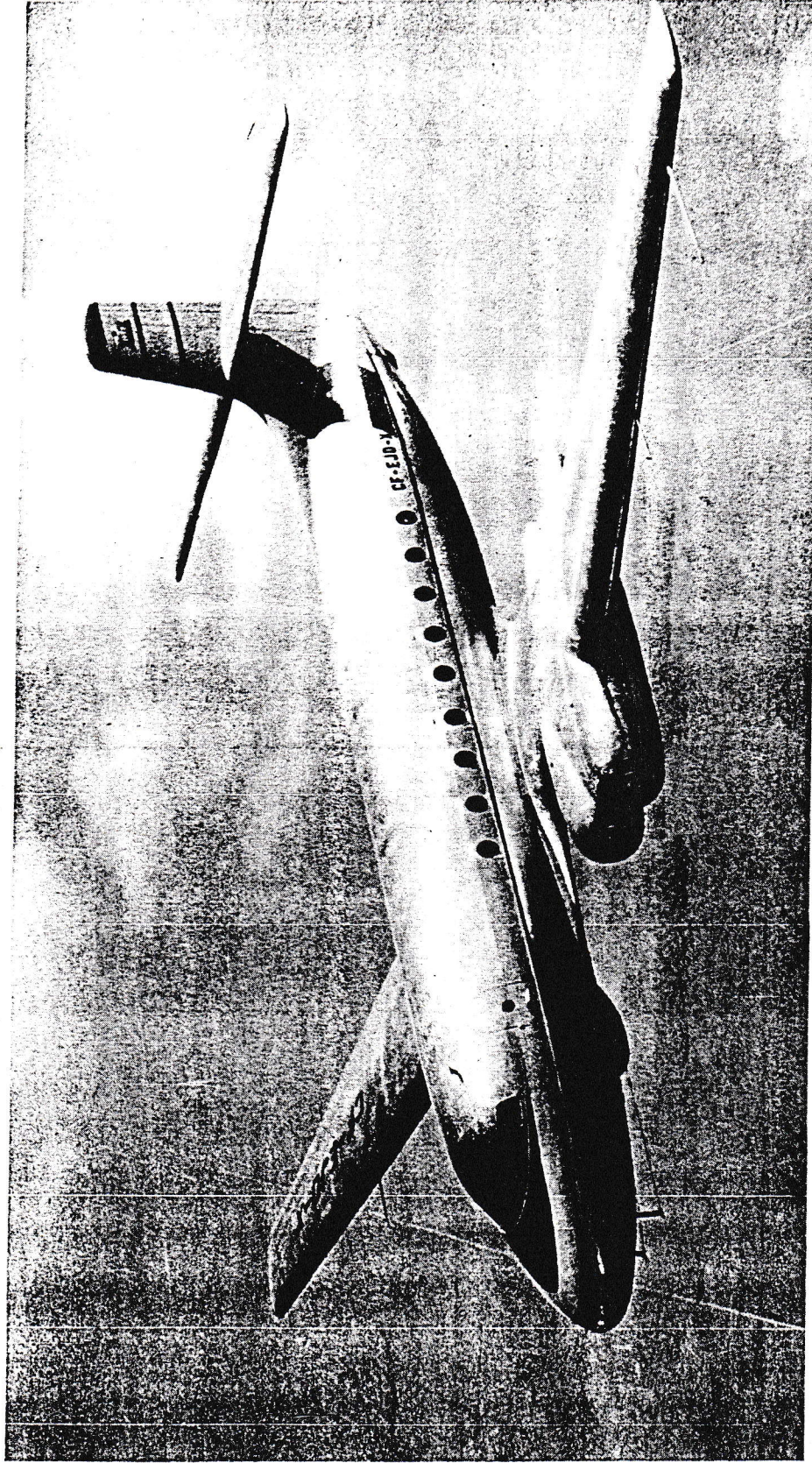




Standard Aircraft Characteristics

BY AUTHORITY OF
COMMANDING GENERAL
AIR MATERIEL COMMAND
U. S. AIR FORCE

ADVANCED TRAINER AIRPLANE

"JETLINER"

AVRO CANADA

FOUR J 33-A-35

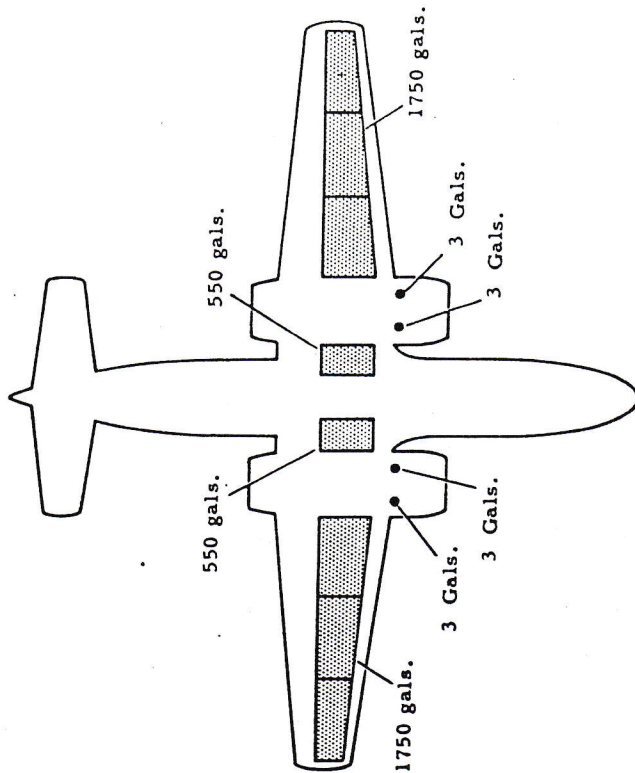
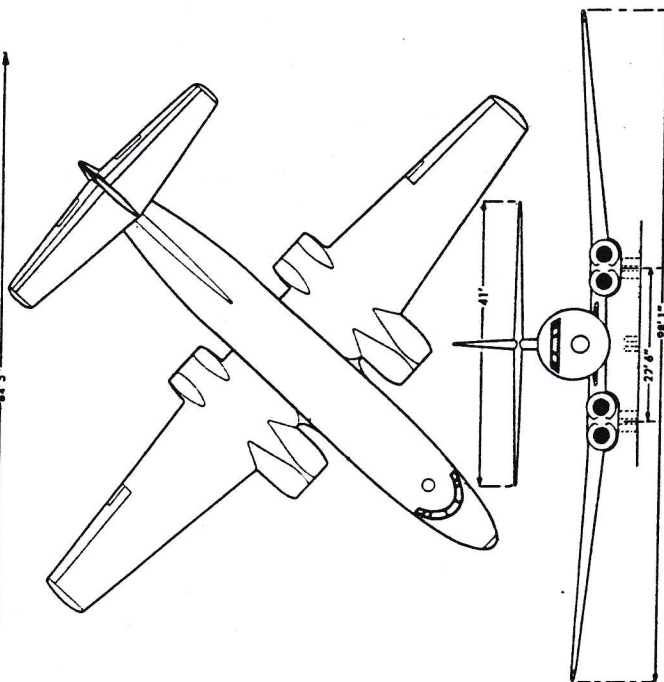
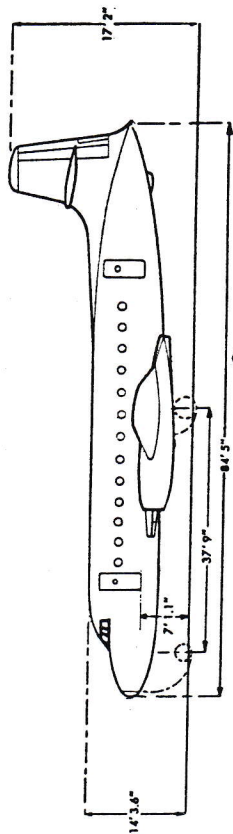
ALLISON

FEB. 20, 1951

Air Force-WFAR-O-38 DEC 50 300

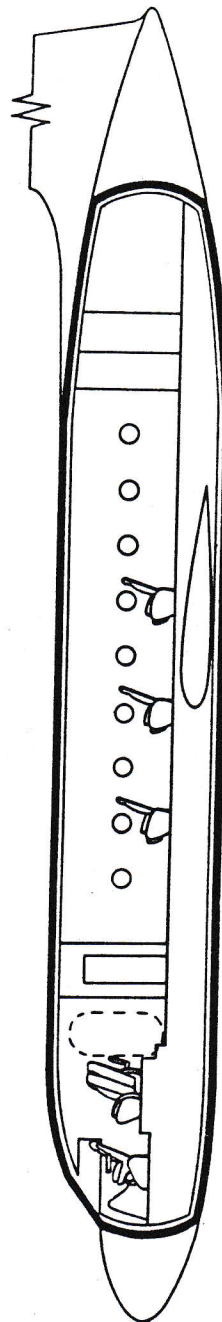
Wing Area 1157 sq. ft.
Aspect Ratio 8.3

Wing Sections - Root NACA 23016.5
- Tip NACA 23012
Standard Mean Chord . . . 141.4 in.



Fuel (Gal)

Oil (Gal)



POWER PLANT

Manufacturer - Allison
Model - J33-A-35

(The above engine will be fitted with a J33-A-33 accessories drive housing).

Type - Centrifugal Turbojet

Diameter - 50.5 inches

Length - 107 inches

ENGINE RATINGS

STANDARD SEA LEVEL STATIC CONDITIONS

Rating	Lb. Thrust	RPM.
Take-off - Wet	5,400	11,750
Take-off - Dry	4,600	11,750
(Military)		
Normal	3,900	11,250
94% Normal	3,160	10,575
89% Normal	2,600	10,000
Idle	414	Max 4,000

* All performance submitted on this aircraft is at dry rating.

DIMENSIONS

Wing
Span - - - - 98 ft. - 1 in.
Incidence - - - - 2.5°
Dihedral - - - - 6°
Area - - - - 1,157 sq. ft.
Length - - - - 84 ft. - 5 in.
Height over fin - 17 ft. - 2 in.
Tread - - - - 22 ft. - 6 in.
Fuselage Diameter 10 ft.

Mission and Description

The primary mission is advanced pilot training.

The airplane will also be used for training other types of personnel including navigators, radio operators, etc., and as a utility transport.

The high cruising speed and high altitude operation possible with this airplane enables crew training to be carried out in conditions similar to those of the latest jet combat aircraft.

The normal crew consists of pilot and co-pilot.

FLIGHT HISTORY

Avro Canada Model C-102 prototype fitted with Rolls-Royce Derwent V engines first flew on August 10th 1949.

Had completed 200 hours test flying up to January 1951.

WEIGHTS

LIMIT LOAD FACTOR

Condition	Weight lbs.	CAR Struct. 4b	Proven for
Empty (Operational)	36,500	4.3	4.55
Zero Fuel	40,500	3.95	4.20
Max. T.O. A	70,000	2.82	2.98
Max. Landing	60,000	3.07	3.25

The load factors quoted are for cruise at 30,000 ft.

A Weight corresponding to operational requirements in specification.

FUEL

Location	No. Tanks	Gals.
Wings Inboard	10 small	1,100
Wings Outboard	6	3,500
Total:		4,600

Additional wing tip tanks or fuselage tanks can be fitted if necessary.

J.P.1 kerosene has been used for all performance and weight data.

Oil is housed in a tank on the engine. Capacity 3 gals. per engine.

DIMENSIONS

FEATURES

High altitude performance.
Cruising up to 40,000 ft.
Has been demonstrated at speeds up to 500 mph. at 30,000 ft.
High cabin pressurization giving sea level conditions up to 21,000 ft., 4,000 ft. cabin at 30,000 ft., and 8,000 ft. cabin at 40,000 ft.
Exceptional low speed characteristics.
Climb to 30,000 ft. in less than 16 min.
Quiet Cockpit and cabin.

NOTES

The aircraft described here is designed to the latest United States CAR. 4b requirements.

Provision for dive recovery flaps is included, but these are not shown on the diagrams, since they have not yet been installed on the prototype.

PERSONNEL

While the specification for this airplane calls for one student's seat behind each of the regular pilot and co-pilot's seats, four permanent seats and one temporary seat have been provided in this case.

Loading and Performance—Typical Mission

CONDITIONS		To Military Spec. C-5011		Suggested Typical Operation at 400 knots cruise		
		30,000 ft.		35,000 ft.		
		TRAINER +	CARGO +	TRAINER	CARGO	TRAINER
		Standard Fuel Tanks Full		Standard Fuel Tanks Full		Standard Fuel Tanks Full
Take-Off Weight	(lb.)	68,500	70,000	68,500	70,000 Max.	68,500
Operational Weight Empty	(lb.)	36,500	36,500	36,500	36,500	36,500
Fuel (J.P. 1. Kerosene)	(gals.)	4,600	4,380	4,600	4,380	4,600
Fuel Weight	(lb.)	31,000	29,500	31,000	29,500	31,000
Military Load	(lb.)	1,000 (5 Students)	4,000 *	1,000	4,000 *	1,000
Wing Loading at T.O. Weight	(lb./sq.ft.)	59.2	60.5	59.2	60.5	59.2
Power Loading at T.O.	(lb./lb.thrust)	3.72	3.8	3.72	3.8	3.72
Stall Speed at T.O. Weight (Power Off-Flaps in T.O. Position)	(knots)	99.0	100.0	99.0	100.0	99.0
Take-Off Distance at S.L.						
Ground Run (No Wind)	(ft.)	2,930	3,100	2,930	3,100	2,930
To Clear 50 ft. Obstacle	(ft.)	3,520	3,700	3,520	3,700	3,520
Climb from S.L.						
Rate of Climb	(ft.p.m.)	3,150	2,750	3,150	2,750	3,150
Time to 30,000 ft. (Normal Power)	(min.)	15.1	15.7	15.1	15.7	20.0 min. to 35,000 ft.
Radius	(n.mi)	672	616	600	556	692
Average Cruise Speed	(knots)	333 +	338 +	400	400	400
Mission Time	(hr. min.)	4 hr. 5 min.	3 hr. 44 min.	3 hr. 7.7 min.	2 hr. 54.8 min.	3 hr. 38 min.
Landing Weight (After Completion of Mission)	(lb.)	40,600	43,450	40,600	43,450	40,600
Landing Ground Roll at S.L.	(ft.)	910	950	910	950	910
Total from 50 ft. to Stop	(ft.)	1,800	1,860	1,800	1,860	1,800
Stall Speed at Landing Weight (Power Off-Flaps in Landing Position)	(knots)	69.0	71.5	69.0	71.5	69.0

All Performance shown is for Standard Atmosphere conditions.

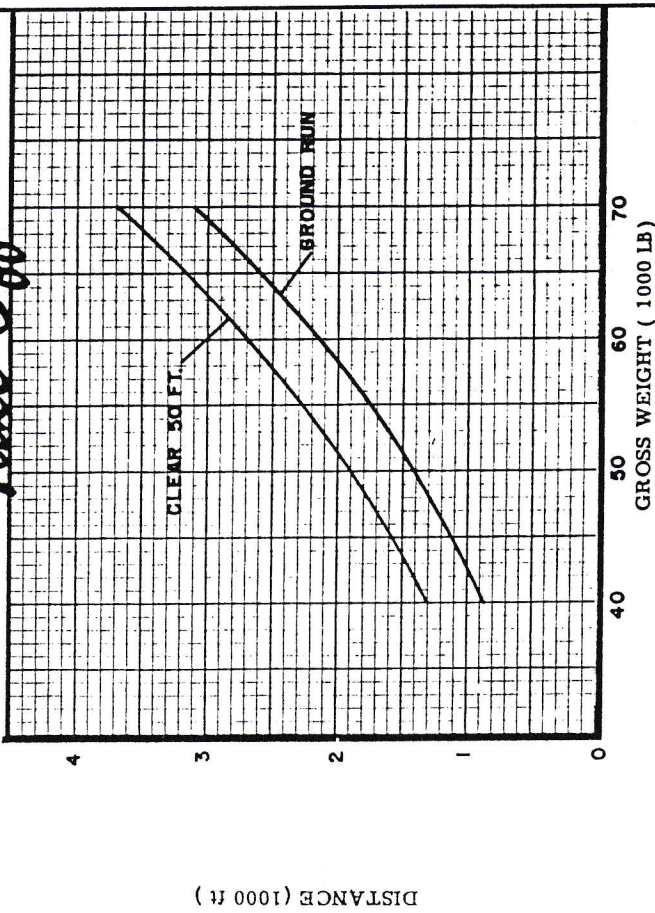
All Performance shown is for Standard Atmosphere conditions.

* The Military payload show is the maximum called for in the specification. The airplane is capable of carrying Military payload up to 15,000 lbs.

+ Corresponding to requirements of military Spec. - C-5011.

‡ The T.O. weights shown are those corresponding to the military load requirements of the specification.

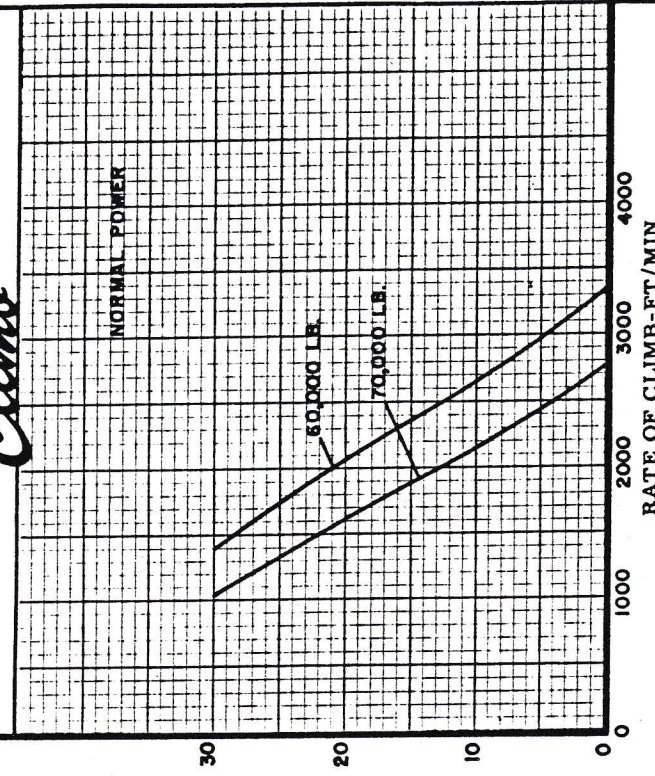
Take-Off



DISTANCE (1000 ft)

GROSS WEIGHT (1000 LB)

Climb



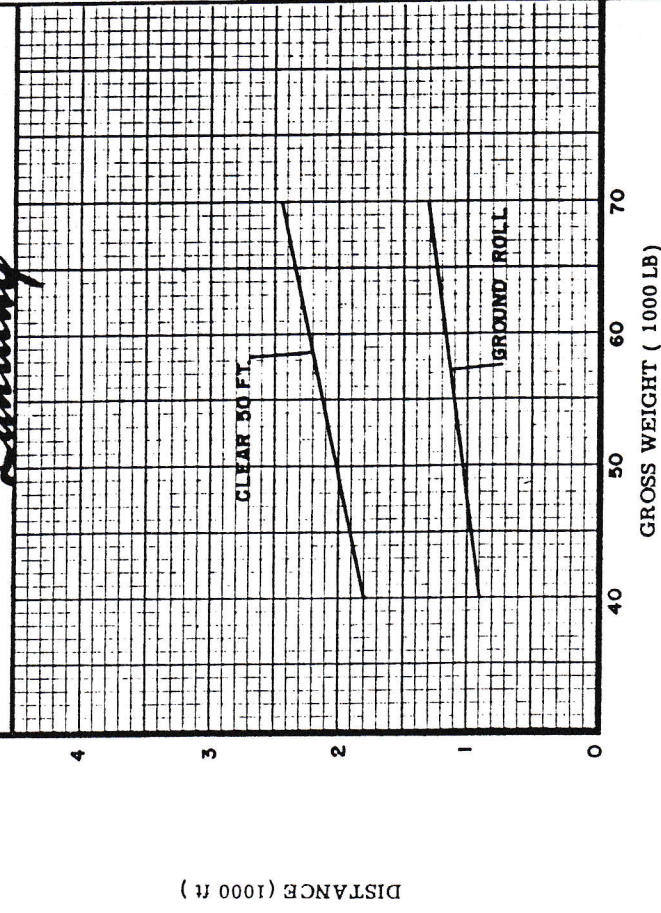
NORMAL POWER

80,000 LB

70,000 LB

RATE OF CLIMB-FT/MIN

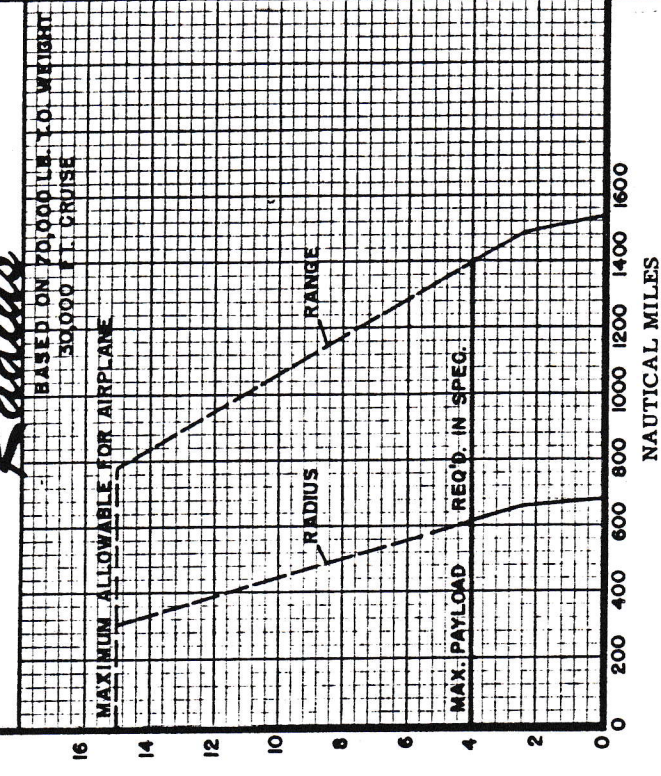
Landing



DISTANCE (1000 ft)

GROSS WEIGHT (1000 LB)

Radius



PAYLOAD (1000 LB)

NAUTICAL MILES

BASED ON 70,000 LB. TO WEIGHT
30,000 FT CRUISE

MAXIMUM ALLOWABLE FOR AIRPLANE

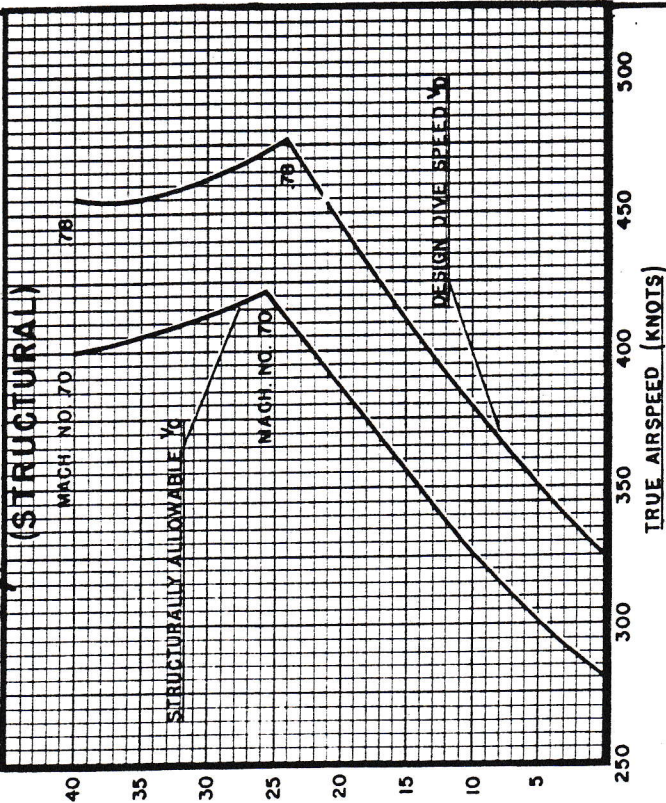
RANGE

RADIUS

REQ'D. IN SPEC.

MAX. PAYLOAD

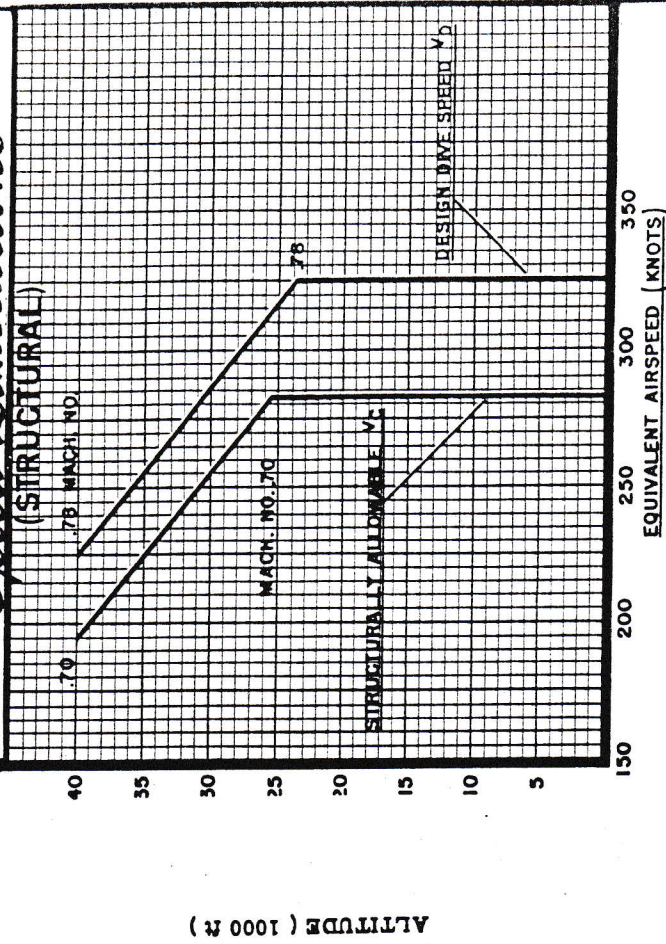
Speed Limitations



ALTITUDE (1000 ft)

TRUE AIRSPEED (KNOTS)

Speed Limitations



ALTITUDE (1000 ft)

EQUIVALENT AIRSPEED (KNOTS)