

**DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION**

A21NM  
Revision 9  
Construcciones Aeronauticas, S.A.  
Model CN-235  
CN-235-100  
CN-235-200  
CN-235-300  
C-295  
November 3, 2006

**TYPE CERTIFICATE DATA SHEET NO. A21NM**

This data sheet, which is part of Type Certificate No. A21NM, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder                      Construcciones Aeronauticas, S.A.  
Avenida de Aragon 404  
28022 Madrid, Spain

**I. Model CN-235 (Transport Category Airplane) approved 3 December, 1986:**

Engines    Two (2) engines - General Electric Company, Model CT7-7A, free turbine turboprop.\*  
  
Power turbine/propeller reduction gearing 15.9:1.

Fuel    (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

*\*CT7-7A engines are to be equipped with redundant propeller speed sensors (NP) per General Electric Engineering Change Number 270598 (General Electric Service Bulletin 72-112 "Engine-General-Installation of PGC drive shaft speed sensor on CT7-7A Turboprop Engine") or FAA engineering approved equivalent.*

Engine Limits

The Maximum Continuous and Takeoff Static Sea Level rating at ISA:

Condition	Maximum Time Limit	Maximum Torque (FT - LBS)	Maximum ITT (°C)	Maximum NH (RPM)	Rated Shaft Horsepower (HP)
Takeoff	5 min.	413	930	45,000	1700
Max. Cont.	Cont.	413	917	44,720	1700
Transient	12 sec.	475	960	47,000	
Starting			950		

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Propeller and Propeller Limits	<p>Two (2) Propellers - Hamilton Standard, Model 14RF-21.</p> <p>Maximum Propeller Operating Speed: 1384 RPM (100% indicated NP Overspeed Limit: 103% (indicated NP))</p> <p>Blades: Four (4), model RFC11L1-0C Diameter: 132.24 in. maximum, 131.94 in. minimum NOTE: No further reduction permitted.</p> <p>Blade Angle measured at 42 in. - radius station:</p> <table border="0"> <tr> <td>Ground Idle</td> <td>-3.7° ± 1.0°</td> </tr> <tr> <td>Maximum Reverse</td> <td>-12.4° ± 1.3°</td> </tr> <tr> <td>Feather</td> <td>80.8° ± 0.5°</td> </tr> <tr> <td>Flight Idle</td> <td>16.7° ± 0.8°</td> </tr> </table> <p>Propeller Spinner: Hamilton Standard, P/N 784920-1 or 790185-1 Propeller Deicer: Included in blade P/N</p>	Ground Idle	-3.7° ± 1.0°	Maximum Reverse	-12.4° ± 1.3°	Feather	80.8° ± 0.5°	Flight Idle	16.7° ± 0.8°																												
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Airspeed Limits (IAS)	<p>Unless otherwise noted below, speeds are indicated airspeeds in knots:</p> <table border="0"> <tr> <td>V<sub>NO</sub></td> <td>(Maximum Operating)</td> <td></td> </tr> <tr> <td></td> <td>Sea Level</td> <td>240 knots</td> </tr> <tr> <td></td> <td>20,000 ft.</td> <td>210 knots</td> </tr> <tr> <td></td> <td>25,000 ft.</td> <td>190 knots</td> </tr> <tr> <td></td> <td colspan="2">Straight line variation between points.</td> </tr> <tr> <td>V<sub>A</sub></td> <td>(Design, Maneuvering)</td> <td></td> </tr> <tr> <td></td> <td colspan="2">Sea Level to 25,000 ft. 160 knots</td> </tr> <tr> <td>V<sub>FE</sub></td> <td>(Flaps Extended)</td> <td></td> </tr> <tr> <td></td> <td>8° (Takeoff)</td> <td>160 knots</td> </tr> <tr> <td></td> <td>10° (Approach)</td> <td>160 knots</td> </tr> <tr> <td></td> <td>23° (Landing)</td> <td>150 knots</td> </tr> <tr> <td>V<sub>LE</sub></td> <td>(Landing Gear Extended)</td> <td>150 knots</td> </tr> </table> <p>For other airspeed limits, see the appropriate FAA approved Airplane Flight Manual listed herein.</p>	V <sub>NO</sub>	(Maximum Operating)			Sea Level	240 knots		20,000 ft.	210 knots		25,000 ft.	190 knots		Straight line variation between points.		V <sub>A</sub>	(Design, Maneuvering)			Sea Level to 25,000 ft. 160 knots		V <sub>FE</sub>	(Flaps Extended)			8° (Takeoff)	160 knots		10° (Approach)	160 knots		23° (Landing)	150 knots	V <sub>LE</sub>	(Landing Gear Extended)	150 knots
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C.G. Range	<p>CG limits for both takeoff, landing and inflight are 16% to 30% Mean Aerodynamic Chord except as limited at gross weight below 20,723 lbs. (9,400 kg).</p> <p>See the appropriate FAA Approved Flight Manual Limitation Section, listed herein for further definition.</p>																																				
Datum	<p>The fuselage datum, Sta. 0.0, is located 92.40 in. forward to the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.</p>																																				
Mean Aerodynamic Chord (MAC)	<p>Length: 100.83 in. L.E. of MAC: 377.61 in. aft of fuselage datum</p>																																				
Leveling Means	<p>Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.</p>																																				

Maximum Weights	Maximum Ramp	31,862 lb	(14,450 kg)
	Maximum Takeoff	31,752 lb	(14,400 kg)
	Maximum Landing	31,311 lb	(14,200 kg)
	Maximum Zero Fuel	29,988 lb	(13,600 kg)
	Minimum Flight	19,183 lb	( 8,700 kg)
Minimum Crew	Two (2): pilot and co-pilot		
Maximum Passengers	39		
Maximum Baggage	1,654 lb (750 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed herein.		
Fuel Capacity	Usable fuel (see Note 1 for unusable fuel):		

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)	
Right Wing	Main	270	1809	409.45
	Aux	420	2814	412.45
Left Wing	Main	270	1809	409.45
	Aux	420	1814	412.45
TOTAL USABLE	1380	9246	411.26	

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.

Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity	<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>	
	7.3 U.S. qt./tank on each engine	+350.47	
	3.8 U.S. qt/tank usable		
	5.0 U.S. qt/tank on each propeller gear box	+315.97	
	1.5 U.S. qt/tank usable		
Maximum Operating Altitude	25,000 ft. (18,000 ft. for passenger transportation)		
Control Surface Movements	Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
	Up to A/C Serial Number C-005:		
	Elevator Trim Tabs :	Up $0.5^\circ \pm 0.5^\circ$	Down $8.5^\circ \pm 0.5^\circ$
	From Serial Number C-006:		
	Normal Trim Tab:	Up $-0.5^\circ \pm 0.5^\circ$	Down $9.5^\circ \pm 0.5^\circ$
	Emergency Trim Tab:	Up $2.0^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
	Elevator balance tab:		
		Up (for $+15^\circ$ elevator)	$1.75^\circ \pm 0.5^\circ$
		Down (for $-30^\circ$ elevator)	$9.50^\circ \pm 0.5^\circ$
	Rudder:	Right $17.0^\circ \pm 0.25^\circ$	Left $12.0^\circ \pm 0.25^\circ$
Rudder trim tab:	Right $5.0^\circ \pm 0.5^\circ$	Left $3.0^\circ \pm 0.5^\circ$	
Rudder balance tab:			
	Right (for $+12^\circ$ rudder)	$2.5^\circ \pm 0.25^\circ$	
	Left (for $-17^\circ$ rudder)	$5.0^\circ \pm 0.25^\circ$	

## Control Surface Movements

Ailerons:	Up $20.0^\circ \pm 0.5^\circ$	Down $20.0^\circ \pm 0.5^\circ$
Aileron trim tab:	Up $8.0^\circ \pm 0.5^\circ$	Down $8.0^\circ \pm 0.5^\circ$
Aileron balance tabs:		
Trailing edge up for aileron $0^\circ$ :		$5.0^\circ \pm 0.5^\circ$
Trailing edge down for aileron $20^\circ$ up:		$8.0^\circ \pm 0.5^\circ$
Trailing edge up for aileron $20^\circ$ down:		$18.0^\circ \pm 0.5^\circ$
Flaps (inner and outer)		
Cruise	$0.0^\circ \pm 0.5^\circ$	
Takeoff	$8.0^\circ \pm 0.5^\circ$	
Approach	$10.0^\circ \pm 0.5^\circ$	
Landing	$23.0^\circ \pm 0.5^\circ$	

All measurements are taken at trailing edge from neutral position.

## Serial Nos. Eligible

A Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for United States certification is made.

## Import Requirements

An FAA Standard Airworthiness Certificate may be issued on the date of a Spanish Certificate of Airworthiness for Export issued by a representative of the Direccion General de Aviacion Civil (DGAC), containing the following statement: "The airplane covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate No. A21NM and is in a condition for safe operation." Only CN235 airplane manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate.

## Certification Basis

14 CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-54.

Federal Aviation Administration Exemption No. NM-103, from 14 CFR Section 25.571 (e) (2), issued on January 20, 1984.

Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-12.

Equivalent safety findings exist with respect to the following regulation: 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

Construcciones Aeronauticas, S.A. elected to demonstrate compliance with: 14 CFR Section 25.1419: Ice Protection.

Date of Application for Type Certificate: 3 December 1981.

## Required Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas, S.A. Model CN-235 is listed in CASA Document No. 86-3309, Master Equipment List, dated July 1986 or as revised and approved by the DGAC.

Federal Aviation Administration (FAA) approve Airplane Flight Manual Construcciones Aeronauticas, S.A. Model CN-235, Document No. D.T. 86-3512, published in the English language (DGAC approved on behalf of the FAA on 17 November 1986 or later DGAC approved revision), is required.

Service Information	Construcciones Aeronauticas, S.A. Maintenance and Structural Repair Manuals and all Service Bulletins, which are published in the English language, indicate applicability to the U.S. approved Construcciones Aeronauticas, S.A. Model CN-235 type design and that carry a statement: "DGAC approved may be interpreted as FAA Approved."
Available Documents	- Airplane Weight and Balance Control and Loading Data Document No. D.T. 85-3502. - Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

## NOTES

## NOTE 1 Weight and Balance:

- (a) A current Weight and Balance Report must be in each aircraft at the time of original airworthiness certification and at all times thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane empty weight and corresponding center of gravity location must include:  
Total engine and gearbox oil: 47.6 lb at Sta 336.44 in.  
Total hydraulic fluid: 39.03 lb at Sta 461.22 in.  
Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fluid</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

- (c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

NOTE 2 Airplane operation must be in accordance with the Airplane Flight Manual (AFM) listed above.

NOTE 3 Required structural inspections, inspection times, and retirement times for structural parts and for components are listed in the Airworthiness Limitations as presented in Section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this Section must not be changed without FAA approval.

NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in Section 1.4.1 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA approval.

NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.

**II. Model CN-235-100 (Approved October 26, 1989)**

Engines	2 Engines - General Electric Company, Model CT7-9C, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.								
Fuel	(a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:								
	<table> <thead> <tr> <th><u>Designation</u></th> <th><u>Specification</u></th> </tr> </thead> <tbody> <tr> <td>Jet A, A-1, B</td> <td>ASTM D1655</td> </tr> <tr> <td>JP-4, JP-5</td> <td>MIL-T-5624</td> </tr> <tr> <td>JP-8</td> <td>MIL-T-83133</td> </tr> </tbody> </table>	<u>Designation</u>	<u>Specification</u>	Jet A, A-1, B	ASTM D1655	JP-4, JP-5	MIL-T-5624	JP-8	MIL-T-83133
<u>Designation</u>	<u>Specification</u>								
Jet A, A-1, B	ASTM D1655								
JP-4, JP-5	MIL-T-5624								
JP-8	MIL-T-83133								

- (b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

#### Engine Limits

The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	Jet Thrust (lb)	Torque Meter Reading (ft - lb)	ITT (°C)	Engine RPM
Takeoff (normal)	1750	168	425	921*	45,300**
Takeoff (APR on)	1870	179	454	950	45,615
Max Continuous	1750	168	425	917	45,614

\*When OAT is lower than 35°C, ITT limit is 921°C. When OAT is between 35°C and 41°C the ITT limit has a lineal variation with the OAT, from 921°C to 944°C at sea level. When OAT is higher than 41°C the ITT limit is 950°C at sea level.

\*\* If OAT is higher than 41°C, the takeoff limit with APR on is applied.

#### Propeller and Propeller Limits

2 Propellers - Hamilton Standard Model - 14 RF-21.  
Blades: 4, Model RFC11R1-0C.  
Diameter: 132.24 in. max., 131.94 in. min.

Blade angle measured a 42 in. - radius - station:

Ground Idle	$-3.7^\circ \pm 1.0^\circ$
Max Reverse	$-12.4^\circ \pm 1.3^\circ$
Feather	$80.8^\circ \pm 0.5^\circ$
Flight Idle	$16.7^\circ \pm 0.8^\circ$

Propeller Spinner: Hamilton Standard, P/N 790185-1  
Propeller Deicer: Included in blade P/N

#### Airspeed Limits (IAS)

Unless otherwise noted below, speeds are - indicated airspeeds.

V<sub>MO</sub> (Maximum Operating) (See NOTE 5)

Sea Level	240 knots
20,000 ft	210 knots
25,000 ft	190 knots

Straight line variation between points.

V<sub>A</sub> (Maneuvering)

Sea level to 25,000 ft 160 knots

V<sub>FE</sub> (Flaps Extended)

10° (Takeoff)	160 knots
15° (Approach)	160 knots
23° (Landing)	150 knots

V<sub>LE</sub> (Landing Gear Extended) 150 knots

For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.

#### C.G. Range

See the appropriate FAA Approved Airplane Flight Manual listed below.

Datum	Sta 0.0 is located 92.40 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.		
Mean Aerodynamic Chord (MAC)	Length: 100.83 in. L.E. of MAC: 377.61 in aft of datum		
Leveling Means	Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.		
Maximum Weights (See NOTE 5)	Maximum Ramp	31,862 lb.	(14,450 kg)
	Maximum Takeoff	31,752 lb	(14,400 kg)
	Maximum Landing	31,311 lb	(14,200 kg)
	Maximum Zero Fuel	29,988 lb	(13,600 kg)
Minimum Crew	Two (2): Pilot and co-pilot		
Maximum Passengers	44		
Maximum Baggage	1654 lb (750 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.		
Fuel Capacity	Usable fuel (see Note 1 for unusable fuel):		

Location	Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing Main	270	1809	409.45
Right Wing Aux	420	2814	412.45
Left Wing Main	270	1809	409.45
Left Wing Aux	420	1814	412.45
<b>TOTAL USABLE</b>	<b>1380</b>	<b>9246</b>	<b>411.26</b>

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.  
Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

Oil Capacity	<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>	
	7.3 U.S. qt./tank on each engine	+350.47	
	3.8 U.S. qt/tank usable		
	5.0 U.S. qt/tank on each propeller gear box	+315.97	
	1.5 U.S. qt/tank usable		
Maximum Operating Altitude	25,000 ft. (18,000 ft. for passenger transportation)		
Control Surface Movements	Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
	Elevator tab (trim)	Up $-0.5^\circ \pm 0.5^\circ$	Down $9.5^\circ \pm 0.5^\circ$
	Elevator tab (emergency trim)	Up $2^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
	Elevator balance tab:		
		Up (for $+15^\circ$ elevator)	$1.75^\circ \pm 0.5^\circ$
		Down (for $-30^\circ$ elevator)	$9.50^\circ \pm 0.5^\circ$
	Rudder:	Right	$17.0^\circ \pm 0.25^\circ$
		Left	$12.0^\circ \pm 0.25^\circ$
	Rudder trim tab:	Right	$5.0^\circ \pm 0.5^\circ$
		Left	$3.0^\circ \pm 0.5^\circ$
Rudder balance tab:			
	Right (for rudder $12^\circ$ left)	$2.5^\circ \pm 0.25^\circ$	
	Left (for rudder $17^\circ$ right)	$5.0^\circ \pm 0.25^\circ$	

Ailerons:	Up $20.0^{\circ} \pm 0.5^{\circ}$	Down $20.0^{\circ} \pm 0.5^{\circ}$
Aileron trim tabs:	Up $8.0^{\circ} \pm 0.5^{\circ}$	Down $8.0^{\circ} \pm 0.5^{\circ}$
Aileron balance tabs:		
trailing edge up for aileron $0^{\circ}$ :		$5.0^{\circ} \pm 0.5^{\circ}$
trailing edge down for aileron $20^{\circ}$ up:		$8.0^{\circ} \pm 0.5^{\circ}$
trailing edge up for aileron $20^{\circ}$ down:		$18.0^{\circ} \pm 0.5^{\circ}$
Flaps (inner and outer)		
Cruise	$0.0^{\circ} \pm 0.5^{\circ}$	
Takeoff	$10.0^{\circ} \pm 0.5^{\circ}$	
Approach	$15.0^{\circ} \pm 0.5^{\circ}$	
Landing	$23.0^{\circ} \pm 0.5^{\circ}$	

All measurements are taken at trailing edge from neutral position.

Serial Nos. Eligible	The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.
Import Requirements	A United States Airworthiness Certificate may be issued on the basis of a Spanish Certificate of Airworthiness for Export, signed by a representative of the Direccion General de Aviacion Civil (DGAC), containing the following statement: "The airplane covered by this certificate has been examined, tested, and found to conform to the type design approved under FAA Type Certificate No. A21NM and is in a condition for safe operation. "Only CN-235-100 airplanes manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States airworthiness certificate."
Certification Basis	<p>14 CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62.</p> <p>Federal Aviation Administration Exemption No. Nm-103, from 14 CFR Section 25.571 (e) (2), issued on January 20, 1984.</p> <p>Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).</p> <p>14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-15. The CN-235-100 weight increase to 15,100 kg (33295 lbs) takeoff weight and 14,900 kg (32854 lbs) max landing weight, incorporating Service Bulletin 235-34-04 or CASA Document CDS) No 37-49 includes Amendment 36-17.</p> <p>Equivalent safety findings exist with respect to the following regulation: 14CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.</p> <p>The Special Conditions No. 25-ANM-22 (Docket no. NM-35), dated December 13, 1988, "Lightning and Radio Frequency (RF) Energy Protection".</p> <p>Construcciones Aeronauticas S.A. elected to demonstrate compliance with: 14 CFR Section 25.1419: Ice Protection.</p> <p style="padding-left: 40px;">Date of Application for Amended Type Certificate: May 12, 1987. Date of Application for the CN-235-100 weight increase: April 3, 1991.</p>
Equipment	<p>The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.</p> <p>Equipment approved for the Construcciones Aeronauticas, S.A. CN-235-100 is listed in CASA Document No. 88-3003, Master Equipment List, dated July 1988 or as revised and approved by DGAC.</p>

	Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas, S.A. Model CN-235-100, Document No. D.T. 87-3501, published in the English language (DGAC approved on behalf of the FAA on December 9, 1988 or later DGAC approved revision) is required. (See NOTE 5)
Service Information	Construcciones Aeronauticas, S.A. Maintenance and Structural Repair Manuals and all Service Bulletins, published in the English language, that indicate applicability to the U.S. approved Construcciones Aeronauticas, S.A. CN-235-100 type design and that carry a statement: "DGAC Approved may be interpreted as FAA Approved".
Available Documents	- Airplane Weight and Balance Control and Loading Data Document No. D.T. 85-3502. (See NOTE 5).  - Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

## NOTES

## NOTE 1 Weight and Balances

- (a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all times thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane empty weight and corresponding center of gravity location must include:  
Total engine and gearbox oil 47.6 lb at Sta 335.57 in.  
Type hydraulic fluid of 39.03 lb at Sta 460.35 in.  
Unusable fuel (77.05 lb) listed as follows:
- | <u>Unusable Fluid</u> | <u>U.S. Gallons</u> | <u>Pounds</u> | <u>Moment Arm (in)</u> |
|-----------------------|---------------------|---------------|------------------------|
| Drainable:            |                     |               |                        |
| Left Wing             | 4.25                | 28.47         | 409.68                 |
| Right Wing            | 4.25                | 28.47         | 409.68                 |
| Trapped Fuel:         |                     |               |                        |
| Tanks and fuel lines  | 3.00                | 20.10         | 410.07                 |
| Total unusable fuel   | 11.50               | 77.05         | 409.76                 |
- (c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

NOTE 2 Airplane operation must be in accordance with the Airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.

NOTE 3 Required structural inspections, inspections times, and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in Section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1 of covered in this section must not be changed without FAA engineering approval.

NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.

NOTE 5 For aircraft Model CN-235-100 incorporating CASA Service Bulletin S.B. 235-34-04 or the modification defined by the CASA Document CDS 3749, the previously established limitations to the parameters mentioned below, are modified in the following way:

Airspeed Limits (IAS)

V<sub>MO</sub> (Maximum Operating)

Sea Level	232 knots
20,000 ft	202 knots
25,000 ft 1	82 knots
Straight line variation between points.	

Maximum Weights

Maximum Ramp	33,405 lb	(15,150 kg)
Maximum Takeoff	33,295 lb	(15,100 kg)
Maximum Landing	32,854 lb	(14,900 kg)
Maximum Zero	31,090 lb	(14,100 kg)

Also applicable with the Airplane Flight Manual, Document D.T. 90-3504, is the Airplane Weight and Balance Control and Loading Data Document No. D.T. 90-3505, FAA approval of the CN-235-100 weight increase was given on February 21, 1999

**III. Model CN-235-200 (Approved March 13, 1992)**

Engines 2 Engines - General Electric Company, Model CT7-9C, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

Engine Limits The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	Jet Thrust (lb)	Torque Meter Reading (ft - lb)	ITT (°C)	Engine RPM
Takeoff (normal)	1750	168	425	921*	45,300 **
Takeoff (APR on)	1870	179	454	950	45,615
Max Continuous	1750	168	425	917	45,614

\*When OAT is lower than 35°C, ITT limit is 921°C. When OAT is between 35°C and 41°C the ITT limit has a lineal variation with the OAT, from 921°C to 944°C at sea level. When OAT is higher than 41°C the ITT limit is 950°C at sea level.

\*\* If OAT is higher than 41°C, the takeoff limit with APR on is applied.

Propeller and Propeller Limits	<p>2 Propellers - Hamilton Standard Model - 14 RF-21. Blades: 4, Model RFC11R1-0C. Diameter: 132.24 in. max., 131.94 in. min.</p> <p>Blade angle measured a 42 in. - radius - station:</p> <table border="0"> <tr> <td>Ground Idle</td> <td>-3.7° ± 1.0°</td> </tr> <tr> <td>Max Reverse</td> <td>-12.4° ± 1.3°</td> </tr> <tr> <td>Feather</td> <td>80.8° ± 0.5°</td> </tr> <tr> <td>Flight Idle</td> <td>16.7° ± 0.8°</td> </tr> </table> <p>Propeller Spinner: Hamilton Standard, P/N 790185-1 Propeller Deicer: Included in blade P/N</p>	Ground Idle	-3.7° ± 1.0°	Max Reverse	-12.4° ± 1.3°	Feather	80.8° ± 0.5°	Flight Idle	16.7° ± 0.8°						
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Max Reverse	-12.4° ± 1.3°														
Feather	80.8° ± 0.5°														
Flight Idle	16.7° ± 0.8°														
Airspeed Limits (IAS)	<p>Unless otherwise noted below, speeds are - indicated airspeeds.</p> <p>V<sub>MO</sub> (Maximum Operating)</p> <table border="0"> <tr> <td>Sea level</td> <td>232 knots</td> </tr> <tr> <td>20,000 ft</td> <td>202 knots</td> </tr> <tr> <td>25,000 ft</td> <td>182 knots</td> </tr> </table> <p>Straight line variation between points.</p> <p>V<sub>A</sub> (Maneuvering)</p> <table border="0"> <tr> <td>Sea level to 25,000 ft</td> <td>160 knots</td> </tr> </table> <p>V<sub>FE</sub> (Flaps Extended)</p> <table border="0"> <tr> <td>10° (Takeoff)</td> <td>160 knots</td> </tr> <tr> <td>15° (Approach)</td> <td>160 knots</td> </tr> <tr> <td>23° (Landing)</td> <td>150 knots</td> </tr> </table> <p>V<sub>LE</sub> (Landing Gear Extended) 150 knots For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.</p>	Sea level	232 knots	20,000 ft	202 knots	25,000 ft	182 knots	Sea level to 25,000 ft	160 knots	10° (Takeoff)	160 knots	15° (Approach)	160 knots	23° (Landing)	150 knots
Sea level	232 knots														
20,000 ft	202 knots														
25,000 ft	182 knots														
Sea level to 25,000 ft	160 knots														
10° (Takeoff)	160 knots														
15° (Approach)	160 knots														
23° (Landing)	150 knots														
C.G. Range	See the appropriate FAA Approved Airplane Flight Manual listed below.														
Datum	Sta 0.0 is located 92.40 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.														
Mean Aerodynamic Chord (MAC)	<p>Length: 100.83 in. L.E. of MAC: 377.61 in. aft of datum</p>														
Leveling Means	Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.														
Maximum Weights	<table border="0"> <tr> <td>Maximum Ramp</td> <td>34940 lb</td> <td>(15850 kg)</td> </tr> <tr> <td>Maximum Takeoff</td> <td>34830 lb</td> <td>(15800 kg)</td> </tr> <tr> <td>Maximum Landing</td> <td>34390 lb</td> <td>(15600 kg)</td> </tr> <tr> <td>Maximum Zero Fuel</td> <td>31080 lb</td> <td>(14100 kg)</td> </tr> </table>	Maximum Ramp	34940 lb	(15850 kg)	Maximum Takeoff	34830 lb	(15800 kg)	Maximum Landing	34390 lb	(15600 kg)	Maximum Zero Fuel	31080 lb	(14100 kg)		
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Maximum Landing	34390 lb	(15600 kg)													
Maximum Zero Fuel	31080 lb	(14100 kg)													
Minimum Crew	Two (2): Pilot and co-pilot														
Max. Passengers	44														
Maximum Baggage	1985 lb (900 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.														

## Fuel Capacity

Usable fuel (see Note 1 for unusable fuel):

Location		Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing	Main	270	1809	409.45
	Aux	420	2814	412.45
Left Wing	Main	270	1809	409.45
	Aux	420	1814	412.45
TOTAL USABLE		1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.  
 Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

## Oil Capacity

<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>
7.3 U.S. qt./tank on each engine	+350.47
3.8 U.S. qt/tank usable	
5.0 U.S. qt/tank on each propeller gear box	+315.97
1.5 U.S. qt/tank usable	

## Maximum Operating Altitude

25,000 ft. (18,000 ft. for passenger transportation)

## Control Surface Movements

Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
Elevator tab (trim)	Up $+0.5^\circ \pm 0.5^\circ$	Down $+11^\circ \pm 0.5^\circ$
Elevator tab (emergency trim)	Up $2^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
Elevator balance tab:	Up (for $+15^\circ$ elevator) $1.75 \pm 0.5^\circ$	Down (for $-30^\circ$ elevator) $9.50 \pm 0.5^\circ$
Rudder:	Right $19.0^\circ \pm 0.5^\circ$	Left $15.0^\circ \pm 0.5^\circ$
Rudder trim tab:	Right $5.0^\circ \pm 0.5^\circ$	Left $3.0^\circ \pm 0.5^\circ$
Rudder balance tab:	Right (for rudder $15^\circ$ left) $2.0^\circ \pm 0.5^\circ$	Left (for rudder $19^\circ$ right) $5.25^\circ \pm 0.5^\circ$
Ailerons:	Up $20.0^\circ \pm 0.5^\circ$	Down $20.0^\circ \pm 0.5^\circ$
Aileron trim tabs:	Up $8.0^\circ \pm 0.5^\circ$	Down $8.0^\circ \pm 0.5^\circ$
Aileron balance tabs:		
trailing edge up for aileron $0^\circ$ :	$5.0^\circ \pm 0.5^\circ$	
trailing edge down for aileron $20^\circ$ up:	$8.0^\circ \pm 0.5^\circ$	
trailing edge up for aileron $20^\circ$ down:	$18.0^\circ \pm 0.5^\circ$	
Flaps (inner and outer)		
Cruise	$0.0^\circ \pm 0.5^\circ$	
Takeoff	$10.0^\circ \pm 0.5^\circ$	
Approach	$15.0^\circ \pm 0.5^\circ$	
Landing	$23.0^\circ \pm 0.5^\circ$	

All measurements are taken at trailing edge from neutral position.

## Serial Nos. Eligible

The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

## Import Requirements

A United States Airworthiness Certificate may be issued on the basis of a Spanish Certificate of Airworthiness for Export, signed by a representative of the Direccion General de Aviacion Civil (DGAC), containing the following statement: "The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. A21NM and is in a condition for safe operation. "Only CN-235-200 airplanes manufactured in each Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate."

Certification Basis

14CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62.

Federal Aviation Administration Exemption No. NM-103, from 14 CFR Section 25.57 (e) (2), issued on January 20,1984.

Special Federal Aviation Regulation No. 27, effective 1 February 1974, including Amendments 27-1 through 27-5 (Fuel Venting and Exhaust Emissions).

14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-18.

Equivalent safety findings exist with respect to the following regulation. 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.

The Special Conditions No. 25-ANM-22 (Docket No. NM-35), dated December 13, 988, "Lightning and Radio Frequency (RF) Energy Protection".

Construcciones Aeronauticas S.A. elected to demonstrate compliance with: 14 CFR ection 25.1419: Ice Protection.

Date of Application for Amended Type Certificate: January 12,1990.

Required Equipment

The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.

Equipment approved for the Construcciones Aeronauticas S.A. CN-235-200 is listed in CASA Document No. 90-3016, Master Equipment List, dated July 1988 or as revised and approved by DGAC.

Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas S.A. Model CN-235-200, Document No. D.T. 91-3501, published in the English language (DGAC approved on behalf of the FAA on September 27, 1991 or later DGAC approved revision) is required.

Service Information

Construcciones Aeronauticas, S.A. Maintenance and Structural Repair Manuals and all Service Bulletins, published in the English language, that indicate applicability to the U.S. approved Construcciones Aeronauticas, S.A. CN-235-200 type design and that carry a statement: "DGAC Approved may be interpreted as FAA Approved."

Available Documents

- Airplane Weight and Balance Control and Loading Data Document No. D.T. 91-3502.
- Maintenance Review Board Report, Document No. MRB CN-235-PV.01.

NOTES

NOTE 1

Weight and Balance:

(a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.

(b) The airplane empty weight and corresponding center of gravity location must include:  
 Total engine and gearbox oil 47.6 lb at Sta 335.57 in.  
 Type hydraulic fluid of 39.03 lb at Sta 460.35 in.  
 Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fuel</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68

Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

(c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

NOTE 2 Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.

NOTE 3 Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

*NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.*

NOTE 5 CN-235-100 airplanes are eligible for conversion to upgraded model CN-235-200 when CASA Service Bulletin SB235-11-06 has been incorporated and further modified as per DGAC approved Documents CDS 30040, 30049, 30178 and 30188.

**IV. Model CN-235-300 (Approved December 30, 1998)**

Engines 2 Engines - General Electric Company, Model CT7-9C3, free turbine turboprop. Power turbine/propeller reduction gearing 15.9:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

(b) For approved fuel additives, see General Electric Company jet fuel specification D50TF2, current approved revision.

Anti-icing additives to specification MIL-I-27686E may be used to a concentration not in excess of 0.15% by volume.

Engine Limits The Maximum continuous and takeoff static level rating at ISA:

Conditions	Shaft Horse Power	ITT (°C)	Engine RPM (%)	Torque Meter Reading (%)	ESHP
Takeoff (normal)	1750	(a) (b) 917	101.3	(c) 100	1816
Max Continuous	1750	944	102.0	100	1816
Takeoff (APR on)	1870	940	102.0	107	1942

(a) The shown temperature value is the absolute maximum. See the appropriate FAA Approved Airplane Flight Manual listed below for the maintained ITT limits in relation with the environmental conditions.

- (b) Up to 10°C overtemperature are permitted over the maintained ITT values, for a maximum of two minutes.
- (c) The shown torque value is the absolute maximum. See the appropriate FAA Approved Airplane Flight Manual listed below for the maintained torque limits in relation with the environmental conditions.

Propeller and Propeller Limits	<p>2 Propellers - Hamilton Standard Model - 14 RF-37.          Blades: 4, Model RFA12A1-POC.          Diameter: 144.84 in..          Prohibited % rpm interval: 47% to 71%</p> <p>Propeller Spinner: Hamilton Standard, P/N 790185-2          Propeller Deicer: Included in blade P/N</p>														
Airspeed Limits (IAS)	<p>Unless otherwise noted below, speeds are - indicated airspeeds.</p> <p>V<sub>MO</sub> (Maximum Operating)</p> <table border="0"> <tr> <td>Sea level</td> <td>232 knots</td> </tr> <tr> <td>20,000 ft</td> <td>202 knots</td> </tr> <tr> <td>25,000 ft</td> <td>182 knots</td> </tr> </table> <p>Straight line variation between points.</p> <p>V<sub>A</sub> (Maneuvering)</p> <table border="0"> <tr> <td>Sea level to 25,000 ft</td> <td>160 knots</td> </tr> </table> <p>V<sub>FE</sub> (Flaps Extended)</p> <table border="0"> <tr> <td>10° (Takeoff)</td> <td>160 knots</td> </tr> <tr> <td>15° (Approach)</td> <td>160 knots</td> </tr> <tr> <td>23° (Landing)</td> <td>150 knots</td> </tr> </table> <p>V<sub>LE</sub> (Landing Gear Extended) 150 knots</p> <p>For other airspeed limits, see the appropriate FAA Approved Airplane Flight Manual listed below.</p>	Sea level	232 knots	20,000 ft	202 knots	25,000 ft	182 knots	Sea level to 25,000 ft	160 knots	10° (Takeoff)	160 knots	15° (Approach)	160 knots	23° (Landing)	150 knots
Sea level	232 knots														
20,000 ft	202 knots														
25,000 ft	182 knots														
Sea level to 25,000 ft	160 knots														
10° (Takeoff)	160 knots														
15° (Approach)	160 knots														
23° (Landing)	150 knots														
C.G. Range	See the appropriate FAA Approved Airplane Flight Manual listed below.														
Datum	Sta 0.0 is located 93.19 in. forward of the fuselage jig point (rivet), which is located on the underside fuselage skin, immediately forward of fuselage frame 1A.														
Mean Aerodynamic Chord (MAC)	<p>Length: 100.83 in.          L.E. of MAC: 377.61 aft of datum</p>														
Leveling Means	Plumb-bob suspended from aft face of aft cockpit compartment bulkhead over reticule on floor.														
Maximum Weights	<table border="0"> <tr> <td>Maximum Ramp</td> <td>34940 lb</td> <td>(15850 kg)</td> </tr> <tr> <td>Maximum Takeoff</td> <td>34830 lb</td> <td>(15800 kg)</td> </tr> <tr> <td>Maximum Landing</td> <td>34390 lb</td> <td>(15600 kg)</td> </tr> <tr> <td>Maximum Zero Fuel</td> <td>31080 lb</td> <td>(14100 kg)</td> </tr> </table>	Maximum Ramp	34940 lb	(15850 kg)	Maximum Takeoff	34830 lb	(15800 kg)	Maximum Landing	34390 lb	(15600 kg)	Maximum Zero Fuel	31080 lb	(14100 kg)		
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Maximum Landing	34390 lb	(15600 kg)													
Maximum Zero Fuel	31080 lb	(14100 kg)													
Minimum Crew	Two (2): Pilot and co-pilot														
Max. Passengers	44														
Maximum Baggage	1985 lb (900 kg) in rear cargo compartment. See the appropriate Weight and Balance Manual listed below.														

## Fuel Capacity

Usable fuel (see Note 1 for unusable fuel):

Location		Volume (U.S. Gal.)	Weight (lb)	Moment Arm (in)
Right Wing	Main	270	1809	409.45
	Aux	420	2814	412.45
Left Wing	Main	270	1809	409.45
	Aux	420	1814	412.45
TOTAL USABLE		1380	9246	411.26

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.  
Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

## Oil Capacity

<u>Volume (U.S. -quarts)</u>	<u>Moment Arm (in)</u>
7.3 U.S. qt./tank on each engine	+350.47
3.8 U.S. qt/tank usable	
5.0 U.S. qt/tank on each propeller gear box	+315.97
1.5 U.S. qt/tank usable	

## Maximum Operating Altitude

25,000 ft.

## Control Surface Movements

Elevator:	Up $30.0^\circ \pm 0.5^\circ$	Down $15.0^\circ \pm 0.5^\circ$
Elevator tab (trim)	Up $+0.5^\circ \pm 0.5^\circ$	Down $+11^\circ \pm 0.5^\circ$
Elevator tab (emergency trim)	Up $2^\circ \pm 0.5^\circ$	Down $7.0^\circ \pm 0.5^\circ$
Elevator balance tab:	Up (for $+15^\circ$ elevator) $1.75 \pm 0.5^\circ$	Down (for $-30^\circ$ elevator) $9.50 \pm 0.5^\circ$
Rudder:	Right $19.0^\circ \pm 0.5^\circ$	Left $15.0^\circ \pm 0.5^\circ$
Rudder trim tab:	Right $5.0^\circ \pm 0.5^\circ$	Left $3.0^\circ \pm 0.5^\circ$
Rudder balance tab:	Right (for rudder $15^\circ$ left) $2.0^\circ \pm 0.5^\circ$	Left (for rudder $+19^\circ$ right) $5.25^\circ \pm 0.5^\circ$
Ailerons:	Up $18.0^\circ \pm 0.5^\circ$	Down $18.0^\circ \pm 0.5^\circ$
Aileron trim tabs:	Up $8.0^\circ \pm 0.5^\circ$	Down $8.0^\circ \pm 0.5^\circ$
Aileron balance tabs:		
trailing edge up for aileron $0^\circ$ :	$5.0^\circ \pm 0.5^\circ$	
trailing edge down for aileron $20^\circ$ up:	$8.0^\circ \pm 0.5^\circ$	
trailing edge up for aileron $20^\circ$ down:	$18.0^\circ \pm 0.5^\circ$	
Flaps (inner and outer)		
Cruise	$0.0^\circ \pm 0.5^\circ$	
Takeoff	$10.0^\circ \pm 0.5^\circ$	
Approach	$15.0^\circ \pm 0.5^\circ$	
Landing	$23.0^\circ \pm 0.5^\circ$	

All measurements are taken at trailing edge from neutral position.

## Serial Nos. Eligible

The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

## Import Requirements

A United States Airworthiness Certificate may be issued on the basis of a Spanish Certificate of Airworthiness for Export, signed by a representative of the Direccion General de Aviacion Civil (DGAC), containing the following statement: "The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. A21NM and is in a condition for safe operation. "Only CN-235-300 airplanes manufactured in Spain and accompanied by a Spanish export certificate of airworthiness are eligible for a United States Airworthiness Certificate."

Certification Basis	<p>14CFR Section 21.29 and 14 CFR Part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61 and 25-62 and voluntary compliance with 14 CFR part 25.1419, Amendment 25-23 for parts not changed or not affected by the change.</p> <p>Compliance with 14 CFR part 25.1419 Amendment 25-72 for the airframe ice protection system, 14 CFR part 25.1316 at Amendment 25-80 for the Integrated Electronic Display System (IEDS), and 14 CFR part 25.905(d) at Amendment 25-72.</p> <p>Voluntary compliance with 14 CFR section 25.365(e) at Amendment 25-71 and 14 CFR part 25.571(e)(2) at Amendment 25-72.</p> <p>14 CFR Part 34, including Amendments 14-1 through 14-2.</p> <p>14 CFR Part 36, effective 1 December 1969, including Amendments 36-1 through 36-18.</p> <p>Equivalent safety findings exist with respect to the following regulation. 14 CFR Section 25.1305 (a) (2): Fuel Quantity Indicator.</p> <p>- Special Condition No. 25-ANM-22 (Docket No. NM-35), dated December 13, 1988, "Lightning and Radio Frequency (RF) Energy Protection" for parts not changed or not affected by the change.</p> <p>- Radio Frequency (RF) Energy Protection requirements included in Special Condition No. 25-ANM-22 for parts changed or affected by the change.</p> <p>Date of Application for Amended Type Certificate: September 8, 1998.</p>
Required Equipment	<p>The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.</p> <p>Equipment approved for the Construcciones Aeronauticas S.A. CN-235-300 is listed in CASA Document No. 98-3016, CN-235-300 Equipment List, dated Nov. 1998 or as revised and approved by DGAC.</p> <p>Federal Aviation Administration (FAA) approved Airplane Flight Manual, Construcciones Aeronauticas S.A. Model CN-235-300, Document No. D.T. 98-3002, published in the English language (DGAC approved on behalf of the FAA on December XX, 1998 or later DGAC approved revision) is required.</p>
Service Information	<p>Construcciones Aeronauticas, S.A. Maintenance and Structural Repair Manuals and all Service Bulletins, published in the English language, that indicate applicability to the U.S. approved Construcciones Aeronauticas, S.A. CN-235-300 type design and that carry a statement: "DGAC Approved may be interpreted as FAA Approved."</p>
Available Documents	<p>- Airplane Weight and Balance Control and Loading Data Document No. D.T. 98-3003.</p> <p>- Maintenance Review Board Report, Document No. MRB CN-235-PV.01.</p>

## NOTES

## NOTE 1

## Weight and Balance:

- (a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane empty weight and corresponding center of gravity location must include:  
 Total engine and gearbox oil 47.6 lb at Sta 335.57 in.  
 Type hydraulic fluid of 39.03 lb at Sta 460.35 in.  
 Unusable fuel (77.05 lb) listed as follows:

<u>Unusable Fuel</u>	<u>U.S. Gallons</u>	<u>Pounds</u>	<u>Moment Arm (in)</u>
Drainable:			
Left Wing	4.25	28.47	409.68
Right Wing	4.25	28.47	409.68
Trapped Fuel:			
Tanks and fuel lines	3.00	20.10	410.07
Total unusable fuel	11.50	77.05	409.76

(c) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.

- NOTE 2 Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the application operating rules, or the certification basis must be installed in the airplane.
- NOTE 3 Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.
- NOTE 4 Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 86-3001. Material covered in this section must not be changed without FAA engineering approval.

*NOTE: The CMR's may also be included in any appendix to the Maintenance Review Board Document No. MRB CN-235-PV.01.*

#### **V. Model C-295 (Approved December 17, 1999 - SEE NOTE 5).**

Engines 2 Engines – Pratt & Whitney of Canada, Model P&W 127G, free turbine turboprop. Power turbine/propeller reduction gearing 16.6:1.

Fuel (a) Fuels shall conform to the specifications listed or to subsequent revisions thereof:

<u>Designation</u>	<u>Specification</u>
Jet A, A-1, B	ASTM D1655
JP-4, JP-5	MIL-T-5624
JP-8	MIL-T-83133

Approved Fuel Additives and Inhibitors are set forth in sections 2-14 through 2-16 of CASA T.D. DT-5-C-97-5006

Engine Limits The Maximum continuous and takeoff static level rating at ISA:

Conditions	Max. Torque %	Max. ITT (°C)	Max. NH %	Max. NP %
Takeoff (normal) (5 min.)	101	765 [1]	102.3	101
Max Continuous	112	800	103.7	101
Transient [2] (20 seconds)	125	840	104.3	125
Max. Takeoff (One engine inoperative)	112	800	103.7	101



## Fuel Capacity

Usable fuel (see Note 1 for unusable fuel):

Location		Volume (U.S. Gal.)	Moment Arm (in)
Right Wing	Main	424	410.2
	Aux	571	414.72
Left Wing	Main	424	410.2
	Aux	571	414.72
TOTAL USABLE		1990	412..8

Fuel weight is based upon fuel density of 6.7 lb/U.S. gallon.  
 Pressure fueling: Maximum pressure for pressure fueling is 50 psi.

## Oil Capacity

Volume (U.S. -gal)Moment Arm (in)

The following data apply to each powerplant.

Usable Oil: 2.90 U.S. Gal.	347.83
Total Oil: 6.08 U.S. Gal.	351.61

## Maximum Operating Altitude

25,000 ft.

## Control Surface Movements

Elevator:	Up: $-25.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.5^{\circ} \pm 0.5^{\circ}$
Elevator tab (trim)	Up: $+0.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.0^{\circ} \pm 0.5^{\circ}$
Elevator tab (emergency trim)	Up: $+0.0^{\circ} \pm 0.5^{\circ}$ Down: $+12.0^{\circ} \pm 0.5^{\circ}$
Elevator balance tab:	Up (for $+12.5^{\circ}$ elevator) $-2.2 \pm 0.5^{\circ}$ Down (for $-25^{\circ}$ elevator) $7.7 \pm 0.5^{\circ}$
Rudder:	Right: $-19.0^{\circ} \pm 0.5^{\circ}$ ( $-22^{\circ}$ in Expander mode) Left : $+12.0^{\circ} \pm 0.5^{\circ}$ ( $+16.5^{\circ}$ in Expander mode)
Rudder trim tab:	Right: $-5.0^{\circ} \pm 0.5^{\circ}$ ( $-7^{\circ}$ trim in standby) Left : $+5.0^{\circ} \pm 0.5^{\circ}$ ( $+7^{\circ}$ trim standby)
Rudder balance tab:	Right (for rudder - $19^{\circ}$ left ) $-7.7^{\circ} \pm 0.5^{\circ}$ Left (for rudder $+15^{\circ}$ right) $+2.4^{\circ} \pm 0.5^{\circ}$
Ailerons:	Up $18.0^{\circ} \pm 0.5^{\circ}$ Down $18.0^{\circ} \pm 0.5^{\circ}$
Aileron trim tabs:	Up $-8.0^{\circ} \pm 0.5^{\circ}$ Down $8.0^{\circ} \pm 0.5^{\circ}$
Aileron balance tabs:	
trailing edge up for aileron $0^{\circ}$ :	$5.0^{\circ} \pm 0.5^{\circ}$
trailing edge down for aileron $18^{\circ}$ up:	$-6.7^{\circ} \pm 0.5^{\circ}$
trailing edge up for aileron $-18^{\circ}$ down:	$16.7^{\circ} \pm 0.5^{\circ}$
Flaps (inner and outer)	
Cruise	$0.0^{\circ} \pm 0.5^{\circ}$
Takeoff	$10.0^{\circ} \pm 0.5^{\circ}$
Approach	$15.0^{\circ} \pm 0.5^{\circ}$
Landing	$23.0^{\circ} \pm 0.5^{\circ}$

All measurements are taken at trailing edge from neutral position.

## Serial Nos. Eligible

The Spanish DGAC Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" below must be submitted for each individual airplane for which application for certification is made.

## Import Requirements

A United States Airworthiness Certificate may be issued (SEE NOTE 5) on the basis of a Spanish Certificate of Airworthiness for Export, signed by a representative of the Direccion General de Aviacion Civil (DGAC), containing the following statement:  
 "The airplane covered by this certificate has been examined, tested and found to conform to the type design approved under FAA Type Certificate No. A21NM and is in a condition

Certification Basis	<p>The certification basis is based on the CASA Model CN-235-200: 14 CFR part 21.29 and 14 CFR part 25, effective 1 February 1965, including Amendments 25-1 through 25-59, 25-61, 25-62 for parts not changed or not affected by the change.</p> <p>For changed portions of the aircraft: 14CFR Section 21.29 and 14 CFR Part 25, as amended by Amendments 25-1 through 25-89, Amendment 25-91 for Section 25.351, Amendment 25-72 for Section 25.1419(Ice Protection), and excluding Amendment 25-64 for Section 25.562 (c)(5) for the pilot and copilot seats.</p> <p>The aircraft is not certified against ditching</p> <p>14 CFR Part 34, including Amendments 34-1 through 34-3.</p> <p>14 CFR Part 36 including Amendments 36-1 through 36-21.</p> <p>Equivalent Safety Finding exists with respect to the following regulation:</p> <ul style="list-style-type: none"> <li>- FAR 25.1149 "Propeller Speed and Pitch Control" (ref. FAA Issue Paper P-2)</li> <li>- FAR 25.103 &amp; 25.201 "Use of 1-g Stall Speed Criteria Instead of Minimum Speed in the Stall as a Basis for Determining Compliance for Airplanes with Stall Identification Systems" (ref. FAA Issue Paper F-6).</li> </ul> <p><u>Exemptions:</u></p> <p>The following exemptions have been granted:</p> <ul style="list-style-type: none"> <li>- Exemption 6708 to FAR §25.571 (e)(1) for the "Bird Strike Speed"</li> <li>- Exemption 6929 to §C36.9(e)(1) of 14 CFR Part 36 for "Approach Speed Criteria", and to §C36.3(c) of 14 CFR Part 36 "Sideline Noise Criteria."</li> <li>- Partial Grant of Exemption 7088 to FAR §25.723 for "Shock Absorption Tests" (SEE NOTE 5).</li> </ul> <p>-</p> <p><u>Special Conditions:</u></p> <ul style="list-style-type: none"> <li>- High Intensity Radiated Fields (HIRF)</li> <li>- Use Automatic Takeoff Thrust Control System (autofeather/APR) for Approach Climb and Go-Around</li> </ul>
	<p><u>Date of application:</u> The reference date of application for the Amended Type Certificate is January 10, 1997.</p>
Required Equipment	<p>The basic required equipment as prescribed in the applicable Federal Aviation Regulations must be installed in the airplane.</p> <p>Equipment approved for the Construcciones Aeronauticas S.A. C-295 is listed in CASA Document No. DT-5-C-99-5005, C-295 Equipment List.</p> <p>Federal Aviation Administration (FAA) approved Airplane Flight Manual . Construcciones Aeronauticas S.A. Model C-295, Document No. D.T. 5-C-97-5006, published in the English language (DGAC approved on behalf of the FAA).</p>
Service Information	<p>Construcciones Aeronauticas, S.A. Maintenance and Structural Repair Manuals and all Service Bulletins, published in the English language, that indicate applicability to the U.S. approved Construcciones Aeronauticas, S.A. C-295 type design and that carry a statement: "DGAC Approved may be interpreted as FAA Approved."</p>
Available Documents	<ul style="list-style-type: none"> <li>- Airplane Weight and Balance Control and Loading Data Document No. D.T.5-C-97-5007.</li> <li>- Maintenance Review Board Report, Document No. MRB C-295 PV.01.</li> </ul>

**NOTES**

- NOTE 1            Weight and Balance:  
(a) A current Weight and Balance must be in each aircraft at the time of original airworthiness certification and at all time thereafter except in the case of an operator having an FAA approved loading system for weight and balance control.
- (b) The airplane must be loaded in accordance with Section 2 of the approved Airplane Flight Manual and the C.G. must be within the specified limits at all times.
- NOTE 2            Airplane operation must be in accordance with the airplane Flight Manual (AFM) listed above. All placards required in either the approved AFM, the applicable operating rules, or the certification basis must be installed in the airplane.
- NOTE 3            Required structural inspections, inspections times and retirement times for structural parts and for components are listed in the Airworthiness Limitation as presented in section 1.4 of Construcciones Aeronauticas, S.A. Document No. D.T. 5-C-99-5008.
- NOTE 4            Engine certification maintenance requirements (CMR) and systems certification maintenance requirements are included in section 1.4.1. of Construcciones Aeronauticas, S.A. Document No. D.T. 5-C-99-5008.
- NOTE 5            On December 20, 2000, the DGAC submitted a statement (Ref. No: 61/C-255/00-354 ) that the C-295 design complies with FAR §25.723 based on analysis of the CASA C-295 Main Landing Gear and Nose Landing Gear shock absorption tests, contingent on the inclusion of modification S30429. The FAA has accepted the DGAC's statement of compliance, and finds the CASA C-295 aircraft complies with FAR §25.723. Consequently the CASA Model C-295 Type Certificate, with Type Design Document (Master Drawing List) DT-98-3308 Rev C and modification S30429 will be valid after December 31, 2000, the date of expiration for Partial Grant of Exemption No. 7088. Accordingly, all CASA Model C-295 aircraft certificated in the United States must include modification S30429.

....END....