

C.G. range (Landing gear extended)

Landing gear retraction moment -79,860 in.-lb. (moves the C.G. forward)

Weight (Pounds)	Forward		Aft	
	% S.M.C.	Aft of datum (in.)	% S.M.C.	Aft of datum (in.)
Up to 81,600	25	623.18	39.0	648.54
95,900	25	623.18	35.8	642.75

Straight line variation between weights.

Maximum weights

Taxi 96,500 lb.
 Takeoff 95,900 lb.
 Landing 91,335 lb.
 Zero fuel 77,160 lb.

Minimum crew

3. Pilot and copilot at (77), flight engineer at (102).

Maximum passengers

90. (See approved weight and balance report for actual number and location)

Maximum luggage

	Volume (Cu.ft.)	Maximum floor loading (p.s.f.)	Capacity (lb.)	
Upper aft hold	212	82	2,120	(948)
Lower forward hold	194	62	1,940	(372)
Lower aft hold	88	62	880	(800)

Fuel capacity

(See NOTE 1(b) for data on system fuel and oil)

	Total (U.S. gal.)	Usable (U.S. gal.)	
2 inboard wing tanks	2,141.0 each	2,140 each	(621)
2 outboard wing tanks	372.5 each	370 each	(729)

Oil capacity

(See NOTE 1(b) for data on system fuel and oil)

1.05 U.S. gal. per engine Total oil 2.1 U.S. gal. (886)

II - SUD AVIATION Caravelle SE 210 Model III (Transport Category), approved July 12, 1960

Same as SE 210 Model I except for maximum weights, stabilizer setting 1° up, engine installation, engine silencer and wheels and brakes.

Engines

2 Rolls-Royce Avon 527 turbojets

Fuel

French: TRO (AIR 3405)
 British: Aviation Kerosene D.Eng. RD 2482 (AVTUR)
 or D.Eng. RD 2494 (AVTUR) 50
 American: JP-1 (MIL-F-5616)
 Canadian: 3-GP-23B
 or
 For aircraft on which modification No. 227 has been applied:
 French: (AIR 3407)
 British: D.Eng. RD 2486
 American: JP-4 (MIL-F-5624/C)
 Canadian: 3-GP-22B

Oil

British: D.Eng. RD 2487
 American: ESSO Aviation Turbo oil 35

Engine limits

Static Sea Level Ratings

Rating	Minimum Thrust (lb.)	Maximum R.P.M.	Max. Turbine Gas Temp., °C
Maximum takeoff (5 min.)	11,400	8,050	675
Maximum continuous	9,500	7,750	580

Airspeed limits (CAS)		<u>Knots</u>
Vne (Never exceed)		325 or Mach 0.81 whichever is the lesser
Vno (Normal operation)		300 or Mach 0.77 whichever is the lesser
Va (Maneuvering)		174
Vfe (Flaps down 0° to 10°)		258
Vfe (Flaps down 10° to 20°)		202
Vfe (Flaps down 20° to 35°)		190
Vlo (Landing gear operation)		180
Vle (Landing gear extended)		218
Vllo (Landing light extension)		215
Brake parachute		
(Normal operation)		115
(Never exceed)		130
Air brake operation		325 or Mach 0.81
Air brake extended		325 or Mach 0.81
Vmc (Minimum control)		Less than the stalling speed

C.G. range (Landing gear extended) Landing gear retraction moment -79,860 in.-lb. (moves the C.G. forward)

Weight (Pounds)	Forward		Aft	
	% S.M.C.	Aft of datum (in.)	% S.M.C.	Aft of datum (in.)
Up to 81,600	25	623.18	39	648.54
101,400	25	623.18	35	641.29

Straight line variation between weights.

Maximum weights	Taxi	102,500 lb.
	Takeoff	101,400 lb.
	Landing	96,570 lb.
	Zero fuel	78,260 lb.

Minimum crew 3. Pilot and copilot at (77), flight engineer at (102).

Maximum passengers 90. (See approved weight and balance report for actual number and location)

Maximum luggage	Volume (Cu.ft.)	Maximum floor loading (p.s.f.)	Capacity (lb.)	
	Upper aft hold	212	82	2,120 (948)
	Lower forward hold	194	62	1,940 (372)
	Lower aft hold	88	62	880 (800)

Fuel capacity (See NOTE 1(b) for data on system fuel and oil)

	Total (U.S. gal.)	Usable (U.S. gal.)	
2 inboard wing tanks	2,141.0 each	2,140 each	(621)
2 outboard wing tanks	372.5 each	370 each	(729)

Oil capacity (See NOTE 1(b) for data on system fuel and oil)

1.05 U.S. gal. per engine Total oil 2.1 U.S. gal. (886)

III - SUD AVIATION Caravelle SE 210 Model VIR (Transport Category), approved June 5, 1961

Same as SE 210 Model III except for maximum weights, engine installation, reversers, spoilers, windshield and cockpit, artificial feel (elevator and rudder control systems). Vortex generators, and wheels and brakes.

Engines 2 Rolls-Royce Avon 532R or Avon 533R turbojets

Fuel	American: JP-1 (MIL-F-5616) JP-4 (MIL-F-5624C) Canadian: 3-CP-23B, 3-CP-22B British: D.Eng. RD 2482, 2494, 2486 French: TRO AIR 3405, AIR 3407
Oil	ESSO Aviation Turbo Oil 35 ESSO Turbo Oil 35 (Also known as Penola Turbo Oil 35 or Humble Turbo Oil 35) Castrol 98 Gas Turbine Oil Texaco Synthetic Aircraft Turbo Oil 15

Engine limits Static Sea Level Ratings

Rating	Minimum Thrust (lb.)		Maximum R.P.M.		Max. Turbine Gas Temp., °C	
	532R	533R	532R	533R	532R	533R
Maximum takeoff (5 min.)	12,080	12,600	8,050	8,150	670	685
Maximum continuous	10,710	10,710	7,900	7,900	595	595

EXCEPT WHEN:

Knots Mod. 1122 installed Mod. 1042 installed

Airspeed limits (CAS)

Vne (Never exceed)	350	325	345	or Mach .81 whichever is the lesser
Vno (Normal operation)	325	300	320	or Mach .77 whichever is the lesser
Va (Maneuvering)	190			(Sea Level)
	213			(H = 39,300 ft.)
Vfe (Flaps down 0° to 5°)	270			
(Flaps down 5° to 10°)	258			
(Flaps down 10° to 20°)	202			
(Flaps down 20° to 35°)	190			
Vlo (Landing gear operation)	180			
Vle (Landing gear extended)	245			
Vllo (Landing light extension)	215			
Airbrake operation	350	325	345	or Mach .81
Airbrake extended	350	325	345	or Mach .81
Vmc (Minimum control)	Less than the stalling speed			

C.G. range (Landing gear extended)

Landing gear retraction moment -85,930 in.-lb. (moves the C.G. forward)

Weight (Pounds)	Forward		Aft	
	% S.M.C.	Aft of datum (in.)	% S.M.C.	Aft of datum (in.)
Up to 110,200	25	623.18	39	648.54

Maximum weights

Taxi	111,300 lb.
Takeoff	110,200 lb.
Landing	105,000 lb.
Zero fuel	79,400 lb.
	81,570 lb. (Mod. 1042 installed)

Minimum crew

(See NOTE 4)

All operations except training, test and ferry flights

3. Pilot and copilot at (77), flight engineer at (102).

Training, test and ferry flights

2. Pilot and copilot at (77)

Maximum passengers

90. (See approved weight and balance report for actual number and location)

Maximum luggage	<u>UAL Version</u>				
Maximum luggage	<u>Mod. 712 installed</u>				
		Volume <u>(Cu.ft.)</u>	Maximum floor <u>loading (p.s.f.)</u>	Capacity <u>(lb.)</u>	
	Left upper aft hold	120	122	1,200	(954)
	Right upper aft hold	81	122	810	(950)
	Lower forward hold	194	61	1,940	(372)
	Lower aft hold	88	61	880	(800)
	<u>Mod. 998, 1188</u>				
	<u>Installed</u>				
	Lower forward hold	222.5	61	3,065	(374)
	Lower aft hold	116.5	61	1,575	(798)
Fuel capacity	<i>(See NOTE 1(b) for data on system fuel and oil)</i>				
		Total <u>(U.S. gal.)</u>	Usable <u>(U.S. gal.)</u>		
	2 inboard wing tanks	2,141.0 each	2,140 each	(621)	
	2 outboard wing tanks	372.5 each	370 each	(729)	
Oil capacity	<i>(See NOTE 1(b) for data on system fuel and oil)</i>				
	1.05 U.S. gal. per engine	Total oil 2.1 U.S. gal.			(886)

Data Pertinent to All Models

Datum	Zero moment datum is located on the center line of the aircraft at the vertical line tangent to the aircraft theoretical nose, i.e., 82.8 inches forward of frame No. 7. Horizontal arms to the rear of the datum are positive (+).				
Standard Mean chord (S.M.C.)	181.42 inches The leading edge of the standard mean chord is at +577.8 in.				
Leveling means	Leveling plates in forward lower hold at Frames 22 and 25.				
Control surface movements	Elevator	Up 30°	Down 12°		
	Rudder	Right 25°	Left 25°		
	Aileron	Up 21°	Down 21°		
	Flaps	35°	Total angle of travel		
	Upper airbrake	Up 70°			
	Lower airbrake	Down 75°			
	Spoilers	Up 60°	(for Model VIR only)		
Maximum operating altitude	39,300 ft.				
Other operating limitations	Aircraft shall be operated in compliance with the operating limitations specified in the S.G.A.C. approved Airplane Flight Manual.				
Serial Nos. eligible	The French Government Certificate of Airworthiness for export endorsed as noted under "Certification basis" must be submitted for each individual aircraft for which application for certification is made.				
Certification basis	CAR 10. Type Certificate No. 7A6 dated April 18, 1959. Date of application for Type Certificate September 30, 1955.				
	Each aircraft and any replacement part manufactured in France must be clearly identified as imported.				

A U.S. Airworthiness Certificate may be issued on the basis of Certificate of Airworthiness for Export signed by a representative of the Secretariat General a l'Aviation Civile (S.G.A.C.) containing the following statement:

"The aeroplane covered by this certificate has been examined and found to comply with U.S. Civil Air Regulation Part 4b, effective December 31, 1953, including amendments 4b1, 4b2, 4b4, 4b7, 4b9 and SR 422 A (Models I and III), SR 422 B (Model VIR) and with the Special Requirements notified by the U.S. Government to the French Government and conforms to T.C. 7A6."

Compliance with the ditching requirements has been demonstrated.

Compliance with the ice protection requirements of CAR 4b.640 has been demonstrated.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification Basis) must be installed in the aircraft for certification.

The following additional equipment is required:

	<u>Weight</u>	<u>(lb.)</u>
(a) Stall warning, 1 horn SANOR Model TR 2	2	(59)
(b) High speed warning according to SR 450A 1 horn SANOR Model J8 AV or 1 cling bell BONVOISIN 4003/AF/G - (Mod. 1132 installed)	2 1	(59) (59)
(c) Artificial feel device, Elevator Control System SUD AVIATION drawing No. 27 06 003 (Models I and III) SUD AVIATION drawing No. 27 06 801 (Model VIR) Aileron Control System SUD AVIATION drawing No. 17 50 425 Rudder Control System SUD AVIATION drawing No. 27 07 003 (Models I and III) SUD AVIATION drawing No. 27 07 295 (Model VIR)	51 69 17 44 60	(932) (932) (772) (932) (932)
(d) Control surface positions Elevator: 1 transmitter AIR EQUIPEMENT Model 11501 1 indicator AIR EQUIPEMENT Model 12504.01 Aileron: 1 transmitter AIR EQUIPEMENT Model 11501 1 indicator AIR EQUIPEMENT Model 12504.02 Rudder: 1 transmitter AIR EQUIPEMENT Model 11501 1 indicator AIR EQUIPEMENT Model 12504.03	1 1 1 1 1 1	(1145) (49) (739) (49) (1160) (49)

NOTE 1. (a) Current weight and balance report including list of equipment included in the certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

(b) "Unusable Fuel and System Oil" and all hydraulic fluid must be included in the certificated empty weight.

"Unusable Fuel is that quantity of fuel in the system and in the tanks which is unavailable to the engine under critical flight conditions as defined in CAR 4b.416. This unusable fuel includes "system fuel" which is defined as the quantity required to fill the system and tanks to the tank outlet level when the airplane is on the ground level attitude. The fuel gauges are calibrated with the unusable fuel as the zero datum.

The total amount of fuel is as follows:

<u>Usable fuel</u>	<u>Unusable fuel</u>
5020 U.S. gal.	7 U.S. gal.

System oil is that amount of oil required to fill the oil system and tanks and is completely contained within the engine.

System oil weight is 31 lb.

The oil tank capacity shown in the data sheet includes only the usable oil.

A sight glass allows to check the oil level.

- NOTE 2. The following is a list of aircraft parts which are critical from the fatigue standpoint and must be replaced at the times specified:
2 Pressure regulators, LOCKHEED-ENGLAND Model AIR 43444 6,000 hours
- NOTE 3. All aircraft must be maintained and repaired in accordance with the French Government approved Maintenance and Structural Repair Manuals.
- NOTE 4. Aircraft incorporating SUD Mod. 1126 may be flown with a minimum crew as shown on page I.4.1 of S.G.A.C. approved Airplane Flight Manual SE 210 655.
- NOTE 5. Sud/Lear Autoland Installation - SE 210 Model VI R.
If Sud Modifications Nos. 1186, 1357 and 1358 have been incorporated in accordance with Caravelle Service Bulletin No. 22.33, operation of the autopilot is authorized down to 50 feet. (The above equipment complies with FAA Advisory Circular A.C. 20-31).

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