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Flight Standardization Board Report

Revision: 1
Date: 12/23/2020

Manufacturer Viking Air Limited

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A9EA as modified in accordance with Supplemental Type Certificate (STC) SA02267LA	DHC-6-300	Twin Otter	DHC-6

Approved by the Aircraft Evaluation Division
Federal Aviation Administration
Small Aircraft Evaluation Group
901 Locust Street, Room 332
Kansas City, MO 64106

Office Telephone: (816) 329-3233
Office Fax: (816) 329-3241
Office Email: 9-AVS-AFS-100@faa.gov

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1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	08/25/2010
1	All	12/23/2020

2. INTRODUCTION

Aircraft Evaluation Groups (AEG) are responsible for working with aircraft manufacturers and modifiers, during the development and Federal Aviation Administration (FAA) certification of new and modified aircraft to determine:

- 1) The pilot type rating,
- 2) Flightcrew member training, checking, and currency requirements, and
- 3) Operational suitability.

This report lists those determinations for use by:

- 1) FAA employees who approve training programs,
- 2) FAA employees and designees who certify airmen, and
- 3) Aircraft operators and training providers, to assist them in developing their flightcrew member training, checking, and currency.

3. HIGHLIGHTS OF CHANGE

This is a revision of the original Flight Standardization Board Report (FSBR), dated 08/25/2010. This revision was completed for 508 compliance purposes and to update this report in the most current template. Change bars are not included in this document because the entire report is revised and updated. No technical evaluation was completed for this revision.

4. BACKGROUND

The Small Aircraft AEG formed a Flight Standardization Board (FSB) that evaluated the DHC-6-300. The normal category DHC-6-300 is defined in FAA Type Certificate Data Sheet (TCDS) No. A9EA. The DHC-6-300 is modified in accordance with FAA Supplemental Type Certificate (STC) No. SA02267LA.

FAA STC No. SA02267LA allows the aircraft to be operated up to 14,000 lb. The DHC-6-300 aircraft, when eligible and approved can operate up to 14,000 lb as a large aircraft. The aircraft is powered by two PT6A-27 engines that are de-rated to produce 620 shaft horsepower (shp). Flight controls are mechanical for roll, pitch, and yaw. Flaps are hydraulically driven and no leading edge devices are installed. The avionics is a standard six-pack instrumentation system. The aircraft can be equipped with an autopilot.

The evaluation was conducted in 2010 using the methods described in FAA Advisory Circular (AC) 120-53A, Guidance for Conducting and Use of Flight Standardization Board Evaluations.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACFT Aircraft
- ACS Airman Certification Standards
- AEG Aircraft Evaluation Group
- AGL Above Ground Level
- ATP Airline Transport Pilot
- AV Audiovisual Presentation
- CG Center of Gravity
- CPT Cockpit Procedures Trainer
- FAA Federal Aviation Administration
- FFS Full Flight Simulator
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report
- FSTD Flight Simulation Training Device
- FTD Flight Training Device
- HO Handout
- ICBI Interactive Computer-Based Instruction
- MDR Master Differences Requirements
- MFF Mixed Fleet Flying
- NAS National Airspace System
- OEI One-Engine-Inoperative
- PIC Pilot in Command
- PTT Part Task Trainer
- STC Supplemental Type Certificate
- SU Stand-Up Instruction
- TC Type Certificate
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- V₁ Takeoff Decision Speed
- V₂ Takeoff Safety Speed
- V_{SSE} Safe, Intentional OEI Speed
- W&B Weight and Balance

6. DEFINITIONS

These definitions are for the purposes of this report only.

- 6.1 Base Aircraft.** An aircraft identified for use as a reference to compare differences with another aircraft.
- 6.2 Current.** A crewmember meets all requirements to operate the aircraft under the applicable operating part.
- 6.3 Differences Tables.** Describe the differences between a pair of related aircraft, and the minimum levels operators must use to conduct differences training and checking of flightcrew members. Differences levels range from A to E.
- 6.4 Master Differences Requirements (MDR).** Specifies the minimum levels of training and checking required between a pair of related aircraft, derived from the highest level in the Differences Tables.
- 6.5 Mixed Fleet Flying (MFF).** The operation of a base aircraft and one or more related aircraft for which credit may be taken for training, checking, and currency events.
- 6.6 Operational Evaluation.** The AEG process to determine pilot type rating, minimum flightcrew member training, checking, and currency requirements, and unique or special airman certification requirements (e.g., specific flight characteristics, no-flap landing).
- 6.7 Operational Suitability.** The AEG determination that an aircraft or system may be used in the National Airspace System (NAS) and meets the applicable operational regulations (e.g., Title 14 of the Code of Federal Regulations (14 CFR) parts 91, 121, 133, and 135).
- 6.8 Qualified.** A flightcrew member holds the appropriate airman certificate and ratings as required by the applicable operating part.
- 6.9 Related Aircraft.** Any two or more aircraft of the same make with either the same or different type certificates (TC) that have been demonstrated and determined by the Administrator to have commonality.
- 6.10 Seat-Dependent Tasks.** Maneuvers or procedures using controls that are accessible or operable from only one flightcrew member seat.
- 6.11 Special Emphasis Area.** A training requirement unique to the aircraft, based on a system, procedure, or maneuver, which requires additional highlighting during training. It may also require additional training time, specialized flight simulation training devices (FSTD), or training equipment.
- 6.12 Specific Flight Characteristics.** A maneuver or procedure with unique handling or performance characteristics that the FSB has determined must be checked.

7. PILOT TYPE RATING

7.1 Type Rating. The DHC-6-300 type rating designation is DHC-6.

7.2 Common Type Ratings. Not applicable.

7.3 Military Equivalent Designations. Military aircraft that qualify for the DHC-6 type rating can be found at www.faa.gov under “Licenses & Certificates,” “Airmen Certification,” “Online Services,” “Aircraft Type Rating Designators.” This webpage is kept up-to-date and can be found at https://www.faa.gov/licenses_certificates/airmen_certification/.

8. RELATED AIRCRAFT

8.1 Related Aircraft on Same TCDS. Not applicable.

8.2 Related Aircraft on Different TCDS. Not applicable.

9. PILOT TRAINING

9.1 Airman Experience. Airmen receiving initial DHC-6-300 training should hold at least a private pilot airplane, multiengine land certificate with an instrument airplane rating. Pilots without this experience may require additional training.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during ground training:

- a) Weight and Balance (W&B) calculations and center of gravity (CG) computations. This item must be included in initial, recurrent, and upgrade training.
- b) Supplemental operating limitations and procedures. This item must be included in initial, recurrent, and upgrade training.
- c) Integrated use of the autopilot (if installed), including knowledge of selectable functions, capabilities, and airspeed limitations. This item must be included in initial, recurrent, and upgrade training.

9.2.2 Pilots must receive special emphasis on, and perform the following areas during flight training:

- a) Taxiing the aircraft with emphasis on use of the tiller. This item must be included in initial, recurrent, and upgrade training.

- b) Integrated use of the autopilot (if installed), including knowledge of selectable functions, capabilities, and airspeed limitations. This item must be included in initial, recurrent, and upgrade training.
- c) Crosswind landing techniques at or near maximum demonstrated crosswind components. This item must be included in initial, recurrent, and upgrade training.

9.3 Specific Flight Characteristics. Maneuvers or procedures required to be trained as referenced in the Airline Transport Pilot (ATP) and Type Rating for Airplane Airman Certification Standards (ACS), as applicable.

NOTE: There are no specific flight characteristics.

9.4 Seat-Dependent Tasks. There are no seat-dependent tasks.

9.5 Regulatory Training Requirements Which Are Not Applicable to the DHC-6-300. None.

9.6 FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the DHC-6-300 that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the DHC-6-300 that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Not applicable.

10. PILOT CHECKING

10.1 Landing from a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the DHC-6-300 is not extremely remote due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification is required. During a § 91.1065 or § 135.293 competency check, this task may be required.

NOTE: Refer to FAA Order 8900.1, Volume 5, Airman Certification, when the test or check is conducted in an aircraft versus a full flight simulator (FFS).

10.2 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the ATP and Type Rating for Airplane ACS, as applicable.

NOTE: There are no specific flight characteristics.

10.3 Seat-Dependent Tasks. There are no seat-dependent tasks.

10.4 Other Checking Items. Not applicable.

10.5 FSTDs. There are no specific systems, procedures, or maneuvers that are unique to the DHC-6-300 that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the DHC-6-300 that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Not applicable.

11. PILOT CURRENCY

There are no additional currency requirements for the DHC-6-300 other than those already specified in parts 61 and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The DHC-6-300 is operationally suitable for operations in the National Airspace System. The list of operating rules was not provided by Viking Air Limited in 2010 to evaluate. Therefore, it is the responsibility of the responsible Flight Standards office to review operator compliance with pertinent rules.

13. MISCELLANEOUS

13.1 Forward Observer Seat. No forward observer seat was evaluated.

13.2 Aircraft Approach Category. The DHC-6-300 is considered a Category B aircraft for the purposes of determining the appropriate instrument approach procedure category in accordance with § 97.3.

13.3 Normal Landing Flaps. The DHC-6-300 normal “final flap setting” per § 91.126(c) is 20°.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	<ul style="list-style-type: none"> • Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO) 	<ul style="list-style-type: none"> • Crew has already demonstrated understanding on base aircraft (e.g., updated version of engine). • Minor or no procedural changes required. • No safety impact if information is not reviewed or is forgotten (e.g., different engine vibration damping mount). • Once called to attention of crew, the difference is self-evident.
B	Aided Instruction	<ul style="list-style-type: none"> • Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU) 	<ul style="list-style-type: none"> • Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	<ul style="list-style-type: none"> • Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5) 	<ul style="list-style-type: none"> • Training can only be accomplished through systems training devices. • Training objectives focus on mastering individual systems, procedures, or tasks versus highly integrated flight operations or “real-time” operations. • Training devices are required to assure attainment or retention of crew skills to accomplish more complex tasks usually related to aircraft systems.
D	Maneuvers Devices	<ul style="list-style-type: none"> • Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B) 	<ul style="list-style-type: none"> • Training can only be accomplished in flight maneuver devices in a real-time environment. • Training requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	Level C/D FFS or Aircraft	<ul style="list-style-type: none"> • Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT) 	<ul style="list-style-type: none"> • Motion, visual, control-loading, audio, and specific environmental conditions are required. • Significant full-task differences that require a high fidelity environment. • Usually correlates with significant differences in handling qualities.

Checking Differences Legend

Differences Level	Checking Method Examples	Conditions
A	None	None
B	<ul style="list-style-type: none"> • Oral or written exam • Tutorial computer-based instruction (TCBI) self-test 	Individual systems or related groups of systems.
C	<ul style="list-style-type: none"> • Interactive (full-task) computer-based instruction (ICBI) • Cockpit Procedures Trainers (CPT) • Part task trainers (PTT) • Level 4 or 5 flight training device (FTD 4-5) 	<ul style="list-style-type: none"> • Checking can only be accomplished using systems devices. • Checking objectives focus on mastering individual systems, procedures, or tasks.
D	<ul style="list-style-type: none"> • Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B) 	<ul style="list-style-type: none"> • Checking can only be accomplished in flight maneuver devices in a real-time environment. • Checking requires mastery of interrelated skills versus individual skills. • Motion, visual, control-loading, and specific environmental conditions may be required.
E	<ul style="list-style-type: none"> • Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT) 	Significant full-task differences that require a high fidelity environment.

APPENDIX 2. MASTER DIFFERENCES REQUIREMENTS (MDR) TABLE

Not applicable.

APPENDIX 3. DIFFERENCES TABLES

Not applicable.