

State Aviation Administration of Ukraine

SAAU

TYPE CERTIFICATE DATA SHEET № TJI 0030

CHALLENGER 300

Manufacturer: **Bombardier Inc.**
P.O. Box 6087
Station "Centre-Ville" Montreal, Quebec Canada H3C 3G9

Model: **BD-100-1A10**

Issue 3, 01 April 2008

This Data Sheet which is integral part of Type Certificate № TJI 0030 prescribes the conditions and limitations under which the product(s) for which the Type Certificate was granted meet(s) the airworthiness requirements and environmental protection requirements, stated in Certification basis mentioned in this Data Sheet Chapter II of the Section 2.

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SECTION 1: GENERAL

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|------------------------------------|---|
| 1. Data Sheet No: | TJI 0030 |
| 2. Type Certificate Holder: | Bombardier Inc.
P.O. Box 6087 Station Centre-Ville Montreal,
Quebec Canada H3C 3G9 |
| 3. Certifying Authority: | TCCA |
| 4. Airworthiness Category: | Transport category |

SECTION 2: MODEL BD-100-1A10**I. General**

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|--|------------------------------|
| 1. Aircraft designation | BD-100-1A10 (Challenger 300) |
| 2. Application Date for SAAU Certification: | 10 February 2005 |
| 3. SAAU Certification Date: | 15 June 2006 |
| 4. Airplanes serial number eligible: | 20002 and subsequent |

II. Certification Basis

- | | |
|--|--|
| 1. Reference Application Date for TCCA Certification: | 26 March 1999 |
| 2. TCCA Certification Date: | 30 May 2003 |
| 3. TCCA Certification Basis: | Refer to Transport Canada TCDS A-234 |
| 4. SAAU Certification Basis: | AP-25 "Airworthiness Standards for Transport Category Airplanes" |

Equivalent Safety Findings:

AP 25.130	Landing and Go-around Speeds (ref. CRI F-3);
AP 25.147	Directional and Lateral Control (ref. CRI F-8);
AP 25.201	Stall Characteristics (ref. CRI F-10);
AP 25.397	Control System Loads(ref. CRI ST-2);
AP 25.415	Ground Gust Conditions (ref. CRI ST-3);
AP 25.485	Side Load Conditions (ref. CRI ST-5);
AP 25.519	Static Ground Load Conditions (ref. CRI ST-7);
AP 25.681	Control Systems. Ultimate Load Static Tests (ref. CRI ST-11);
AP 25.955	Engine Fuel Feeding (ref. CRI P-2);
AR 25. J25F.5.10.1.4	Flight Data Recording System (ref. CRI A-5)
AP 25. J25F.5.10.1.6	Electromagnetic Compatibility (ref. CRI A-8);
AR 25. J25F.8.2.2.14	Flight and Navigation Equipment (ref. CRI A-11)

Environmental Standards:

Noise: ICAO Annex 16, Third Edition, Volume I at Amendment 7

III. Technical Characteristics and Operational Limitations

1. Model BD-100-1A10

1.1. Type Certificate Design Definition (additionally see NOTE 1)

The approved type design is defined in the document RAZ-BA100-124 at Issue A and RAL-100-0001 at Issue A or later approved revision.

The type design number appropriate for the “as delivered” configuration of a particular BD-100-1A10 airplane is defined in the document RAL-100-XXXXX (XXXXX denotes the serial number for the aircraft concerned)

1.2. Maximum Certified Weights: (additionally see NOTE 2)

	kg	lbs
Maximum Taxi and Ramp Weight	17 530	38 650
Maximum Take-Off Weight	17 460	38 500
Maximum Landing Weight	15 310	33 750
Maximum Zero Fuel Weight	11 840	26 100

Increased Maximum Weight with M.S.100T010126 BB100T010126 & S.B. 100-11-01

	kg	lbs
Maximum Taxi and Ramp Weight	17 690	39 000
Maximum Take-Off Weight	17 622	38 850
Maximum Landing Weight	15 310	33 750
Maximum Zero Fuel Weight	12 247	27 000

1.3. Airplane Limit Speeds (IAS):

V_{MO} ($V_{max\ \epsilon}$) and M_{MO} (Maximum Operating)	km/hour	knots	Mach
Sea Level to 2440 m (8000 ft)	556	300	-
2440 m (8000 ft) to 8980 m (29475 ft)	583	320	-
above 8980 m (29475 ft)	-	-	0.83
V_{FE} ($V_{max\ \delta}$) (Flaps extended)			
$\delta_f = 10^\circ$	389	210	-
$\delta_f = 20^\circ$	389	210	-
$\delta_f = 30^\circ$	324	175	-
V_D and M_D			
Sea Level to 7780 m (25525 ft)	703	380	-
Above 7780 m (25525 ft)	-	-	0.90

1.3. Airplane Limit Speeds (IAS) (cont.):

V _A (manoeuvring)	See Flight Manual for variation of V _A with altitude and aircraft weight		
V _{MCA} Flap 10°	196	106	-
Flap 20°	189	102	-
V _{MCG}	206	111	-
V _{LO} (Landing gear retraction)	370	200	-
V _{LO} (Landing gear extension)	463	250	-
V _{LE} (Landing gear extended)	463	250	-

1.4. Fluids (Fuel/Additives):

See AFM CSP 100-1 for Approved Fluids

Additionally See NOTE 4

1.5. Fuel Capacity:

Usable	Capacity		Weight**	
	U.S. Gal.	Litres	lbs	Kg
2 main tanks (each)	1048	3967	7074	3209
Total	2096	7934	14150	6418
* Total Unusable (drainable)	3.7	14	25	11
* Total Undrainable	1	3.8	7	3

* See NOTE 3

** Assuming a fuel density of 0,809 kg/l (6.75 lbs/U.S. Gal)

1.6. Centre of Gravity Range (additionally see NOTE 2)

Refer to Transport Canada approved Airplane Flight Manual (AFM), Bombardier Publication CSP 100-1.

Levelling Means:

Aircraft is levelled in the longitudinal and lateral axis by means of a plumb bob and target in the aft equipment bay at FS 755.5 and RBL 1.0.

1.7. Datum

FS 0.0 located at 495 cm (195 in.) Fwd of the aircraft nose

Mean Aerodynamic 284.9 cm (112.2 in)

Chord (MAC) (MAC leading edge at fuselage station 1413.9 cm (556.67 in.))

1.8. Minimum Flight Crew:

Two (Pilot and Co-pilot)

1.9. Maximum Seating Capacity (additionally see NOTE 1):

19 (including the crew and no more than 16 passengers)

1.10. Engines:

Two Honeywell AS907-1-1A

Appropriate Ukrainian Type Certificate No. ТД-0027 and associated Type Certificate Data Sheet.

1.11. Engine Limits:

	SL Static Thrust (installed)		Fan RPM	Core RPM	Interturbine Temp.*		Time Limit
	lbf	kg	N ₁ %	N ₂ %	°C	°F	
Max. takeoff	6924	30,8	95,9	98,1	941	1726	5 min*
Max. continuous	6910	30,7	95,0	97,2	923	1693	-
Idle range	-	-	-	46,0 min.	-	-	-
Reverse Thrust	-	-	70,7	-	-	-	-
Starting on ground	-	-	N/A	N/A	650	1202	-
Starting in air	-	-	N/A	N/A	700**	1292**	-

* The take off limit may be extended to 10 minutes for engine out contingency.

** Varies with N2 speed.

1.12. Auxiliary Power Unit (APU):

Honeywell 36-150 [BD] (See NOTE 5)

1.13. APU Limits:

Maximum RPM	110%	
Maximum EGT	°C	°F
Starting	512-1024	954-1875
Running	594-714	1101-1317

1.14. Oil (engine, APU):

Engine, APU: Refer to Aircraft Maintenance Manual, Bombardier Publication BD 100 AMM, Chapter 12

1.15. Oil Capacity:

	Capacity		Weight	
	U.S. Qts.	Litres	lbs	kg
Left Engine	6.0	5.7	12.6	5.7
Right Engine	5.0	4.7	10.4	4.7
Total	11.0	10.4	23.0	10.4
Usable per Engine	1.7	1.6	3.5	1.6

1.16. Maximum Operating Altitude:

En route – 13716 m (45 000 ft)

Take off and landing – 2438 m (8000 ft)

1.17. Outside Air Temperature Limits:

At Sea level ambient:

- Minimum: – 20°C (- 4 °F)

- Maximum: +50°C (122°F)

For temperature operating limits refer to Limitations Section of AFM

1.19. Equipment: (additionally see NOTES 7, 8 & 9)

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) and defined in the Type Certificate Type Design Definition, (see report RAZ-BA100-103) must be installed in the airplane for certification.

1.20. Baggage/Cargo Compartments: (see additionally NOTE 6)

The type certification configuration does not include baggage/cargo compartments.

1.21. Placards:

All placards must be installed in accordance with Bombardier Drawings: 1001100001, 1001100002, 1001100003 and 1001100004.

IV. **Operating and Service Instructions**

- Airplane Flight Manual (AFM): CSP 100-1
with special pages for Ukrainian registered airplanes;

- Flight Crew Operating Manual: CSP 100-6
with special pages for Ukrainian registered airplanes;

- Weight and Balance Manual: BD100 WBM;

- Master Minimum Equipment List (MMEL): BD100 MMEL;

The Instructions for Continued Airworthiness consist of the following Publications:

- BD 100 AMM, Aircraft Maintenance Manual (Publication No. CH300 AMM);
- BD 100 TLMC, Time Limits/Maintenance Checks Manual (Publication No. CH300 TLMC);
- BD100 MRM, Maintenance Requirement Manual (MRM) Part II;
- BD 100 SRM, Structural Repair Manual (Publication No. CH300 SRM);
- BD 100 NDT, Non-Destructive Testing Manual (Publication No. CH300 NDTM);
- BD 100 JIC, Job Instruction Card Manual (Publication No. CH300 JICM);

SECTION 3: Notes

- NOTE 1.** This aircraft Type Certificate defines an aircraft that does not include passenger provisions. Carriage of persons in the cabin is permitted when an approved seating arrangement and related required passenger provisions and incorporated in accordance with the Type Certification basis.
- NOTE 2.** Current weight and balance report, loading instructions (when necessary), and the list of equipment included in the certificated empty weight must be provided for each aircraft at the time of original certification.
- NOTE 3.** System fuel, which must be included in the empty weight, is the amount of fuel required to fill the system plumbing and tanks to the undrainable level plus unusable fuel in the fuel tanks. The weight of undrainable and unusable fuel defined in the Fuel Capacity section must be included in the empty weight of the airplane.
- NOTE 4.** Ukrainian fuels RT (GSTU 320.00149943.007-97) & TC-1 (GSTU 320.00149943.011-99) are approved to be used
- NOTE 5.** APU Model Honeywell 36-150 [BD] complies with Airworthiness Standards AP-VD. APU model is approved as part of Model BD-100-1A10 Type design.
- NOTE 6.** BA report RAZ-BA100-110 provides guidance to completion centres regarding compliance with the basis of certification for the Challenger 300 with a completed interior.
- NOTE 7.** Portable Emergency VHF Radio Station and Flight Deck Recorder (FDR) must be installed on airplane. FDR can be installed in accordance with SB100-31-02
- NOTE 8.** Automated Fixed Emergency Locator Transmitter (ELT (AF)) must be installed on airplane. ELT (AF) is available by SB100-25-01 incorporation
- NOTE 9.** Portable Emergency VHF/UHF Radio Beacons "COSPAS-SARSAT" included to the safety raft kit (required for the overwater operation)

**Head of Aeronautical Products
Type Certification Department**



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