudes	-	-	-	X	X	X	X	X
V. Navigation Systems								
A. Intercepting and Tracking Navigational Systems and DME ARCS	-	A	X	X	X	X	X	X
VI. Instrument Approach Procedures								
A. Nonprecision Approach (NPA)	-	-	X	X	X	X	X	X
B. Precision Approach (PA)	-	-	X	X	X	X	X	X
C. Missed Approach	-	-	X	X	X	X	X	X
D. Circling Approach	-	-	-	-	X	X	X	X
E. Landing from a Straight-in or Circling Approach	-	-	-	-	-	X	X	X
VII. Emergency Operations								
A. Loss of Communications	-	-	X	X	X	X	X	X
B. One Engine Inoperative during Straight-and-Level	-	-	X	X	X	X	X	X
C. One Engine Inoperative—Instrument Approach (Multiengine Airplane)	-	-	-	-	X	X	X	X
D. Loss of Gyro Attitude and/or Heading Indicators	-	-	X	X	X	X	X	X
VIII. Postflight Procedures								
A. Checking Instruments and Equipment	-	A	X	X	X	X	X	X

*Aircraft required for those items that cannot be checked using an FSTD

Appendix 1: Flight Simulation Training Device Credit



Training Credit

Part 61 Instrument Rating

FFS and FTD:

30 hours under Part 142 or 20 hours if not under Part 142 (14 CFR 61.65(h))

Authorized Instructor Required.

ATD:

Instrument Rating (14 CFR 61.65(i)) – 10 hours Maximum. Check LOA.

Authorized Instructor Required.



Training Credit

- **Part 141 Appendix C**

FFS:

No more than 50% of course requirement.

FTD:

No more than 40% of course requirement.

ATD:

No more than 10% of course requirement.

Authorized Instructor Required.



Training Credit

- **Commercial Certificate**

FFS or FTD:

Airplane 100 hours if under Part 142 or 50 hours if NOT under Part 142.

Helicopter 50 hours if under Part 142 or 25 hours if NOT under Part 142.

Authorized Instructor Required.

ATD:

Check LOA.



Training Credit

- **Part 141 Appendix D**

FFS:

No more than 30% of course requirement.

FTD:

No more than 20% of course requirement.

Combination:

No more than 30% of Course requirement.

ATD:

Check LOA.



Training Credit

- **ATP Certificate (Airplane)**

FFS or FTD:

Of the 75 hours of instrument, not more than 25 hours or 50 hours under Part 142.

Of the 1,500 hour not more than 100 hours if obtained training under Part 121, 135, 141, or 142.

ATD:

Check LOA.



Training Credit

- **ATP Certificate (Helicopter)**

FFS or FTD:

Of the 75 hours of instrument, not more than 25 hours or 50 hours under Part 142.

ATD:

Check LOA.



Training Credit

- **Part 141 Appendix E**

FFS:

No more than 50% of course requirement.

FTD:

No more than 25% of course requirement.

Combination:

No more than 50% of course requirement.

ATD:

Check LOA.



Logbook Entries

14 CFR 61.51:

Type and Identification of Device.

Description of the training given

The length of the training lesson.

**The authorized instructor signature,
certificate number, and certification
expiration date.**



Logbook Entries

Caution

Any logbook columns that reference flight time must remain blank when logging training in a ATD.

There is no restriction on the amount of training logged in the devices, just that amount of credit that maybe given toward certificates and ratings.



QUESTIONS?

