European Aviation Safety Agency

EASA

TYPE CERTIFICATE DATA SHEET
EASA.A.155

FALCON 7X

DASSAULT AVIATION
9 Rond Point Marcel Dassault
75008 PARIS

For models: FALCON 7X

Issue 4.0: 20 January 2010
SECTION 1. GENERAL

- Data Sheet No: TCDS EASA.A.155
- Airworthiness Category: Large Airplane
- Performance Category: A
- Certifying Authority: EASA
- Type Certificate Holder: DASSAULT AVIATION
  9, Rond Point Marcel Dassault
  75008 PARIS - FRANCE
- ETOPS: Not applicable
SECTION 2. FALCON 7X

2.I General
Aeroplane: ................................................................. FALCON 7X

2.II FALCON 7X Certification Basis

- Reference Application Date for EASA Certification: .................. May 26th, 2002
- EASA Certification Date: ............................................ April 27th, 2007
- EASA Certification Basis:

  1. The following EASA/JAA airworthiness standards effective on the reference date are:
     - JAR 1 at change 5 plus orange papers 1/97/1 and 1/99/1
     - JAR 25 at change 15
     - JAR AWO at change 2

  Refer to CRI A01 for exhaustive list of applicable requirements

  2. Special Conditions:
     - CRI B-01 Stalling and scheduled operating speeds
     - CRI B-02 Motion and effects of cockpit controls
     - CRI B-03 Static directional, lateral and longitudinal stability and low energy awareness
     - CRI B-04 Flight envelope protection
     - CRI B-05 Normal load factor limiting system
     - CRI C-01 Design maneuver requirements
     - CRI C-02 Limit forces and torque
     - CRI C-03 Design dive speed Vd
     - CRI C-05 Interaction of systems and structure
     - CRI C-06 Fuel tank crashworthiness
     - CRI D-02 Electronic flight control unusual features
     - CRI D-05 Flight controls - Harmonised 25.671
     - CRI D-07 Nose wheel steering - Towbarless towing
     - CRI D-09 Airworthiness standards for subsonic aeroplanes to be operated above 41 000 ft
     - CRI D-11 Fire protection of thermal and acoustic insulation material
     - CRI D-22 Fuselage doors
     - CRI E-01 Fuel tank safety
     - CRI E-04 Reversing system requirements
     - CRI E-05 Sustained engine imbalance
     - CRI F-06 Protection from effects from HIRF
     - CRI F-24 Human factors aspects of flight deck design
     - CRI F-44 Installation of Crew rest area

  3. Exemptions: none

  4. Deviation:
     - CRI D-14 Door between passenger compartments
     - CRI D-18 Personal injury criteria of dynamic testing of side facing sofa
5. Equivalent Safety Findings:

CRI C-09 JAR 25.251, 25.305 and 25.629 - Vibration, buffet and aeroelastic stability requirements
CRI C-12 JAR 25.361 - Engine failure loads
CRI C-15 JAR 25.341, 25.343(b), 25.345(c), 25.371, 25.373(a), 25.391, 25.1517 - Gust and continuous turbulence
CRI C-16 JAR 25.963(g) - Fuel tank access cover
CRI D-12 JAR 25.811(d)(1) and (d)(2) - Emergency exit locator sign used also as marking sign – cabin without divider
CRI D-13 JAR 25.811(d)(1) and (d)(3) - Emergency exit locator sign used also as marking sign – cabin with divider
CRI D-15 JAR 25.831(a) - Packs-off take off
CRI D-19 JAR 25.699(b) - Lift and drag device indicator
CRI E-02 JAR 25.865, 25.1181, 25.1195, 25.1203 - Engine fire protection in designated fire zones
CRI E-08 JAR 25.1093(b) - Falling and blowing snow
CRI E-10 JAR 25.1549 - Powerplant instruments – colour markings
CRI E-12 JAR 25.971 - Fuel tank sump
CRI F-22 JAR 25.1357(e), 25.1309 - Honeywell PRIMUS EPIC Integrated Modular Avionics system (compliance with requirements for individual circuit protection)
CRI F-35 JAR 1459 (a)(2) - Use of IRS for DFDR vertical acceleration
CRI G-01 JAR 25.1322 - CAS window red message line space
CRI K-01 Revisions to JAR AWO resulting from JAR/FAR 25.1329 Harmonisation
CRI K-02 Revisions to JAR AWO paragraphs resulting from JAA/FAA Harmonisation

6. Elect to comply by Dassault Aviation:

JAR 25.331(c)(2) amdt 16 Symmetric manoeuvering conditions
JAR 25.335(b)(2) amdt 16 Design airspeeds
JAR 25.337(d) amdt 16 Limit manoeuvering load factors
JAR 25.391 amdt 16 Control surface loads: general
JAR 25.395(b) amdt 16 Control system
JAR 25.415 amdt 16 Ground gust conditions
JAR 25.491 amdt 16 Taxi, takeoff and landing roll
JAR 25.493(c) amdt 16 Braked roll conditions
JAR 25.605(a) amdt 16 Fabrication methods
JAR 25.731(d)(e) amdt 16 Wheels
JAR 25.735 amdt 16 Brakes
JAR 25.904 amdt 16 Automatic takeoff thrust control system (ATTCS)
JAR 25.933 amdt 16 Reversing systems
JAR 25.939(d) amdt 16 Turbine engine operating characteristics
JAR 25.951(d) amdt 16 Fuel system - General
JAR 25.952(c) amdt 16 Fuel system analysis and test
JAR 25.954 amdt 16 Fuel system lightning protection
JAR 25.961(a) amdt 16 Fuel system hot weather operation
JAR 25.967 amdt 16 Fuel tank installations
JAR 25.975(a)(5) amdt 16 Fuel tank vents
JAR 25.981 amdt 16 Fuel tank temperature
JAR 25.993 (c) amdt 16 Fuel system lines and fittings
JAR 25.994 amdt 16 Fuel system components
JAR 25.997 amdt 16 Fuel strainer or filter
JAR 25.1013 amdt 16 Oil tanks
JAR 25.1015 amdt 16 Oil tank tests
JAR 25.1019 amdt 16 Oil strainer or filter
JAR 25.1145(c) amdt 16 Ignition switches
6. Environmental Standards:

Noise level: ICAO Annex 16 Volume 1 Chapter 4 Amdt 8.


7. Additional National Requirements:

To be defined at a later stage for JAA countries not being member of EASA.

2.III FALCON 7X Technical Characteristics and Operational Limitations

2.III.1 Type Design Definition

The Falcon 7X is a maximum 22 occupants, tri-jet, long range, large aeroplane category. It has a low positioned, high swept wing, mid-height horizontal stabilizer and tricycle landing gear. Flight controls are fly-by-wire.

Three Pratt & Whitney Canada PW307A engines are rear mounted, two on side of fuselage and one in center position.

The Type Design aircraft configuration is the F7TC version stored in an electronic format under the virtual product management tool ENOVIA/VPM©. The repository of the ENOVIA/VPM© database is located in Dassault Aviation facilities. This F7TC version contains also the type design list of equipment.

2.III.2 Dimensions

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>23.38 m</td>
</tr>
<tr>
<td>Span</td>
<td>26.21 m</td>
</tr>
<tr>
<td>Height</td>
<td>7.93 m</td>
</tr>
<tr>
<td>Gross wing area</td>
<td>70.7 m²</td>
</tr>
</tbody>
</table>

2.III.3 Engines

**Model:** PRATT & WHITNEY CANADA Corp. - Model PW307A

**Engine TCDS:** EASA TCDS IM.E.035

**Note:** Engine is approved for operation with thrust reverser p/n F7XC782140020
Number: 3.

**Ratings:**

- Maximum takeoff static thrust: 2,849 daN (6,405 lbs) limited to 5 minutes
- Max continuous: 2,849 daN (6,405 lbs)

**Engine limits:** Refer to the Airplane Flight Manual and to the relevant Engine Type Certificate Data Sheet

### 2.III.4 Auxiliary Power Unit (APU)

Model: HONEYWELL - 36 - 150 [FN]

**APU limits:** Refer to the EASA approved Airplane Flight Manual DGT105608. APU is usable for ground operation only.

### 2.III.5 Fluids (Fuel/Oil/Additives):

**Approved Fuel, oils and additives:** Refer to the EASA approved Airplane Flight Manual DGT105608.

### 2.III.6 Fluid capacities:

**Fuel capacity**

<table>
<thead>
<tr>
<th>USABLE FUEL</th>
<th>Liters</th>
<th>kg (*)</th>
<th>US Gallons</th>
<th>lbs (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left circuit</td>
<td>5944</td>
<td>4773</td>
<td>1570</td>
<td>10522</td>
</tr>
<tr>
<td>Right circuit</td>
<td>5944</td>
<td>4773</td>
<td>1570</td>
<td>10522</td>
</tr>
<tr>
<td>Center circuit</td>
<td>6154</td>
<td>4942</td>
<td>1626</td>
<td>10896</td>
</tr>
<tr>
<td><strong>Total usable</strong></td>
<td>18042</td>
<td>14488</td>
<td>4766</td>
<td>31940</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UNUSABLE FUEL</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Drainable</td>
<td>65</td>
<td>52</td>
<td>17</td>
<td>115</td>
</tr>
<tr>
<td>Undrainable</td>
<td>41</td>
<td>33</td>
<td>11</td>
<td>72</td>
</tr>
<tr>
<td><strong>Total unusable</strong></td>
<td>106</td>
<td>85</td>
<td>28</td>
<td>187</td>
</tr>
</tbody>
</table>

* assuming a fuel density of 0.803 kg/liter

**Engine Oil Tank Capacity:**

<table>
<thead>
<tr>
<th></th>
<th>Liters</th>
<th>kg (**)</th>
<th>US gallons</th>
<th>lbs (**)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max oil level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left engine</td>
<td>7.87</td>
<td>7.67</td>
<td>2.08</td>
<td>16.90</td>
</tr>
<tr>
<td>Right engine</td>
<td>7.87</td>
<td>7.67</td>
<td>2.08</td>
<td>16.90</td>
</tr>
<tr>
<td>Center engine</td>
<td>7.87</td>
<td>7.67</td>
<td>2.08</td>
<td>16.90</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>23.61</td>
<td>23.01</td>
<td>6.24</td>
<td>50.70</td>
</tr>
<tr>
<td><strong>Min oil level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Left engine</td>
<td>6.23</td>
<td>6.07</td>
<td>1.64</td>
<td>13.38</td>
</tr>
<tr>
<td>Right engine</td>
<td>6.23</td>
<td>6.07</td>
<td>1.64</td>
<td>13.38</td>
</tr>
<tr>
<td>Center engine</td>
<td>6.23</td>
<td>6.07</td>
<td>1.64</td>
<td>13.38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18.69</td>
<td>18.21</td>
<td>4.92</td>
<td>40.14</td>
</tr>
</tbody>
</table>

(*) Tank quantities do not include undrainable oil or residual oil in the Accessory Gearbox, oil filter bowl or air-cooled oil cooler (ACOC)

(**) Based on specific gravity of 0.975
2.III.7  Airplane speed limits

(Unless otherwise specified, speeds are indicated asirspeeds)

- VMO at sea level ......................................................... 350 kts
- VMO straight line variation up to 10,000 ft .................... 370 kts
- VMO from 10,000 ft to 28,000 ft .................................... 370 kts
- MMO from 28,000 to 51,000 ft ..................................... 0.9
- \( V_A \) maneuvering speed ........................................... 218 kts
- \( V_{FE} \)
  - SF1 ................................................................. 200 kts
  - SF2 ................................................................. 190 kts
  - SF3 ................................................................. 180 kts

Note: Above 20,000 ft, do not establish, nor maintain a configuration with the slats and the flaps extended.

- \( V_{LO} \) Landing gear operation ....................................... 200 kts
- \( M_{LO} \) ................................................................. 0.70
- \( V_{LE} \) Landing gear extended ...................................... 245 kts
- \( M_{LE} \) ................................................................. 0.75
- \( V_{MCA} \) minimum control speed in flight ....................... 80 kts (CAS)
- \( V_{MCG} \) minimum control speed on ground .................. 81.3 kts (CAS)

2.III.8  Maximum Operating Altitude

15 544 m (51,000 ft)

2.III.9  All weather Capability

Category II Auto Pilot with or without MOPT0002 (HUD)
Category II requirements provided the airplane is operated in accordance with Airplane Flight Manual Annex 1 and with Supplement 1 revision 1 (or later approved revision) when monitored with HUD

2.III.10 Maximum Weights

Mean aerodynamic chord (MAC): 3 347.54 mm
Zero % MAC is at y-fuselage station +11,346.1 mm.

Datum is 25 % of mean aerodynamic chord (MAC): 12 183 mm from the forward end of the aircraft nose cone.

<table>
<thead>
<tr>
<th>Weight</th>
<th>Forward limit</th>
<th>Aft limit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% MAC</td>
<td>% MAC</td>
</tr>
<tr>
<td>Minimum flight - Aft</td>
<td>14 696</td>
<td>32 400</td>
</tr>
<tr>
<td>Minimum flight - Forward</td>
<td>15 694</td>
<td>34 600</td>
</tr>
<tr>
<td>Maximum zero fuel</td>
<td>18 597</td>
<td>41 000</td>
</tr>
<tr>
<td>Maximum landing</td>
<td>28 304</td>
<td>62 400</td>
</tr>
<tr>
<td>Maximum for aft CG at 38.5 %</td>
<td>25 890</td>
<td>57 076</td>
</tr>
<tr>
<td>Maximum takeoff</td>
<td>31 751</td>
<td>70 000</td>
</tr>
<tr>
<td>Maximum ramp</td>
<td>31 842</td>
<td>70 200</td>
</tr>
</tbody>
</table>

For weight and balance calculation refer to the Loading Manual (DGT 105608) - See note 1
2.III.11 Leveling Means:
  Aircraft is leveled in the longitudinal and lateral axis by means of a plumb bob and target in the left main landing gear bay

2.III.12 Minimum Flight Crew:
  2: pilot and copilot

2.III.13 Maximum Seating Capacity:
  2 + 1 crew - third crew member seat authorized for take-off and landing in the cockpit.
  19 passengers in cabin.
  See note 2.

2.III.14 Exits:

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Passenger door</td>
<td>0.800 x 1.72 m (31.50 x 67.72 in)</td>
</tr>
<tr>
<td>1 Emergency exit</td>
<td>0.534 x 0.916 m (21.02 x 36.06 in)</td>
</tr>
</tbody>
</table>

2.III.15 Baggage/Cargo Compartments:
  Baggage compartment: 909 Kg, not to exceed 400 kg per square meter.
  See note 1.

2.III.16 Wheels and Tyres:
  This aircraft is equipped with wheels, brakes and H type radial tubeless tires.
  Main wheel tyres are H32×10.5R16.5
  Nose wheel tyres are 16×6.0R6
  Mixability is not approved.
2.IV FALCON 7X Operating and Service Instructions

The aircraft must be operated according to the EASA approved Airplane Flight Manual DGT 105608

The Instructions for Continued Airworthiness consist of:
- Maintenance Review Board Report DGT 102566
- Chapter 5-40 DGT 107838
- Airplane Maintenance Manual included in FIELD publication in CD format
- Structural Repair Manual included in FIELD publication in CD format

2.V NOTES

NOTE 1:

a) - A current weight and balance report must be carried in the aircraft at all times from the moment the aircraft is originally certified.

b) - Loading of the aircraft must be accomplished in a manner that always maintains the center of gravity within the specified limits considering crew and passenger movements as well as fuel consumption and transfer.

NOTE 2:

Cabin interior and seating configuration must be approved.

NOTE 3:

F7X is compliant with RVSM requirements through basic equipments.

NOTE 4:

F7X is compliant with RNP RNAV operations, down to RNP 0.3 RNAV (RTCA/DO-236A and DO-283) through basic equipments.
### SECTION 3. Change Record

<table>
<thead>
<tr>
<th>TCDS Issue No</th>
<th>TCDS Date</th>
<th>TCDS Changes</th>
<th>TC Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 to 3.0</td>
<td></td>
<td>No tracking of detailed changes. Changes log implemented only at issue 4.0 according to new EASA procedure.</td>
<td>27/04/07</td>
</tr>
<tr>
<td>4.0</td>
<td>20/01/2010</td>
<td>- Page 5 Section 2.II.6 [Elect to comply, removal of JAR 25.907 amt16 propeller vibration as not applicable to the Falcon 7X] [Page 7 Section 2.III.4 and 3.III.5 [Addition of EASA approved AFM reference DGT 105608] [Page 8 Section 2.III.10 [Maximum Weights – removal of weight table for A/C without M0478 and M0826 as all Falcon 7X fleet has been retrofitted with these modifications and new deliveries are automatically fitted with these modifications. Note that M0826 is only a justification of the maximum ramp and take off weights without design change, therefore M0826 applies to all F7X A/C even if not in the A/C initial RIC. This removal is to ease operator understanding of the F7X TCDS.] [Page 10 Section 2.IV [Correction of Chapter 5-40 reference and removal of operating and service instructions publication format.]</td>
<td>27/04/07</td>
</tr>
</tbody>
</table>