MINISTÉRIO DA AERONÁUTICA
DEPARTAMENTO DE PESQUISAS E DESENVOLVIMENTO
CENTRO TÉCNICO AEROESPACIAL

TYPE CERTIFICATE DATA SHEET Nº EA-9310-01

Type Certificate Holder:

MAULE AEROSPACE TECHNOLOGY, INC.
2099 Georgia Highway 133 South
Moultrie, Georgia – 31768
USA

EA-9310-01
Sheet 01

MAULE

MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235, M-7-235C, MX-7-420, MXT-7-420

April 1999

This data sheet, which is part of Type Certificate No. 9310, prescribes conditions and limitations under which the product, for which the Type Certificate was issued, meets the airworthiness requirements of the Brazilian Aeronautical Regulations.

I - Model MX-7-160 (Normal Category), approved 12 April 1999

ENGINE	Lycoming O-320-B2D.
FUEL	100/100LL minimum grade aviation gasoline.
ENGINE LIMITS	119.3 kW (160 hp) at 2 700 rpm, full throttle continuous.
PROPELLER AND PROPELLER LIMITS	Sensenich fixed pitch 74DM7S5-0-54 or -56 (188.0 cm (74 in) diameter). Diameter: not over 188.0 cm (74 in), not under 182.9 cm (72 in), no further reduction permitted. Static rpm at full throttle: not over 2 500 rpm, not under 2 400 rpm. Spinner: Sensenich spinner assembly C2346.

AIRSPEED LIMITS (IAS) (Landplane)

Never exceed	(V_{NE}):	180 mph (156 kt)
Max structural cruising	(V_c) :	147 mph (128 kt)
Maneuvering	(V_A) :	125 mph (109 kt)
Flaps extended	(V_{FE}) :	95 mph (82 kt)

C. G. RANGE (Landplane)	41.2 cm (+16.2 in) to 52.1 cm (+20.5 in) at 997.9 kg (2 200 lb). 35.6 cm (+14.0 in) to 52.1 cm (+20.5 in) at 703.1 kg (1 550 lb) or less. Straight line variation between points given.
EMPTY WEIGHT C. G. RANGE	None.

MAXIMUM WEIGHT

997.9 kg (2 200 lb)

MAXIMUM PASSENGERS

Number of seats:
4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56in)].

MAXIMUM BAGGAGE

77.1 kg (170 lb) at 50.8 cm (+20 in),
158.8 kg (350 lb) at 106.7 cm (+42 in),
113.4 kg (250 lb) at 177.8 cm (+70 in).

FUEL CAPACITY

162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in)] or

180.2 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

7.57 l (8 qt) at - 92.7 cm (- 36.5 in), 1.89 l (2 qt) minimum.
(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up	20° ±1°	Down	20° ±1°
Elevator	Up	30° ±1°	Down	20° ±1°
Elevator tab	Up	14° ±2°	Down	28° ±2°
Elevator tab w/ piano hinge	Up	12° ±2°	Down	38° ±2°
Rudder	Right	21° ±1°	Left	21° ±1°
Rudder tab	Right	48° ±4°	Left	48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0.

II - Model MXT-7-160 (Normal Category), approved 26 October 1998

ENGINE	Lycoming O-320-B2D.
FUEL	100/100LL minimum grade aviation gasoline.
ENGINE LIMITS	119.3 kW (160 hp) at 2 700 rpm, full throttle continuous.
PROPELLER AND PROPELLER LIMITS	Sensenich fixed pitch 74DM7S5-0-54 or -56 (74in diameter). Diameter: not over 188.0 cm (74 in), not under 182.9 cm (72 in), no further reduction permitted. Static rpm at full throttle: not over 2 500 rpm, not under 2 400 rpm. Spinner: Sensenich spinner assembly C2346.
AIRSPEED LIMITS (IAS) (Landplane)	Never exceed (V_{NE}) : 180 mph (156 kt) Max structural cruising (V_c) : 147 mph (128 kt) Maneuvering (V_A) : 125 mph (109 kt) Flaps extended (V_{FE}) : 95 mph (82 kt)
C. G. RANGE (Landplane)	39.1 cm (+15.4 in) to 52.1 cm (+20.5 in) at 997.9 kg (2 200 lb). 33.5 cm (+13.2 in) to 52.1 cm (+20.5 in) at 725.8 kg (1 600 lb) or less. Straight line variation between points given.
EMPTY WEIGHT C. G. RANGE	None.
MAXIMUM WEIGHT	997.9 kg (2 200 lb).
MAXIMUM PASSENGERS	Number of seats: 2 at 50.8 cm (+20 in). Optional: 4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56in)].
MAXIMUM BAGGAGE	77.1 kg (170 lb) at 50.8 cm (+20 in), 158.8 kg (350 lb) at 106.7 cm (+42 in), 113.4 kg (250 lb) at 177.8 cm (+70 in).
FUEL CAPACITY	162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in)] or 177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

FUEL CAPACITY (Cont.)

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

7.57 l (8 qt) at - 92.7 cm (- 36.5 in), 1.89 l (2 qt) minimum.
(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up	20° ±1°	Down	20° ±1°
Elevator	Up	30° ±1°	Down	20° ±1°
Elevator tab	Up	14° ±2°	Down	28° ±2°
Elevator tab w/ piano hinge	Up	12° ±2°	Down	38° ±2°
Rudder	Right	21° ±1°	Left	21° ±1°
Rudder tab	Right	48° ±4°	Left	48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0.

III - <u>Model MX-7-180A (Normal Category), approved 12 April 1999</u>

ENGINE

Lycoming O-360-C1F or O-360-C4F.

FUEL

100/100LL minimum grade aviation gasoline.

ENGINE LIMITS

134.2 kW (180 hp) at 2 700 rpm, full throttle continuous.

PROPELLER AND PROPELLER LIMITS

Sensenich fixed pitch 76EM8S5-0-56 [193.0 cm (76 in) diameter].

Diameter: not over 193.0 cm (76 in), not under 193.0 cm (76 in), no further reduction permitted.

Static rpm at full throttle: not over 2 500 rpm, not under 2 400 rpm.

Spinner: Sensenich spinner assembly C2346.

AIRSPEED LIMITS (IAS) (Landplane)

Never exceed	(V_{NE}) :	185 mph (161 kt)
Max structural cruising	(V_c) :	149 mph (129 kt)
Maneuvering	(V_A) :	125 mph (109 kt)
Flaps extended	(V_{FE}) :	98 mph (85 kt)

C. G. RANGE (Landplane)

40.4 cm (+15.9 in) to 52.1 cm (+20.5 in) at 1 088.6 kg (2 400lb)

32.0 cm (+12.6 in) to 52.1 cm (+20.5 in) at 703.1 kg (1 550 lb) or less.

Straight line variation between points given.

EMPTY WEIGHT C. G. RANGE

None.

MAXIMUM WEIGHT

1 088.6 kg (2 400 lb).

MAXIMUM PASSENGERS

Number of seats: 4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56 in)].

MAXIMUM BAGGAGE

77.1 kg (170 lb) at 50.8 cm (+20 in),
158.8 kg (350 lb) at 106.7 cm (+42 in),
113.4 kg (250 lb) at 177.8 cm (+70 in).

FUEL CAPACITY

162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in)] or

177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

7.57 l (8 qt) at - 92.7 cm (- 36.5 in), 1.89 l (2 qt) minimum .
(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up 20° ±1°	Down 20° ±1°
Elevator	Up 30° ±1°	Down 20° ±1°
Elevator tab	Up 14° ±2°	Down 28° ±2°
Elevator tab w/ piano hinge	Up 12° ±2°	Down 38° ±2°
Rudder	Right 21° ±1°	Left 21° ±1°
Rudder tab	Right 48° ±4°	Left 48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0.

IV - <u>Model MXT-7-180A (Normal Category), approved 26 October 1998</u>

ENGINE

Lycoming O-360-C1F or O-360-C4F.

FUEL

100/100LL minimum grade aviation gasoline.

ENGINE LIMITS

134.2 kW (180 hp) at 2 700 rpm, full throttle continuous.

PROPELLER AND PROPELLER LIMITS

Sensenich fixed pitch 76EM8S5-0-56 (193.0 cm (76 in) diameter)

Diameter: not over 193.0 cm (76 in),
not under 193.0 cm (76 in), no further reduction permitted.

Static rpm at full throttle: not over 2 500 rpm,
not under 2 400 rpm.

Spinner: Sensenich spinner assembly C-2346.

AIRSPEED LIMITS (IAS) (Landplane)

Never exceed	(V_{NE}) :	185 mph (161 kt)
Max structural cruising	(V_c) :	149 mph (129 kt)
Maneuvering	(V_A) :	125 mph (109 kt)
Flaps extended	(V_{FE}) :	98 mph (85 kt)

C. G. RANGE (Landplane)

40.9 cm (+16.1 in) to 52.1 cm (+20.5 in) at 1 088.6 kg (2 400lb)

34.0 cm (+13.4 in) to 52.1 cm (+20.5 in) at 725.8 kg (1 600 lb) or less.

Straight line variation between points given.

EMPTY WEIGHT C. G. RANGE

None

MAXIMUM WEIGHT

1 088.6 kg (2 400 lb).

MAXIMUM PASSENGERS

Number of seats:
4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56 in)].

MAXIMUM BAGGAGE

77.1 kg (170 lb) at 50.8 cm (+20 in),
158.8 kg (350 lb) at 106.7 cm (+42 in),
113.4 kg (250 lb) at 177.8 cm (+70 in).

FUEL CAPACITY

162.8 / (43 USgal) [151.4 / (40 USgal) usable; two 81.4 / (21.5 USgal) tanks in wings at 61.0 cm (+24 in)] or

177.9 / (47.6 USgal) [162.8 / (43 USgal) usable; two 90.1 / (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 / (30 USgal) [113.6 / (30 USgal) usable; two 56.8 / (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 / (42 USgal) [159 / (42 USgal) usable; two 79.5 / (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

7.57 / (8 qt) at - 92.7 cm (- 36.5 in), 1.89 / (2 qt) minimum .

(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up	20° ±1°	Down	20° ±1°
Elevator	Up	30° ±1°	Down	20° ±1°
Elevator tab	Up	14° ±2°	Down	28° ±2°
Elevator tab w/ piano hinge	Up	12° ±2°	Down	38° ±2°
Rudder	Right	21° ±1°	Left	21° ±1°
Rudder tab	Right	48° ±4°	Left	48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0

V - Model MX-7-180B (Normal Category), approved 12 April 1999

ENGINE	Lycoming O-360-C1F.
FUEL	100/100LL minimum grade aviation gasoline.
ENGINE LIMITS	134.2 kW (180 hp) at 2 700 rpm, full throttle continuous.
PROPELLER AND PROPELLER LIMITS	Hartzell constant speed HC-C2YR-1BF/F7666A – 193.0 cm (76 in) diameter. Diameter: not over 193.0 cm (76 in), not under 182.9 cm (72 in), no further reduction permitted. Pitch settings at 76.2 cm (30 in) station: low 12° high 27.8° to 29.8°. Avoid continuous operation between 2 000 and 2 250 rpm. Spinner: Hartzell spinner assembly A2298-2. Governor: Woodward H210681. McCauley C290D3X/T29.

AIRSPEED LIMITS (IAS) (Landplane)

Never exceed	(V_{NE}):	185 mph (161 kt)
Max structural cruising	(V_c) :	149 mph (129 kt)
Maneuvering	(V_A) :	125 mph (109 kt)
Flaps extended	(V_{FE}) :	98 mph (85 kt)

C. G. RANGE (Landplane)	40.4 cm (+15.9 in) to 52.1 cm (+20.5 in) at 1 134 kg (2 500 lb). 32.0 cm (+12.6 in) to 52.1 cm (+20.5 in) at 680.4 kg (1 500 lb) or less. Straight line variation between points given.
EMPTY WEIGHT C. G. RANGE	None.
MAXIMUM WEIGHT	1 134 kg (2 500 lb).
MAXIMUM PASSENGERS	Number of seats: 4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56 in)]. Optional: 5 [2 at 50.8 cm (+20 in), 2 at 134.6 cm (+53 in), 1 at 198.1 cm (+78 in)].
MAXIMUM BAGGAGE	77.1 kg (170 lb) at 50.8 cm (+20 in), 158.8 kg (350 lb) at 106.7 cm (+42 in), 113.4 kg (250 lb) at 177.8 cm (+70 in).

FUEL CAPACITY

162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in)]or

177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

7.57 l (8 qt) at - 92.7 cm (- 36.5 in), 1.89 l (2 qt) minimum .

(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up 20° ±1°	Down 20° ±1°
Elevator	Up 30° ±1°	Down 20° ±1°
Elevator tab	Up 14° ±2°	Down 28° ±2°
Elevator tab w/ piano hinge	Up 12° ±2°	Down 38° ±2°
Rudder	Right 21° ±1°	Left 21° ±1°
Rudder tab	Right 48° ±4°	Left 48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0

VI - <u>Model M-8-235 (Normal Category), approved 12 April 1999</u>

ENGINE

Lycoming O-540-J1A5D, O-540-J3A5, IO-540-W1A5D or O-540-B4B5.

FUEL

100/100LL minimum grade aviation gasoline.

ENGINE LIMITS

175.2 kW (235 hp) at 2 400 rpm, all operations (O-540J/ IO-540-W).
175.2 kW (235 hp) at 2 575 rpm, all operations (O-540-B).

PROPELLER AND PROPELLER LIMITS

Hartzell constant speed model HC-C2YR-1BF/F8468-6R or -3R (-3R applicable only to aircraft equipped with 7:00 tires or larger/179.3 kPa (26 psi) minimum air pressure.).

Diameter: -3R: not over 205.7 cm (81 in);
not under 195.6 cm (77 in).
-6R: not over 198.1 cm (78 in);
not under 195.6 cm (77 in).

Pitch settings at 76.2 cm (30 in) station: low 16°±1° high 30° ±1°

With O-540-B4B5 engine: low 14.2° ±0.1° high 30° ±1°.

Airplane with O-540-B4B5 engine: -3R. -6R: do not exceed 58.4 cm (23 in) M.P. below 2 050 rpm.

Use with O-540-J or IO-540-W only:
McCauley constant speed 3-blade model B3D32C414-C/G-82NDA-2 or -4 (-2 use with 7:00 tires or larger).
McCauley constant speed 2-blade model B2D37C224-B/G-90RA-9. (Use with 7:00 tires or larger/179.3 kPa (26 psi) minimum air pressure).

Pitch settings at 76.2 cm (30 in) station:
-2 (203.2 cm (80 in)): low 15.0° +0.2° high 30.0° +0.5°
-4 (198.1 cm (78 in)): low 15.7° +0.2° high 30.0° +0.2°
-9 (205.7 cm (81 in)): low 15.8° +0.2° high 24.6°+ 0.5°

Spinner: Hartzell spinner assembly A2298-2 (use with Hartzell propeller only).
McCauley spinner assembly D-6240 (use with McCauley 3-blade propeller only).
McCauley spinner assembly D-6195 (use with McCauley 2-blade propeller only).

Governor: Woodward F210681 or B210761 (O-540-J/IO-540-W only); E210761 (O-540-B only).
McCauley C290D3X/T30 (O-540-J/IO-540-W only); C290D3X/T31 (O-540-B only).

AIRSPEED LIMITS (CAS) (Landplane)

Never exceed	(V_{NE}) :	180 mph	(156 kt)
Max structural cruising	(V_c) :	145 mph	(126 kt)
Maneuvering	(V_A) :	125 mph	(109 kt)
Flaps extended	(V_{FE}) :	94 mph	(82 kt)

C. G. RANGE (Landplane)

38.1 cm (+15.0 in) to 52.1 cm (+20.5 in) at 1 134 kg (2 500 lb).

30.5 cm (+12.0 in) to 52.1 cm (+20.5 in) at 771.1 kg (1 700 lb) or less.

Straight line variation between points given.

EMPTY WEIGHT C. G. RANGE

None.

MAXIMUM WEIGHT

1 134 kg (2 500 lb).

MAXIMUM PASSENGERS

Number of seats:
4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56 in)].

Optional:
5 [2 at 50.8 cm (+20 in), 2 at 134.6 cm (+53 in), 1 at 198.1 cm (+78 in)].

MAXIMUM BAGGAGE

77.1 kg (170 lb) at 50.8 cm (+20 in),
158.8 kg (350 lb) at 106.7 cm (+42 in),
113.4 kg (250 lb) at 177.8 cm (+70 in).

FUEL CAPACITY

162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in)] or

177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

IO-540: 7.57 l (8 qt) at - 86.4 cm (- 34 in), 4.73 l (5 qt) minimum.

O-540: 11.36 l (12 qt) at - 86.4 cm (- 34 in), 8.52 l (9 qt) minimum.

(See Note 1 for data on system oil.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up	20° ±1°	Down	20° ±1°
Elevator	Up	30° ±1°	Down	20° ±1°
Elevator tab	Up	14° ±2°	Down	28° ±2°
Elevator tab w/ piano hinge	Up	12° ±2°	Down	38° ±2°
Rudder	Right	21° ±1°	Left	21° ±1°
Rudder tab	Right	48° ±4°	Left	48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0.

VII - Model M-7-235C (Normal Category), approved 12 April 1999

ENGINE

Lycoming O-540-J1A5D, O-540-J3A5, IO-540-W1A5D or O-540-B4B5.

FUEL

100/100LL minimum grade aviation gasoline.

ENGINE LIMITS

175.2 kW (235 hp) at 2 400 rpm, all operations (O-540J/IO-540-W).
175.2 kW (235 hp) at 2 575 rpm, all operations (O-540-B).

PROPELLER AND PROPELLER LIMITS

Hartzell constant speed model HC-C2YR-1BF/F8468-6R or -3R (-3R applicable only to aircraft equipped with 7:00 tires or larger/ 179.3 kPa (26 psi) minimum air pressure.).

Diameter: -3R: not over 205.7 cm (81 in);
not under 195.6 cm (77 in).
-6R: not over 198.1 cm (78 in);
not under 195.6 cm (77 in).

Pitch settings at 76.2 cm (30 in) station: low 16° ±1°
high 30° ±1°

With O-540-B4B5 engine: low 13.8° ±0.1° high 30° ±1°.
-6R: do not exceed 58.4 cm (23 in) M.P. below 2 050 rpm.
McCauley constant speed 3-blade model B3D32C414-C/ G-82NDA-2 or -4 (-J/-W engine only)(-2 use with 7:00 tires or larger).
McCauley constant speed 2-blade model B2D37C224-B/G-90RA-9 (Use with 7:00 tires or larger/179.3 kPa (26 psi) minimum air pressure.).

Pitch settings at 76.2 cm (30 in) station:
-2 (203.2 cm (80 in)): low 15.0° ± 0.2°, high 30.3° ± 0.5° (-J/-W engine)
-4 (198.1 cm (78 in)): low 15.7° ± 0.2°, high 30.0° ± 0.2° (-J/-W engine)
-9 (205.7 cm (81 in)): low 14.7° ± 0.2°, high 24.6° ± 0.5° (-J/-W engine)
-9 (205.7 cm (81in)): low 13.3° ± 0.2°, high 24.6° ± 0.5° (-B engine)

Spinner: Hartzell spinner assembly A2298-2 (use with Hartzell propeller only).
McCauley spinner assembly D-6240 (use with McCauley 3-blade propeller only).
McCauley spinner assembly D-6195 (use with McCauley 2-blade propeller only).

Governor: Woodward F210681 or B210761 (-J/-W only), E210761 (-B only).
McCauley C290D3X/T30 or DC290D1X/T14 (-J/-W only), C290D3X/T31 or DC290D1X/T15 (-B only).

AIRSPEED LIMITS (IAS) (Landplane)

Never exceed	(V_{NE}) :	182 mph	(158 kt)
Max structural cruising	(V_c) :	147 mph	(128 kt)
Maneuvering	(V_A) :	125 mph	(109 kt)
Flaps extended	(V_{FE}) :	95 mph	(83 kt)

(See Note 10 for data in CAS)

C. G. RANGE (Landplane)

38.1 cm (+15.0 in) to 52.1 cm (+20.5 in) at 1 134 kg (2 500 lb).

30.5 cm (+12.0 in) to 52.1 cm (+20.5 in) at 798.3 kg (1 760 lb) or less.

EMPTY WEIGHT C. G. RANGE

None.

MAXIMUM WEIGHT

1 134 kg (2 500 lb).

MAXIMUM PASSENGERS

Number of seats:
5 [2 at 50.8 cm(+20 in), 2 at 134.6 cm (+53 in), 1 at 210.8 cm (+83 in)].

MAXIMUM BAGGAGE

77.1 kg (170 lb) at 50.8 cm (+20 in),
158.8 kg (350 lb) at 106.7 cm (+42 in),
113.4 kg (250 lb) at 182.9 cm (+72 in).

FUEL CAPACITY

177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)].

Optional wing auxiliary tanks:

113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or

159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)].

(See Note 1 for data on system fuel.)

OIL CAPACITY

IO-540: 7.57 l (8 qt) at - 86.4 cm (- 34 in), 4.73 l (5 qt) minimum.

O-540: 11.36 l (12 qt) at - 86.4 cm (- 34 in), 8.52 l (9 qt) minimum.

(See Note 1 for data on oil system.)

WING ANTI-ICE FLUID

Not Applicable.

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°
Fourth Notch	48° ±2°

Aileron Up 20° ±1° Down 20° ±1°

CONTROL SURFACE MOVEMENTS (Cont.)	Elevator	Up 30° ±1°	Down 20° ±1°	
	Elevator tab	Up 14° ±2°	Down 28° ±2°	
	Elevator tab w/ piano hinge	Up 12° ±2°	Down 38° ±2°	
	Rudder	Right 21° ±1°	Left 21° ±1°	
	Rudder tab	Right 48° ±4°	Left 48° ±4°	

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate No. 11S0.

VIII - Model MX-7-420 (Normal Category), approved 11 November 1993

ENGINE

Allison Gas Turbine 250-B17C

FUEL

Primary: MIL-T-5624L, grade JP-4 and JP-5, MIL-T-83133A, grade JP-8, ASTM-D-1655, Jet A, A1 or B, JP-1 Fuel conforming to ASTM-D-1655, Jet A, Artic Diesel Fuel DF-A (VV0F800B) conforming to ASTM-D-1655, Jet A or A1 Diesel #1 fuel conforming to ASTM-D-1655, Jet A.

Emergency: MIL-G-5572, all grades (aircraft boost pump on; maximum of 6 hours operation per overhaul period of turbine through an engine operating range of idle to 90% maximum SHP).

Cold Weather: To assure consistent starts below 4°C (40°F), the following fuels may be necessary: MIL-T-5624, grade JP-4, ASTM-D-1655, Jet B AVGAS/Jet A, Jet A1 or Jet JP-5 mixture. (Refer to Cold Weather Fuels, paragraph 2-48, for mixing/use of cold weather fuel in Allison Manual 11W2.)

ENGINE LIMITS

275.2 kW (369 hp) at 2 030 rpm continuous.

PROPELLER AND PROPELLER LIMITS

Hartzell, constant speed, full-feathering beta,
Model HC-B3TF-7A/T10173F-21R.

Diameter: 204.5 – 198.1 cm (80.5 - 78 in).

Pitch settings at 76.2 cm (30 in) station:
Reverse pitch -15° ± 5°
Feather 81.1° ± 5°.
Spinner: Hartzell spinner assembly A3640P.

AIRSPEED LIMITS (CAS) (Landplane)	Maximum operating (V_{MO}) : 151 mph (131 kt) Maximum structural cruising (V_c) : 145 mph (126 kt) Maneuvering (V_A) : 121 mph (105 kt) Flaps extended (V_{FE}) : 94 mph (82 kt)
C. G. RANGE (Landplane)	38.1 cm (+15.0 in) to 50.8 cm (+20.0 in) at 1 134 kg (2 500 lb) 30.5 cm (+12.0 in) to 50.8 cm (+20.0 in) at 771.1 kg (1 700 lb) or less. Straight line variation between points given.
EMPTY WEIGHT C. G. RANGE	None.
MAXIMUM WEIGHT	1 134 kg (2 500 lb).
MAXIMUM PASSENGERS	Number of seats: 4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56in)]. Optional: 5 [2 at 50.8 cm (+20 in), 2 at 134.6 cm (+53 in), 1 at 198.1 cm (+78 in)].
MAXIMUM BAGGAGE	77.1 kg (170 lb) at 50.8 cm (+20 in), 158.8 kg (350 lb) at 106.7 cm (+42 in), 113.4 kg (250 lb) at 177.8 cm (+70 in).
FUEL CAPACITY	162.8 / (43 USgal) [151.4 / (40 USgal) usable; two 81.4 / (21.5 USgal) tanks in wings at 61.0 cm (+24 in) – considered one tank] or 177.9 / (47.6 USgal) [162.8 / (43 USgal) usable; two 90.1 / (23.8 USgal) tanks in wings at 61.0 cm (+24 in) – considered one tank]. Optional wing auxiliary tanks: 113.6 / (30 USgal) [113.6 / (30 USgal) usable; two 56.8 / (15 USgal) tanks in wings at 61.0 cm (+24 in)] or 159 / (42 USgal) [159 / (42 USgal) usable; two 79.5 / (21 USgal) tanks in wings at 61.0 cm (+24 in)]. (See Note 1 for data on system fuel.)
OIL CAPACITY	9.46 / (10 qt) at - 57.2 cm (- 22.5 in), 8.52 / (9 qt) minimum. (See Note 1 for data on system oil.)
WING ANTI-ICE FLUID	Not Applicable.
MAXIMUM OPERATING ALTITUDE	6 096 m (20 000 feet).

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up 20° ±1°	Down 20° ±1°
Elevator	Up 30° ±1°	Down 20° ±1°
Elevator tab	U 14° ±2°	Down 28° ±2°
Elevator tab w/ piano hinge	Up 12° ±2°	Down 38° ±2°
Rudder	Right 21° ±1°	Left 21° ±1°
Rudder tab	Right 48° ±4°	Left 48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

Production Certificate N°. 11S0.

IX - Model MXT-7-420 (Normal Category), approved 12 April 1999

ENGINE

Allison Gas Turbine 250-B17C

FUEL

Primary: MIL-T-5624L, grade JP-4 and JP-5, MIL-T-83133A, grade JP-8 ASTM-D-1655, Jet A, A1 or B, JP-1 Fuel conforming to ASTM-D-1655, Jet A, Artic Diesel Fuel DF-A (VV0F800B) conforming to ASTM-D-1655, Jet A or A1 Diesel #1 fuel conforming to ASTM-D-1655, Jet A.

Emergency: MIL-G-5572, all grades (aircraft boost pump on; maximum of 6 hours operation per overhaul period of turbine through an engine operating range of idle to 90% maximum SHP).

Cold Weather: To assure consistent starts below 4°C (40°F), the following fuels may be necessary: MIL-T-5624, grade JP-4, ASTM-D-1655, Jet B AVGAS/Jet A, Jet A1 or Jet JP-5 mixture. (Refer to Cold Weather Fuels, paragraph 2-48, for mixing/use of cold weather fuel in Allison Manual 11W2.)

ENGINE LIMITS

275.2 kW (369 hp) at 2 030 rpm continuous.

PROPELLER AND PROPELLER LIMITS

Hartzell, constant speed, full-feathering beta, model HC-B3TF-7A/T10173F-21R.

Diameter: 204.5 – 198.1 cm (80.5 - 78 in).

Pitch settings at 76.2 cm (30 in) station:

reverse pitch -15° ± 5°

feather 81.1° ± 5°.

Spinner: Hartzell spinner assembly A3640P.

AIRSPEED LIMITS (IAS) (Landplane)	Maximum operating (V_{MO}): 151 mph (131 kt) Maximum structural cruising (V_c) : 145 mph (126 kt) Maneuvering (V_A) : 121 mph (105 kt) Flaps extended (V_{FE}): 94 mph (82 kt)
C. G. RANGE (Landplane)	40.6 cm (+16.0 in) to 52.1 cm (+20.5 in) at 1 134 kg (2 500 lb). 33.0 cm (+13.0 in) to 52.1 cm (+20.5 in) at 771.1 kg (1 700 lb), or less. Straight line variation between points given.
EMPTY WEIGHT C. G. RANGE	None.
MAXIMUM WEIGHT	1 134 kg (2 500 lb).
MAXIMUM PASSENGERS	Number of seats: 4 [2 at 50.8 cm (+20 in), 2 at 142.2 cm (+56 in)]. Optional: 5 [2 at 50.8 cm (+20 in), 2 at 134.6 cm (+53 in), 1 at 198.1 cm (+78 in)].
MAXIMUM BAGGAGE	77.1 kg (170 lb) at 50.8 cm (+20 in), 158.8 kg (350 lb) at 106.7 cm (+42 in), 113.4 kg (250 lb) at 177.8 cm (+70 in).
FUEL CAPACITY	162.8 l (43 USgal) [151.4 l (40 USgal) usable; two 81.4 l (21.5 USgal) tanks in wings at 61.0 cm (+24 in) – considered one tank)] or 177.9 l (47.6 USgal) [162.8 l (43 USgal) usable; two 90.1 l (23.8 USgal) tanks in wings at 61.0 cm (+24 in)]. Optional wing auxiliary tanks: 113.6 l (30 USgal) [113.6 l (30 USgal) usable; two 56.8 l (15 USgal) tanks in wings at 61.0 cm (+24 in)] or 159 l (42 USgal) [159 l (42 USgal) usable; two 79.5 l (21 USgal) tanks in wings at 61.0 cm (+24 in)]. (See Note 1 for data on system fuel.)
OIL CAPACITY	9.46 l (10 qt) at - 57.2 cm (- 22.5 in), 8.52 l (9 qt) minimum. (See Note 1 for data on system oil.)
WING ANTI-ICE FLUID	Not Applicable.
MAXIMUM OPERATING ALTITUDE	6 096 m (20 000 feet).

CONTROL SURFACE MOVEMENTS:

Wing flaps

Handle full down	-7° ±1°
First Notch	0° ±1°
Second Notch	24° ±3°
Third Notch	40° ±3°

Aileron	Up 20° ±1°	Down 20° ±1°
Elevator	Up 30° ±1°	Down 20° ±1°
Elevator tab	Up 14° ±2°	Down 28° ±2°
Elevator tab w/ piano hinge	Up 12° ±2°	Down 38° ±2°
Rudder	Right 21° ±1°	Left 21° ±1°
Rudder tab	Right 48° ±4°	Left 48° ±4°

S/N'S ELIGIBLE

A Certificate of Airworthiness for Export endorsed as noted under "Import Requirements" must be submitted for each individual aircraft for which application for a Brazilian Certificate of Airworthiness is made.

PRODUCTION BASIS

None. Prior to original certification of each aircraft, a FAA representative must perform a detailed inspection for workmanship, materials, and conformity to the approved technical data and a check of the flight characteristics.

DATA PERTINENT TO ALL MODELS:

DATUM

Wing leading edge.

LEVELING MEANS

Leveling lug and mark on bottom side of right wing root.

IMPORT ELIGIBILITY

A Brazilian Certificate of Airworthiness may be issued on the basis of a FAA Export Certificate of Airworthiness (or a third country Export Certificate of Airworthiness, in case of used aircraft imported from such country), including the following statement:

"The aircraft covered by this certificate have been examined and found to be in conformity with the Brazilian approved type design as defined by the Brazilian Type Certificate Nº. 9310 and in condition of safe operation".

The CTA Report H.10-1250-00, dated 09 April 1999, for aircraft models MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235, M-7-235C, MX-7-420 and MXT-7-420, contains the Brazilian requirements for the acceptance of these airplanes.
(See Note 4)

CERTIFICATION BASIS

Certification Rules for the models MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-7-235C, M-8-235:

Part 3, Civil Air Regulations, effective 15 May 1956 as amended by 3-1 through 3-5 and 3.705 as amended by 3-7; and the RBHA - Brazilian Requirements for Aeronautical Certification, which endorses the FAR 36 amended through 36-4 and FAR 23.955 in lieu of CAR 3.435.

Special Certification Rules for the Model MX-7-420 and MXT-7-420:

Part 3, Civil Air Regulations, effective 15 May 1956, as amended through 3-7; and the RBHA - Brazilian Requirements for Aeronautical Certification, which endorses the FAR 36 as amended through 36-14, SFAR 27 as amended through 27-2, and the following RBHA - Brazilian Requirements for Aeronautical Certification, which endorses the FAR Part 23 requirements for turbine engine installations (amendments in brackets):

23.45	(-21)	23.1027 (-14)
23.49	(-21)	23.1041 (-7)
23.65	(-21)	23.1043 (-21)
23.75	(-21)	23.1045 (-7)
23.77	(-21)	23.1091 (-7)
23.173	(-14)	23.1093 (-18)
23.175	(-17)	23.1103 (-7)
23.251	(-0)	23.1105 (0)
23.253	(-7)	23.1111 (-17)
23.335	(-16)	23.1121 (-18)
23.361	(-26)	23.1141 (-18)
23.371	(-7)	23.1143 (-17)
23.629	(-31)	23.1145 (-18)
(to include whirl mode)		
23.863	(-23)	23.1155 (-7)
23.901	(-18)	23.1165 (-17)
23.903	(-26)	23.1183
23.905	(-26)	23.1303 (-17)
23.929	(-14)	3.1305 (-26)
23.933	(-17)	23.1323 (-20)
23.937	(-7)	23.1337 (-18)
23.939	(-18)	23.1353 (-20)
23.943	(-18)	23.1505 (-7) & 3.187 or 23.333
23.951	(-15)	23.1521 (-21)
23.955	(-7)	23.1527 (-7)
23.977	(-17)	23.1529 (-26)
23.991	(-26)	23.1545 (-23)
23.997	(-15)	23.1549 (-12)
23.1013	(-15)	23.1557 (-23)
23.1015	(-15)	23.1583 (-23)
23.1019	(-15)	23.1587 (-23)

Model MX-7-420:

- Brazilian requirements established through the CTA letter N°. 131-FDH/91, dated 20 March 1991.
- Type Certificate N°. 9310 issued on 11 November 1993.
- Date of Application: 20 December 1990.

CERTIFICATION BASIS (Cont.)

Models MXT-7-160 and MXT-7-180A:
- Addendum to Type Certificate issued on 26 October 1998.
- Date of Application: 02 November 1994.

Model MX-7-180B:
- Addendum to Type Certificate issued on 12 April 1998.
- Date of Application: 03 January 1994.

Model MXT-7-420:
- Addendum to Type Certificate issued on 12 April 1998.
- Date of Application: 18 February 1994.

Models MX-7-160, MX-7-180A and M-8-235:
- Addendum to Type Certificate issued on 12 April 1998.
- Date of Application: 02 November 1994.

Model M-7-235C:
- Addendum to Type Certificate issued on 12 April 1998.

Date of Application: 27 February 1996.

REQUIRED EQUIPMENT

The basic required equipment, as described in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification. In addition, the following items of equipment are required:

(A) Stall Warning Indicator, Maule drawing 6016F.

(B) The following Brazilian Airplane Flight Manuals signed by the FAA on behalf of the CTA, must be on board of each referred airplane:

1. Model MX-7-420, AFM dated 10 November 1993.
   (The original version of this manual comprises revisions A and B of the basic FAA approved Flight Manual).
2. Model M-8-235, AFM dated 10 August 1992, rev. B dated 08 February 1993.
3. Model MX-7-160, AFM dated 13 November 1992, rev. C dated 11 May 1995.
4. Model MXT-7-160, AFM dated 13 November 1992, rev. A dated 28 October 1994 (S/N 17001C through 17003C only).
5. Model MX-7-180A, AFM dated 3 June 1993, rev. B dated 11 May 1995.
6. Model MXT-7-180A, AFM dated 3 June 1993, rev. A dated 28 October 1994.
7. Model MX-7-180B, AFM dated 12 July 1993.
8. Model MXT-7-420, AFM dated 12 July 1993.
9. Model M-7-235C, AFM dated 10 October 1995.

NOTES:

NOTE 1: Weight and balance. Current weight and balance report including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at its delivery. The certificated empty weight and corresponding center of gravity location must include unusable fuel and undrainable oil as follows:

Fuel 8.2 kg (18 lb) at 61.0 cm (+24 in) 75.7 l (20 Usgal) main	MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235.
Fuel 12.5 kg (27.6 lb) at 61.0 cm (+24 in)	MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235, M-7-235C.
Oil 2.7 kg (6 lb) at - 92.7 cm (- 36.5 in)	MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B.
Oil 2.7 kg (6 lb) at - 86.4 cm (- 34 in)	M-7-235C.
Fuel 7.35 kg (16.2 lb) at 61.0 cm (+24 in) 153.7 l (40.6 USgal) main*	MX-7-420, MXT-7-420.
Fuel 14.1 kg (31 lb) at 61.0 cm (+24 in) 153.7 l (40.6 USgal) main*	MXT-7-420.

*Two main tanks considered one tank

Oil 9.1 kg (20 lb) at -57.2 cm (- 22.5 in)	MX-7-420, MXT-7-420.

NOTE 2: Markings and placards. The following placards shall be displayed:

(A) In front of and in clear view of the pilot:

1. For M-5 and subsequent models:
"THIS AIRPLANE MUST BE OPERATED AS A NORMAL CATEGORY AIRPLANE IN COMPLIANCE WITH THE OPERATION LIMITATIONS STATED IN THE AIRPLANE FLIGHT MANUAL AND IN THE FORM OF PLACARDS AND MARKINGS."

2. "NO ACROBATIC MANEUVERS, INCLUDING SPINS, APPROVED." or "AEROBATIC MANEUVERS, INCLUDING SPINS, ARE NOT APPROVED."

3. For MX-7-420 and MXT-7-420:

"ROUGH AIR OR MANEUVERING SPEED: 121 MPH (105K)"

For MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235, M-7-235C:
"MANEUVERING SPEED: 125 MPH IAS (109K)."

4. The following placard must be installed on all models

"THIS AIRCRAFT APPROVED FOR DAY OR NIGHT IFR NON-ICING FLIGHT WHEN EQUIPPED IN ACCORDANCE WITH FAR 91 OR FAR 135."

NOTE 2: (Cont.)

5. "SEE LOADING INSTRUCTIONS IN WEIGHT AND BALANCE SECTION OF AIRPLANE FLIGHT MANUAL."

6. "FUEL REMAINING IN TANK WHEN INDICATOR READS ZERO CANNOT BE USED SAFELY IN FLIGHT."

7. For MX-7-160, MXT-7-160, MX-7-180A ,MXT-7-180A, MX-7-180B, M-8-235, M-7-235C:

   "DO NOT TURN OFF ALTERNATOR IN FLIGHT EXCEPT IN CASE OF EMERGENCY."

8. For MX-7-420 and MXT-7-420:

   "COMPASS UNRELIABLE WHEN HEATED INLET IS ON."

9. For -235 series (when using -6R propeller):

   "DO NOT EXCEED 23 INCHES M.P. BELOW 2 050 RPM."

10. For MXT-7-180A:

    "DEMONSTRATED CROSSWIND 15 MPH."

11. On the instrument panel or wing root panel at the auxiliary fuel tank transfer switches, (if installed):

FUEL TRANSFER PUMPS	
PUSH FOR AUX. QUANT. LEFT	PUSH FOR AUX. QUANT. RIGHT

FUEL CAPACITY: MAIN TANKS (*) GAL. USABLE EACH, AUX. TANKS (**) GAL. USABLE EACH TANK.

*75.7 *l* (20 USgal) except M-7, MXT-7 and M-8 series may have either 75.7 *l* (20 USgal) or 87.1 *l* (23 USgal).

**For M-7, MXT-7 and M-8 series, 56.8 or 79.5 *l* (15.0 or 21.0 USgal).

For MX-7-420: 56.8 *l* (15.0 USgal).

(B) Located on the flap handle

1. For M-7-235C:

“FLAPS/PULL ON/ 2ND NOTCH/ TAKEOFF/ 4TH NOTCH/ LANDING”

For MX-7-420, MXT-7-420, MX-7-180A/-180B/-160, MXT-7-180A/-160 and M-8-235:

“FLAPS/PULL ON/2ND NOTCH/TAKEOFF/3RD NOTCH/LANDING”

NOTE 2: (Cont.)

(C) Located at the main fuel tank selector valve on left kick panel:

1. For MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MX-7-180B, M-8-235, M-7-235C:

FUEL SELECTOR VALVE

LEFT: 20* GAL.
OFF BOTH
RIGHT: 20* GAL.

*or 81.4 l (21.5 USgal) for M-7/MXT-7/M-8 series and MX-7-160/-180A/-180B:

For MX-7-420 and MXT-7-420:

FUEL SELECTOR VALVE
BOTH ON
OFF

(D) In rear cabin area:

1. For M-5 and subsequent models:

"CARGO OR BAGGAGE LIMITATIONS
MAX. LOAD AREA "A" 170 LBS.
MAX. LOAD AREA "B" 350 LBS.
MAX. LOAD AREA "C" 250 LBS."

For models with optional 5th seat installed and M-7-235C:

"CHECK WEIGHT AND BALANCE CAREFULLY WHEN USING 5TH SEAT OR LOADING REAR CARGO/BAGGAGE."

"MAXIMUM REAR SEAT LOADING 170 LBS."

In addition, all markings and placards for passenger information under normal or emergency conditions must be in Portuguese (or English and Portuguese). External markings for emergency operation of doors, normal ground operation of cargo doors and servicing operations must be in Portuguese (or bilingual). Marking and placards indicating maximum loads in cargo and baggage compartments must be also presented in Portuguese (or bilingual). A list of these placards for the aircraft and the respective translations acceptable to CTA is provided in the report H.10-1250-00.

NOTE 3: Reserved.

NOTE 4: The differences of the Brazilian airplanes in relation to the basic FAA type design are summarized below:

1. The Brazilian Airplane Flight Manual.
2. Markings and placards for passenger have to be in Portuguese or bilingual.

NOTE 5: Airplane Models Similarity:

MX-7-160 : Same as MXT-7-180, except for engine, propeller, and has conventional tailwheel landing gear.
MXT-7-160 : Same as MXT-7-180, except for engine and propeller.

NOTE 5: (Cont.)

MX-7-180A : Same as MXT-7-180, except for engine, propeller, and has conventional tail wheel landing gear.
MXT-7-180A: Same as MXT-7-180, except for engine and propeller.
MX-7-180B : Same as MXT-7-180 except for conventional tail wheel landing gear.
M-8-235 : Same as M-6-235, s/n 7474C & up, except for flaps, ailerons and landing gear (aluminum spring mains).
M-7-235C : Same as MT-7-235B except spring aluminum main landing gear.
MX-7-420 : Same as MX-7-235 except for nacelle, engine, propeller and rudder.
MXT-7-420 : Same as MXT-7-180 except for nacelle, engine, and propeller.

NOTE 6: Equipment approved for all models is listed on the Required and Optional Equipment Lists.

NOTE 7: The following aircraft are eligible for manufacture under Production Certificate No. 11S0:

Models	Serial numbers
MX-7-420	13001C and up
M-8-235	15001C and up
MX-7-180A	20001C and up
MXT-7-180A	21001C and up
MX-7-160	19001C and up
MXT-7-160	17001C and up
MX-7-180B	22001C and up
M-7-235C	25001C and up

NOTE 8: All Maule float installations require installation of wing tip mounted anti-collision light system conforming to Maule drawing 7045F for night flight.

NOTE 9: For all aircraft, all placards required in the applicable approved Airplane Flight Manual and skiplane and floatplane AFM Supplements must be installed in the appropriate location.

NOTE 10: Airspeed limits (CAS) for models M-7/M-8:

Landplane:	Never exceed	(V_{NE}):	180 mph (156 kt)
	Max structural cruising	(V_c) :	145 mph (126kt)
	Maneuvering	(V_A) :	125 mph (109kt)
	Flaps extended	(V_{FE}) :	94 mph (82kt)

LUIZ ALBERTO C. MUNARETTO – Ten.-Cel.-Av.
Chefe da Divisão de Homologação Aeronáutica
(Chief, Divisão de Homologação Aeronáutica)

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