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Washington, DC

Flight Standardization Board Report

Revision: 3
Date: XX/XX/XXXX

Manufacturer
Honda Aircraft Company

Type Certificate Data Sheet (TCDS)	TCDS Identifier	Marketing Name	Pilot Type Rating
A00018AT	HA-420	HondaJet HondaJet Elite HondaJet Elite S HondaJet Elite II	HA-420

Approved by the Aircraft Evaluation Division
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1. RECORD OF REVISIONS

Revision Number	Section(s)	Date
Original	All	01/15/2016
1	Cover Page, Table of Contents, Record of Revisions, Highlights of Change, 8.2.6, Appendix 4	09/28/2016
2	All	02/13/2019
3	1, 3, 4, 5, 8, 9, 10, 11, 12, 13, Appendices 2, 3, 4	XX/XX/XXXX

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

The purpose of this revision is for determination of differences training and checking from base aircraft HA-420 Elite, to related aircraft HA-420 Elite II (Elite S items). This revision converts this document to the new Flight Standardization Board Report (FSBR) format and complies with Section 508.

4. BACKGROUND

The General Aviation Branch formed an FSB that evaluated the Honda Aircraft Company HA-420 aircraft as defined in FAA Type Certificate Data Sheet (TCDS) #A00018AT. The evaluation was conducted in October 2015 in Greensboro, NC, using the methods described in FAA Advisory Circular (AC) 120-53B, Guidance for Conducting and Use of Flight Standardization Board Evaluations. For the remainder of this document, Honda Aircraft Company and Honda Aircraft are the same entity.

The electronic checklist (ECL) was evaluated after the completion of a formal FSB. The evaluation was completed in March of 2016 at the Honda Aircraft facility in Greensboro, NC.

On May 17, 2018, the FSB conducted flight evaluations in an HA-420 Elite (S/N 42000011) for Garmin 3000 software enhancements which primarily included automatic flight control system (AFCS) coupled go-around with underspeed protection (USP); AFCS electronic stability and protection (ESP) with roll and angle of attack functions; and integrated takeoff and landing data (TOLD) and performance (PERF) calculations. The HA-420 Elite model also included minor design changes in the fuel, electrical, and hydraulic systems. The aircraft, as well as the associated Airplane Flight Manual (AFM) change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 3, Differences Tables.

On November 16, 2022, the FSB conducted flight evaluations in an HA-420 Elite II (S/N 42000011) for the Augmented Nosewheel Steering System; the addition of Ground Spoilers; modified fuel system; avionics enhancements; upgrades to Garmin Line Replaceable Units due to obsolescence; Data Link capabilities; clearance based flight plan; increased weights; aft baggage capacity increase; expanded aft CG envelope; stabilized approach alerting; updates to the Take Off and Landing Data; and emergency auto-brake provisions. The aircraft, as well as the associated AFM change, was found to be operationally suitable. Training, checking, and currency requirements are listed in Appendix 3, Differences Tables.

5. ACRONYMS

- 14 CFR Title 14 of the Code of Federal Regulations
- AC Advisory Circular
- ACS Airman Certification Standards
- ACFT Aircraft
- AEG Aircraft Evaluation Group
- AFCS Automatic Flight Control System
- AFM Airplane Flight Manual
- AOA Angle of Attack
- APMG Advanced Performance Modification Group
- ATP Airline Transport Pilot
- AV Audiovisual Presentation
- CAS Crew Alert System
- CG Center of Gravity
- CPT Cockpit Procedures Trainer
- CRM Crew Resource Management
- ECL Electronic Checklist
- EFB Electronic Flight Bag
- ESP Electronic Stability and Protection
- FAA Federal Aviation Administration
- FFS Full Flight Simulator
- FMS Flight Management System
- FSB Flight Standardization Board
- FSBR Flight Standardization Board Report

- FSTD Flight Simulation Training Device
- FTD Flight Training Device
- GTC Garmin Touchscreen Controller
- HO Handout
- ICBI Interactive Computer-Based Instruction
- MDR Master Differences Requirements
- MEL Minimum Equipment List
- MFD Multifunction Display
- MMEL Master Minimum Equipment List
- MTOW Maximum Takeoff Weight
- NWS Nose Wheel Steering
- ODR Operator Differences Requirements
- OE Operating Experience
- Part 91K Part 91 Subpart K
- PERF Performance
- PFD Primary Flight Display
- PIC Pilot in Command
- PTT Part Task Trainers
- PTS Practical Test Standards
- QRH Quick Reference Handbook
- SIC Second in Command
- SOE Supervised Operating Experience
- SVS Synthetic Vision System
- SU Stand-Up Instruction
- TAWS Terrain Awareness and Warning System
- TCAS Traffic Alert and Collision Avoidance System
- TCBI Tutorial Computer-Based Instruction
- TCDS Type Certificate Data Sheet
- TOLD Takeoff and Landing Data
- USP Underspeed Protection
- V_1 Takeoff Decision Speed
- VNAV Vertical Navigation

6. DEFINITIONS

These definitions are for the purpose 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 the 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 Characteristic. 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 HA-420 type rating designation is HA-420 and may be operated with or without a second in command (SIC) with certain limitations. The AFM lists equipment that must be operative to operate the aircraft single pilot.

An HA-420 pilot type rating may be issued with the limitation “HA-420 Second in Command Required” as applicable.

7.2 Common Type Ratings. Not applicable.

7.3 Military Equivalent Designations. Military aircraft that qualify for the HA-420 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:

- **HA-420:** S/N 42000012 thru 42000125.
- **HA-420 Elite:** S/N 42000012 thru 42000125 with SB-420-55-001 (APMG); 42000126 thru 42000206.
- **HA-420 Elite S:** S/N 42000126 thru 42000206 with SB-420-42-016 or SB-420-32-013, SB-420-42-018 and SB-420-11-001 installed; S/N 42000207 thru 42000234.
- **HA-420 Elite II:** S/N 42000235 and up.

8.2 Related Aircraft on Different TCDS. Not applicable.

9. PILOT TRAINING

9.1 Airman Experience.

Airmen receiving HA-420 initial training will benefit from prior experience operating multi-engine turbojet aircraft. Additionally, a working knowledge of advanced aircraft systems, flight management systems (FMS) with electronic flight displays, and high altitude operations is highly recommended. Pilots without this experience may require additional training.

Airmen receiving differences and upgrade training are assumed to have previous experience in the aircraft type.

9.2 Special Emphasis Areas.

9.2.1 Pilots must receive special emphasis on the following areas during initial, recurrent, requalification, and transition ground training:

- Brake system. Brake antiskid logic.
- Nose wheel steering (NWS). Nose wheel positioning and control logic at touchdown and rollout. Adverse interaction of asymmetrical braking with NWS.
- Crosswind takeoff and landing. Unique limitations, cautions, warnings, and critical piloting techniques and procedures found in the AFM. Proper application of aircraft controls and hazards of incorrect aircraft controls application during two-engine and single-engine operations.

- Discuss what leads to yaw, divergence, and a loss of control about the vertical axis during rollout and how to quickly regain control (i.e., what control inputs improve stability and control during landing rollout and what inputs lead to divergence).
- Emergency descent mode.
- Traffic Alert and Collision Avoidance System (TCAS) and Terrain Awareness and Warning System (TAWS).
- Weather radar.
- Vertical navigation (VNAV) departure and arrival procedures.
- Operation with emergency power only.
- Emergency/abnormal quick reference handbook (QRH).
- Master Minimum Equipment List (MMEL)/minimum equipment list (MEL).
- Single-Pilot Resource Management and/or Crew Resource Management (CRM).
- ECL.
- Synthetic Vision System (SVS) operation.
- Risk assessment and risk management.

9.2.2 Pilots must receive special emphasis on and perform tasks related to the following areas during initial, recurrent, requalification, and transition flight training:

- Emergency descent mode.
- TCAS and TAWS.
- Weather radar.
- VNAV departure and arrival procedures.
- Emergency/abnormal QRH.
- Single-Pilot Resource Management and/or CRM.
- ECL.
- SVS operation.
- Crosswind takeoffs and landings. Adherence to cautions, warnings, and critical crosswind piloting techniques and procedures in the AFM (AFM limitations must not be exceeded). Including but not limited to:
  - Crosswind takeoffs and landings – two-engine and single-engine operations.
  - Crosswind rejected takeoff before takeoff decision speed (V_1).
- Demonstrate (simulator only) what leads to yaw, divergence, and a loss of control about the vertical axis during rollout and how to quickly regain control (i.e., what control inputs improve stability and control during landing rollout and what inputs lead to divergence).

  NOTE: When conducting crosswind training, the crosswind limitation and handling characteristics of the aircraft must be considered. Exposure to progressively increasing crosswind components should be weighed to ensure safe operation of the aircraft. Requirement for brake cooling during multiple takeoffs and landings should be emphasized.

9.2.3 Pilots must receive special emphasis on and perform tasks related to the following during initial flight training:

- Operation with emergency power only.

9.3 Specific Flight Characteristics. Maneuvers or procedures required to be checked as referenced in the Airline Transport Pilot (ATP) and Type Rating for Airplane Airman Certification Standards (ACS). There are no specific flight characteristics.

9.4 Seat-Dependent Tasks. There are no specific seat dependent tasks. However, the minimum crew determination listed in the AFM and the TCDS is one pilot in the left seat. As such, the pilot must occupy the left pilot seat for all pilot in command (PIC) training as a single pilot.

9.5 Regulatory Training Requirements Which Are Not Applicable to the HA-420. Part 135 ground training: propellers.

9.6 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the HA-420 that require a specific FSTD for training.

9.7 Training Equipment. There are no specific systems or procedures that are unique to the HA-420 that require specific training equipment.

9.8 Differences Training Between Related Aircraft. Pilots must receive differences training between the HA-420 series aircraft variations as applicable to their operation. The level of training is specified in Appendix 3, Differences Tables.

10. PILOT CHECKING

10.1 Landing from a No-Flap or Nonstandard Flap Approach. The probability of flap extension failure on the HA-420 is not extremely remote due to system design. Therefore, demonstration of a no-flap approach and landing during pilot certification or a part 61, § 61.58 proficiency check, part 91, § 91.1065 competency check, or part 135, § 135.293 competency check is required. 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. There are no specific flight characteristics.

10.3 Seat-Dependent Tasks. There are no specific seat dependent tasks. However, the minimum crew determination listed in the AFM and the TCDS is one pilot in the left seat. As such, the pilot must occupy the left pilot seat for all practical tests and proficiency checks as a single pilot.

10.4 Other Checking Items. Not applicable.

10.5 Flight Simulation Training Devices (FSTD). There are no specific systems, procedures, or maneuvers that are unique to the HA-420 that require a specific FSTD for checking.

10.6 Equipment. There are no specific systems or procedures that are unique to the HA-420 that require specific equipment.

10.7 Differences Checking Between Related Aircraft. Pilots must receive differences checking between HA-420 series aircraft variations as applicable to their operation. The level of checking is specified in Appendix 3, Differences Tables.

11. PILOT CURRENCY

There are no additional currency requirements for the HA-420 other than those already specified in parts 61, and 135.

11.1 Differences Currency Between Related Aircraft. Not applicable.

12. OPERATIONAL SUITABILITY

The HA-420 is operationally suitable for operations under parts 91, and 135. The FSB determined operational compliance by conducting an evaluation in October 2015. The list of operating rules evaluated is on file at the General Aviation Branch.

13. MISCELLANEOUS

13.1 Forward Observer Seat. HA-420 aircraft are not equipped with a dedicated forward observer seat. The HA-420 right cockpit seat, installed in accordance with TCDS #A00018AT, has been evaluated and determined to meet requirements of § 135.75(b) for use by the Administrator during enroute inspections and for the administration of flight tests leading to pilot certification or operating privileges. The right cockpit seat is the primary seat in the HA-420 to meet the regulations cited above. However, if that seat is occupied (i.e., for two-pilot crew operations), the side-facing seat across from the forward entry door is acceptable for conducting enroute inspections and line checks only. This is the only configuration that has been evaluated by the FSB. The operator must provide a means for the inspector to monitor communications between the crew and those external to the aircraft.

13.2 Aircraft Approach Category. The HA-420 is considered 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 HA-420 normal “final flap setting” per § 91.126(c) is “LDG”.

13.4 Electronic Flight Bag (EFB).

13.4.1 The EFB evaluation determined chart display functions to be suitable as one source for electronic display of airport diagrams, approach plates, arrival procedures, and departure procedures. Since chart information cannot be displayed in the event of certain avionics failures, a suitable backup is required. Approved AFM provides operating limitations for the installation.

13.4.2 The G3000 includes “FliteChart” and optional “ChartView” electronic charts. A specific system description for the system configuration appropriate to the installation is available in the approved AFM and Garmin G3000 Integrated Avionics System Pilot’s Guide.

13.5 Steep Approach. Steep approach has not been evaluated by the FSB.

13.6 ECL. See Appendix 4, Electronic Checklist Evaluation.

APPENDIX 1. DIFFERENCES LEGEND

Training Differences Legend

Differences Level	Type	Training Method Examples	Conditions
A	Self-Instruction	• Operating manual revision (handout (HO)) • Flightcrew operating bulletin (HO)	• 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	• Audiovisual presentation (AV) • Tutorial computer-based instruction (TCBI) • Stand-up instruction (SU)	• Systems are functionally similar. • Crew understanding required. • Issues need emphasis. • Standard methods of presentation required.
C	Systems Devices	• 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)	• 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	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• 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	• Level C or D full flight simulator (FFS C-D) • Aircraft (ACFT)	• 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	• Oral or written exam • Tutorial computer-based instruction (TCBI) self-test	Individual systems or related groups of systems.
C	• 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)	• Checking can only be accomplished using systems devices. • Checking objectives focus on mastering individual systems, procedures, or tasks.
D	• Level 6 or 7 flight training device (FTD 6-7) • Level A or B full flight simulator (FFS A-B)	• 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	• 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

These are the minimum levels of training and checking required, derived from the highest level in the Differences Tables in Appendix 3. Differences levels are arranged as training/checking.

To Related Aircraft ↓	From Base Aircraft →	HA-420	HA-420 Elite	HA-420 Elite II
HA-420		Not applicable	B/B	Not evaluated
HA-420 Elite		C/B	Not applicable	D/B
HA-420 Elite II		Not evaluated	B/B **	Not applicable

**Elite S differences which include Augmented Nosewheel Steering System, Increased Weights, Minor Avionics Enhancements, TOLD updates, Datalink, and associated Flight Manual were evaluated with Training/Checking established at Level B/B.

APPENDIX 3. DIFFERENCES TABLES

This Design Differences Table, from the HA-420 to the HA-420 Elite, was proposed by Honda Aircraft and validated by the Flight Standardization Board (FSB) on May 17, 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

NOTE: Optional equipment is delineated with a double asterisk **. Training and checking is not required if equipment is not installed on the operator's aircraft.

FROM BASE AIRCRAFT: HA-420 TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Limitations	Increased maximum takeoff weight (MTOW) by 100 lb. Weight limit increase for fuel and baggage. Center of gravity (CG) envelope expansion.	No	Yes	B	B
	Performance	Revised takeoff performance information.	No	No	A	A
	Performance	Integrated takeoff and landing data (TOLD) and performance (PERF) calculation.	No	Yes	B	B

FROM BASE AIRCRAFT: HA-420 TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 22 Autoflight	**Electronic Stability and Protection (ESP). **Coupled go-around with underspeed protection (USP).	No	Yes	C	B
	Dimensions	Horizontal stabilizer is 6 inches longer.	No	No	A	A
	Indication	Revised Crew Alert System (CAS) logic. CAS messages were added for new functionality with TOLD and ESP, and for the fuel system.	No	Yes	B	B
	Indication	The new software includes a pilot-selectable angle of attack (AOA) indicator situated on the primary flight display (PFD) below the airspeed tape.	No	No	A	A

FROM BASE AIRCRAFT: HA-420 TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 24 Electrical Power	The #1 (system) battery was changed from 28Ah to 17Ah, USB charging ports added at each pilot station and each club seat, and power feeds were added to accommodate new galley and future cabin systems.	No	No	B	A
	ATA 28 Fuel	Increase in fuel capacity. Remove outside fueling gage and added “Fuel Slowly” light.	No	Yes	B	A
	ATA 29 Hydraulic Power	Volume compensator was installed in the master cylinder command lines, and brake shutoff valve modified to prevent pilot-commanded brake applications during gear retraction. This improves brake feel during initial application. There is no change to braking performance.	No	No	B	A

This Maneuver Differences Table, from the HA-420 to the HA-420 Elite, was proposed by Honda Aircraft and validated by the FSB on May 17, 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: HA-420 TO RELATED AIRCRAFT: HA-420 Elite	MANEUVER	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Preflight Inspection	Changes in horizontal tail, elevator, removal of wingtip triangles.	No	No	A	A
	Cockpit Preparation	Integrated TOLD and PERF calculation.	No	Yes	B	B
	Navigation-Approach	Added visual approach as a selection in the Garmin 3000 database.	No	Yes	B	A
	Approach	**Coupled go-around with USP.	No	Yes	C	B
	All Phases of Flight	**Automatic Flight Control System (AFCS) protection modes USP and ESP.	No	Yes	C	B

This Design Differences Table, from the HA-420 Elite to the HA-420, was proposed by Honda Aircraft and validated by the FSB on May 17, 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: HA-420 Elite **TO RELATED AIRCRAFT: HA-420**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Limitations	Decreased MTOW by 100 lb. Weight limit decrease for fuel and baggage. CG Envelope change.	No	Yes	B	B
	Performance	Revised takeoff performance information.	No	Yes	A	A
	Performance	**Integrated TOLD and PERF calculation is optional.	No	Yes	B	B
	ATA 22 Autoflight	**AFCS coupled go-around, USP, and ESP not available.	No	Yes	B	A
	Dimensions	Horizontal stabilizer is 6 inches shorter.	No	No	A	A
	Indication	Revised CAS logic. Removed CAS messages for functionality with TOLD and ESP, and for the fuel system.	No	Yes	B	B

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Indication	Pilot-selectable AOA indicator not available.	No	No	A	A
	ATA 24 Electrical Power	The #1 (system) battery was changed from 17Ah to 28Ah. USB charging ports not installed. Power feeds not installed. New galley and future cabin systems not available.	No	No	B	A
	ATA 28 Fuel	Decrease in fuel capacity. “Fuel Slowly” light is not installed.	No	Yes	B	A
	ATA 29 Hydraulic Power	Volume compensator not installed in the master cylinder command lines, and brake shutoff valve not modified to prevent pilot-commanded brake applications during gear retraction. This brake feel during initial application is not improved. There is no change to braking performance.	No	No	B	A

This Maneuver Differences Table, from the HA-420 Elite to the HA-420, was proposed by Honda Aircraft and validated by the FSB on May 17, 2018. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: HA-420 Elite **TO RELATED AIRCRAFT: HA-420**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Inspection	Changes in horizontal tail, elevator. Wingtip triangles installed.	No	No	A	A
	Cockpit Preparation	**Integrated TOLD and PERF calculation is optional.	No	Yes	B	B
	Navigation-Approach	Visual approach as a selection in the Garmin 3000 database is not available.	No	Yes	B	A
	Approach	**Coupled go-around not installed.	No	Yes	B	A
	All Phases of Flight	**AFCS protection modes, USP, and ESP not installed	No	Yes	B	A

This Design Differences Table, from the HA-420 Elite to the HA-420 Elite II (Elite S items), was proposed by Honda Aircraft Company and validated by the FSB on November 16, 2022. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Limitations	**Elite II** Weight Limits Changed. MTOW 11,100 lbs. MLW 10,360 lbs. MZFW 9,300 lbs. Maximum aft baggage compartment 550 lbs. Weight limit increase for fuel and baggage. Aft center of gravity (CG) envelope expansion limit at 34%. **Elite S - Weight Limits** MTOW 10,900 lbs. MLW 10,160 lbs. MZFW 9,100 lbs.	No	Yes	B	B

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Performance	**Elite II and Elite S** Revised takeoff performance information.	No	No	B	A
	Performance	**Elite II** Integrated TOLD and performance calculation. - Updated to new weights/spoilers. - Corrected erroneous Vref data. - Revised TO trim bands. - Crosswind alert. - ENG AI only landing data. **Elite S** Integrated TOLD and performance calculation. - Updated to new weights. - Corrected erroneous Vref issue. - Revised TO trim bands. - Crosswind alert.	No	Yes	B	B

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Avionics Enhancements	**Elite II** - VNAV improvement. - Pitch Roll Indications fuel synoptic. - Aircraft cycles display. -Flap. -Pilot modifiable gear and flap speed targets. **Elite S** - VNAV improvement. - Pitch Roll Indications fuel synoptic. - Aircraft cycles display.	No	No	B	A
	Garmin Line Replaceable Unit Obsolescence	- GWX70 to GWX75. - GMU44 to GMU44B. - GTX33D to GTX335D. - GSD41 to GSD41B. - GDL69A to GDL69SXM. - GIA64E-40 to GIA64E-41.	No	No	A	A
	Flight Path Angle Reference Line	Available with synthetic vision system option.	No	No	A	A

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Stabilized Approach Alerting	- Speed deviation. - Baro set deviation. - Lateral deviation. - Vertical deviation.	No	No	B	B
	ATA 23 Communications	**Elite II and Elite S** Datalink. - FAA Data Comm. - ACARS. - COM 3 functionality. - Same hardware as DLS-IR.	No	Yes	B	A
	ATA 23 Communications	Cabin Audio Briefer – customizable.	No	No	A	A
	ATA 23 Communications	Cockpit Powered headset plugs added.	No	No	A	A
	ATA 27 Flight Controls	Ground Spoilers - fully automatic.	Yes	Yes	B	B

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 28 Fuel	-Increase in fuel capacity by increasing size of fuselage tank. -Modified Fuel filler port. -Modified venting system. -Additional fuel probe in fuselage tank. -Optical level sensor replaces vent float switch. -Fuel vent diverter strips. Removed Fuel Slowly Indication Light.	No	Yes	B	B
	ATA 32 Landing Gear	**Elite II and Elite S** Augmented Nosewheel Steering System. - Updated GSD from GSD41 to GSD41B. - SCU replaced with GAC9200 unit. - Damps yaw disturbances. - Relaxed gains at taxi speeds. - Modified wake-up curve.	Yes	Yes	B	B

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 32 Landing Gear	Emergency auto-brake used for de-spin braking (S/N 42000240 and up).	No	No	A	A
	ATA 33 Lighting	Exterior Lights Consolidation, Integrated Belly Light containing Landing/Taxi/Recognition lights.	No	No	B	B
	ATA 33 Lighting	Cabin Light Enhancements. - Night light (blue). - Main entry door step light.	No	No	A	A
	ATA 34 Naviagation	Clearance Based flight plans allow LAT/LON Waypoints, Place/Bearing/Distance waypoints, Place/Bearing/Place/Bearing waypoints, Airway Routes, Airway Selection, Airway-to-Airway Selection.	No	No	A	A
	ATA 34 Navigation	GWX 8000 Weather Radar Function. - Auto scan mode. - Turbulence detection. - Zero blind range. - Lightning/hail prediction.	No	No	B	A

FROM BASE AIRCRAFT: HA-420 Elite TO RELATED AIRCRAFT: HA-420 Elite II	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Auto Throttle Provisions	- AT TQA. - Controls disabled and covered. - MCT detent removed and increased friction. - Circuit breakers pulled and collared.	No	No	B	A
	Emergency Autoland Provisions	- Manual activation switch disabled and covered. - Circuit breaker pulled and collared.	No	No	B	A

This Maneuver Differences Table, from the HA-420 Elite to the HA-420 Elite II (Elite S items), was proposed by Honda Aircraft Company and validated by the FSB on November 15-16, 2022. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCAFT: HA-420 Elite **TO RELATED AIRCRAFT: HA-420 Elite II**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Inspection	- Relocation of fuel filler port. - Removal of Fuel Slowly Indication Light. - Addition of Integrated Belly Light. - Removed Wing Taxi and Recognition Light. - Wingtip Triangles.	No	No	A	A
	Cockpit Preparation	Integrated TOLD and PERF calculation.	No	Yes	B	B

This Design Differences Table, from the HA-420 Elite II (Elite S items) to the HA-420 Elite, was proposed by Honda Aircraft Company and validated by the FSB on November 16, 2022. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCAFT: HA-420 Elite II **TO RELATED AIRCRAFT: HA-420 Elite**	**DESIGN**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Limitations	Weight limit decrease for fuel and baggage. - MTOW 10,700 lbs. - MLW 9,960 lbs. - MZFW 8,900 lbs. - Max aft baggage 400 lbs. CG Envelope change. Crosswind Limit 20 Knots.	No	Yes	B	B
	Performance	Revised Takeoff performance information.	No	No	A	A
	Performance	Integrated TOLD and performance calculation. - Updated weights. - Revised TO trim band. - No crosswind alert.	No	Yes	B	B
	Avionics Changes	- VNAV less capable. - No pitch roll indications on fuel synoptic. - No Aircraft Cycles display.	No	No	B	A

FROM BASE AIRCAFT: HA-420 Elite II TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	Garmin Line Replaceable Units	- GWX70. - GMU44. - GTX33D. - GSD41. - GDL69A. - GIA64E-40.	No	No	A	A
	Stabilized Approach Alerting	Not installed.	No	No	A	A
	ATA 23 Communications	Datalink – Not Installed.	No	No	A	A
	ATA 23 Communications	Cabin Audio Briefer – Not customizable.	No	No	A	A
	ATA 23 Communications	Cockpit Powered headset plugs not installed.	No	No	A	A
	ATA 27 Flight Controls	Ground Spoilers – not installed.	Yes	Yes	B	B

FROM BASE AIRCAFT: HA-420 Elite II TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 28 Fuel	- Decrease in fuel capacity. - Modified fuel filler port. - Modified venting system. - Removed one fuel probe in fuselage tank. - Vent float switch replaces optical level sensor. - Fuel vent diverter strips not installed. - Fuel Slowly Indication Light installed.	No	Yes	B	B
	ATA 32 Landing Gear	Augmented Nosewheel Steering System. - Downgraded GSD from GSD41B to GSD41. - SCU replaced. - Greater yaw disturbances. - Increased gains at taxi speeds. - Modified wake-up curve.	Yes	Yes	D	B
	ATA 32 Landing Gear	Emergency auto-brake not used for de-spin braking (S/N 42000239 and below).	No	No	A	A

FROM BASE AIRCAFT: HA-420 Elite II TO RELATED AIRCRAFT: HA-420 Elite	DESIGN	REMARKS	FLT CHAR	PROC CHNG	TRAINING	CHECKING
	ATA 33 Lighting	Exterior Lights relocated from Integrated Belly Light.	No	No	B	B
	ATA 33 Lighting	Cabin Light. - Main entry door step light not installed. - Night light (blue) not installed.	No	No	A	A
	ATA 34 Naviagation	Clearance Based flight plans not available.	No	No	A	A
	ATA 34 Naviagation	GWX 8000 weather radar function not available.	No	No	B	A

This Maneuver Differences Table, from the HA-420 Elite II (Elite S items) to the HA-420 Elite, was proposed by Honda Aircraft Company and validated by the FSB on November 15-16, 2022. It lists the minimum differences levels operators must use to conduct differences training and checking of flightcrew members.

FROM BASE AIRCAFT: HA-420 Elite II **TO RELATED AIRCRAFT: HA-420 Elite**	**MANEUVER**	**REMARKS**	**FLT CHAR**	**PROC CHNG**	**TRAINING**	**CHECKING**
	Preflight Inspection	- Relocation of fuel filler port. - Fuel Slowly Indication Light installed. - Exterior Lights relocated from Integrated Belly Lights. - Wingtip Triangles not installed. - Fuel vent diverter strips not installed.	No	No	A	A
	Cockpit Preparation	Integrated TOLD and PERF calculation.	No	Yes	B	B
	Taxi Normal and Crosswind Takeoffs and Landings	Augmented Nosewheel Steering System.	Yes	No	D	B

APPENDIX 4. ELECTRONIC CHECKLIST EVALUATION

The electronic checklist (ECL) was evaluated after the completion of the formal Flight Standardization Board (FSB). The evaluation was completed in March of 2016 at the Honda Aircraft Facility in Greensboro, NC.

Checklists can be displayed on any display pane of the primary flight displays (PFD) or multifunction display (MFD), and checklist items can be selected/deselected. Selection of checklist items or checklist section can be accomplished using the Garmin Touchscreen Controller (GTC) or by a scroll wheel control on each yoke. The CHECKLIST control is an up/down scroll wheel switch with detents and a momentary push-action. Pushing the wheel displays the checklist on the on-side PFD display pane. Rotating the scroll wheel moves a selection box up/down on the display.

A paper/hard copy of the Honda Aircraft HA-420 normal procedures and emergency/abnormal procedures quick reference handbook (QRH) must be readily available during flight operations as a means of backup in case of ECL/MFD failure.

This checklist system was found to be operationally suitable for all flight operations by the General Aviation Branch.