PART I CORRECTION & CONVERSION CHARTS

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1. Machmeter calibration

No PEC to the machmeter has been included as a correction is already incorporated in the Air Data System. This correction is optimized; errors existing are small and can be neglected.

2. IAS correction

Fig. 1.1.1 gives the correction to the ASI as a function of indicated altitude. The dashed lines represent the transonic jump-up. No correction is necessary at supersonic speeds.

Example

At 10,000 ft indicated altitude and 500 kts IAS an addition of 13 kts should be made.

3. Altimeter correction

(a) Fig. 1.1.2 gives the PEC on the altimeter from 0.6M to 1.0M for heights from sea level up to 50,000 ft. At sea level the PEC has been continued below 0.6M and expressed in terms of IAS.

(b) Fig. 1.1.3 gives the PEC on the altimeter for the landing configuration. Three weights are given to cover the range of operation.

(c) Figs. 1.1.2 and 1.1.3 show PEC to the altimeter over a range of speeds and heights due to the position of the static vents.

4. Conversion charts and Tables

(a) Figs. 1.2.1 and 1.2.2 give the subsonic and supersonic relationship between IAS, TMN and indicated height.

Example

450 kts IAS is equal to 0.87 TMN around 12,500 ft *(Fig.1.2.1)*. As the recommended climbing speed *(refer to Part 3)* is 450 kts/0.87M, the change-over from airspeed to Mach number occurs at 12,500 ft.

(b) Fig. 1.2.3 gives the conversion from lb/min/ $\sqrt{t}$ to lb/min over a range of temperature and Table 1.4.2 gives the values of $\sqrt{t}$ against OAT.

(c) Table 1.4.1 gives temperature conversion from °C to °F and vice versa. To use the Table find the known temperature to be converted in the centre column *(bold type)*, then read the Centigrade conversion to the left and Fahrenheit to the right.

Example	°C		°F
From the Table	-2.8	27	80.6

then 27°C = 80.6°F

27°F = -2.8°C

5. Determination of wind components

Fig. 1.3 provides a chart for determining the wind components along and at right angles to the runway *(head- or tail-wind and crosswind)* given the total wind strength and its direction relative to the runway. This is necessary because Parts 2 and 7 use head-and crosswinds as a variable.

For example: a 40-kt wind at 60° to the runway gives a 20-kt headwind and a 34-kt crosswind.

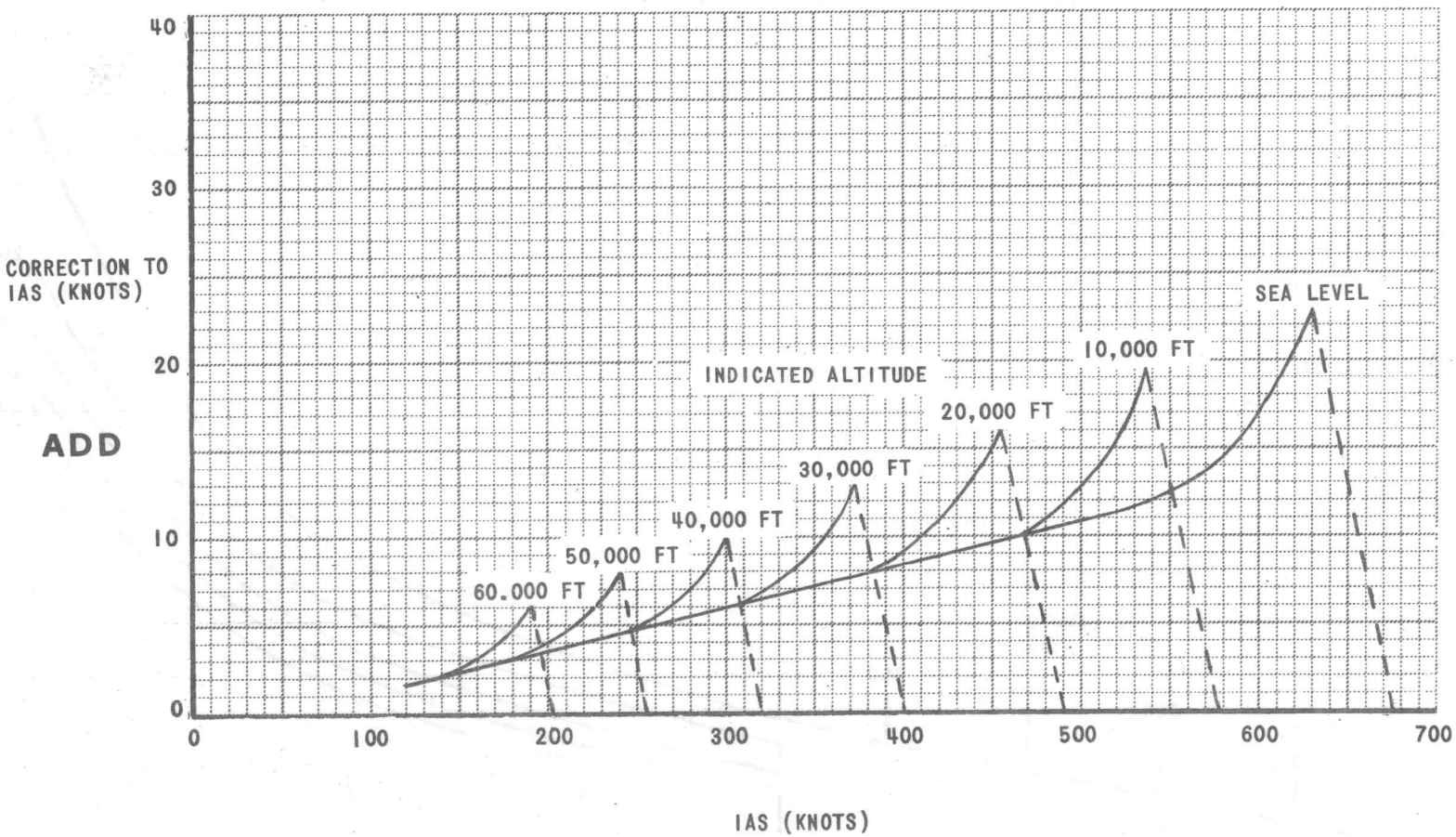

FIG. 1.1.1 P.E.C. TO I.A.S.

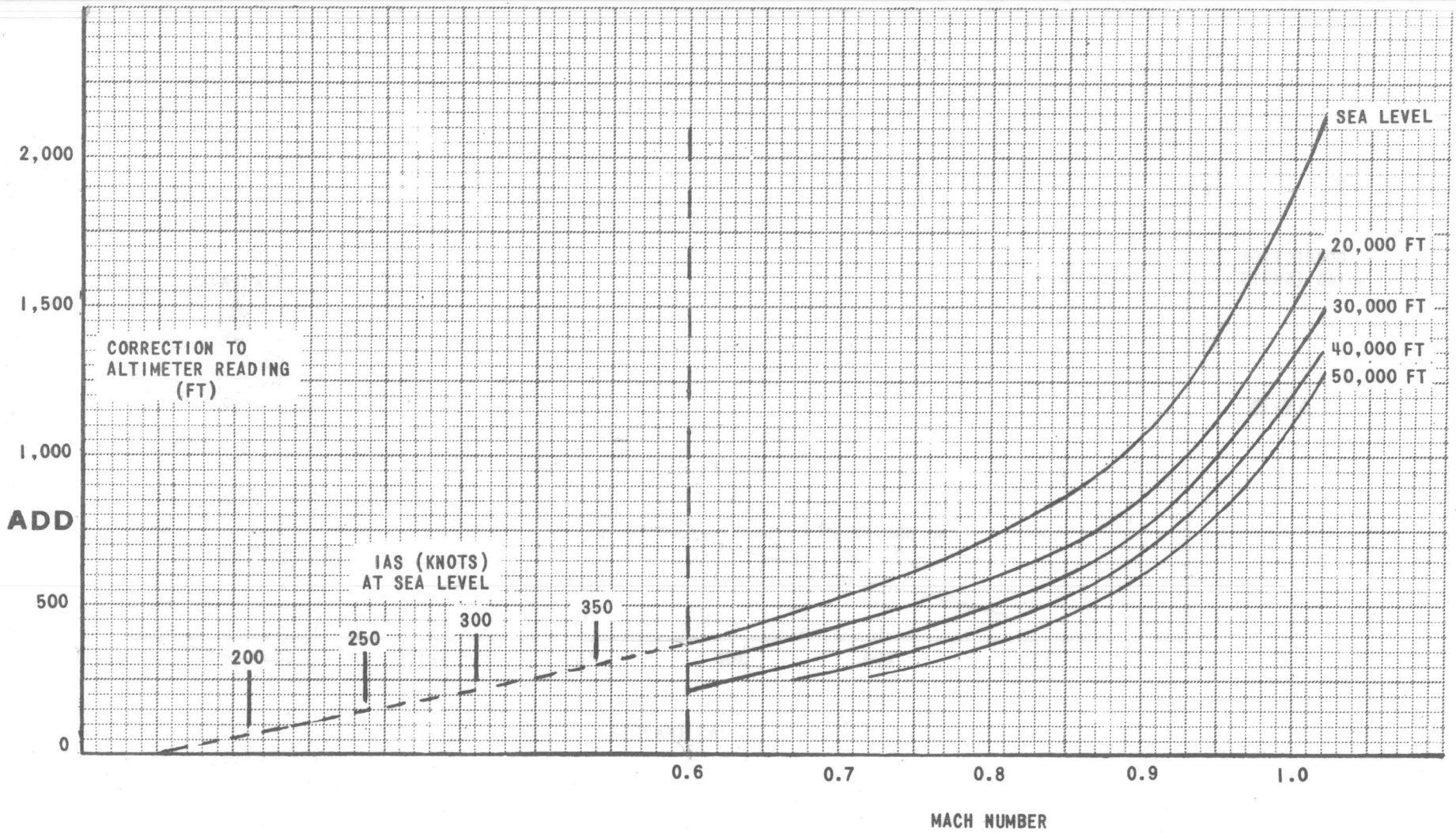

FIG. 1.1.2 P.E.C. TO ALTIMETER

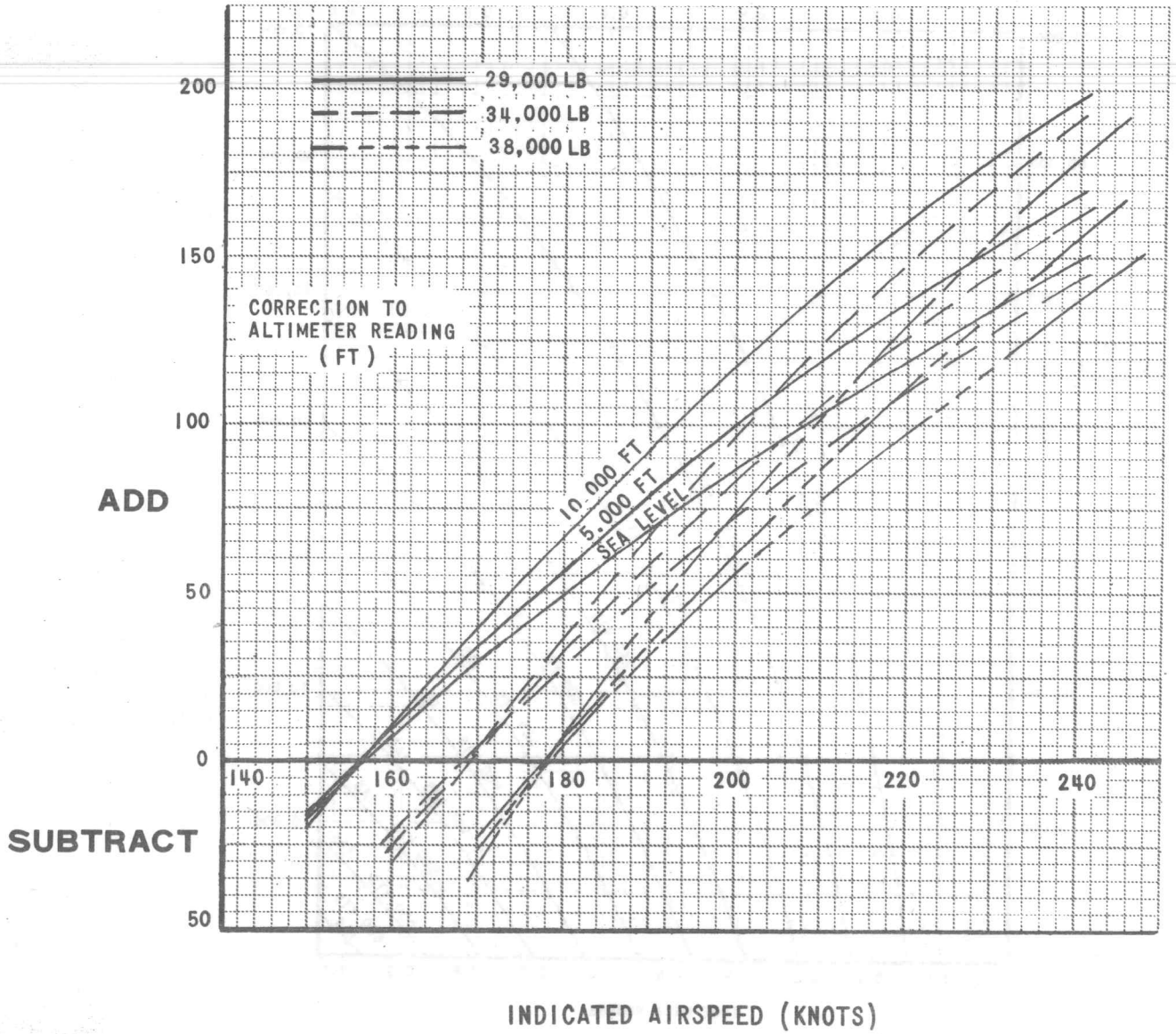

FIG. 1.1.3 P.E.C. TO ALTIMETER LANDING CONFIGURATION

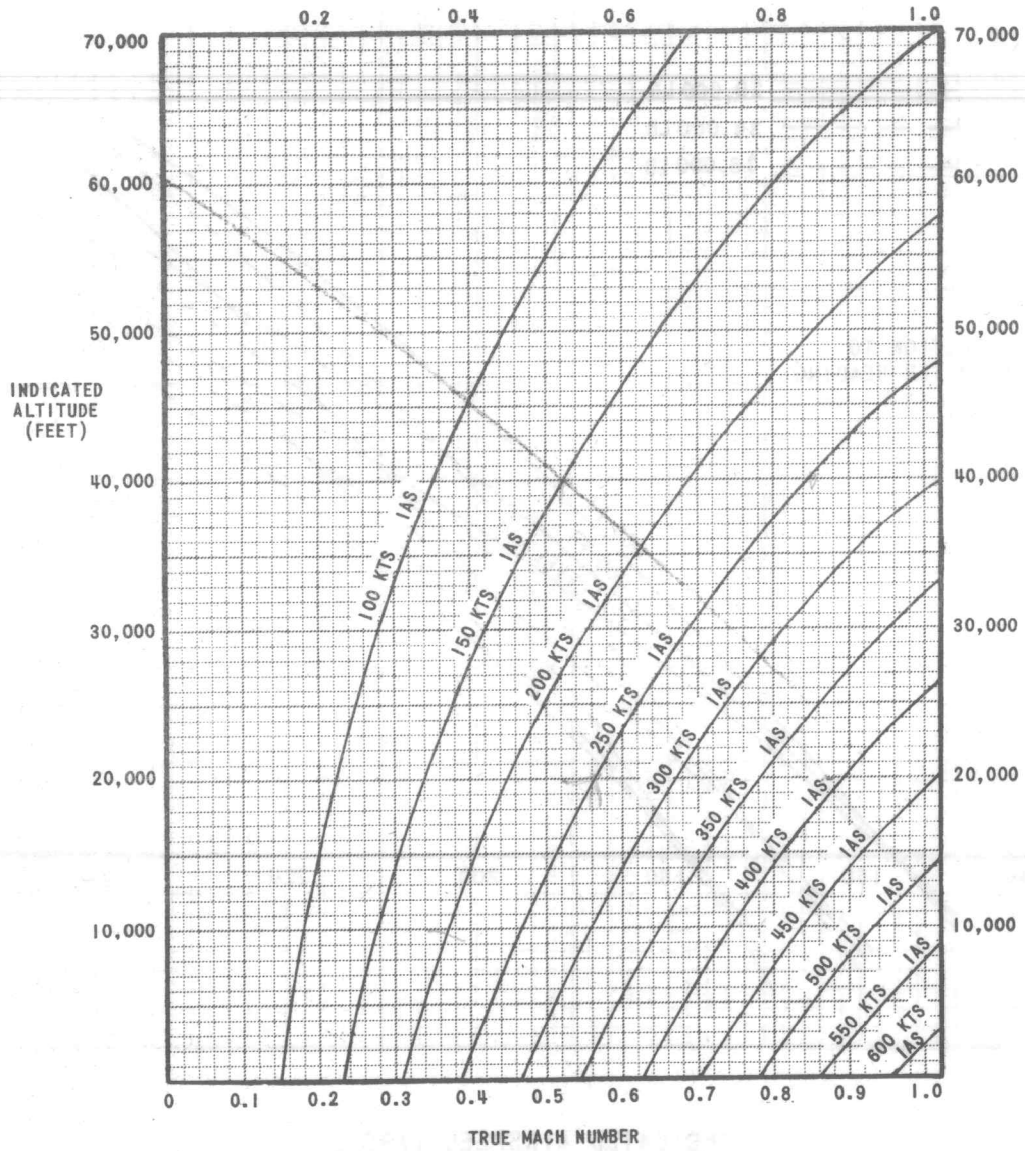

FIG. 1-2-1 CONVERSION CHART I.A.S/T.M.N. SUBSONIC

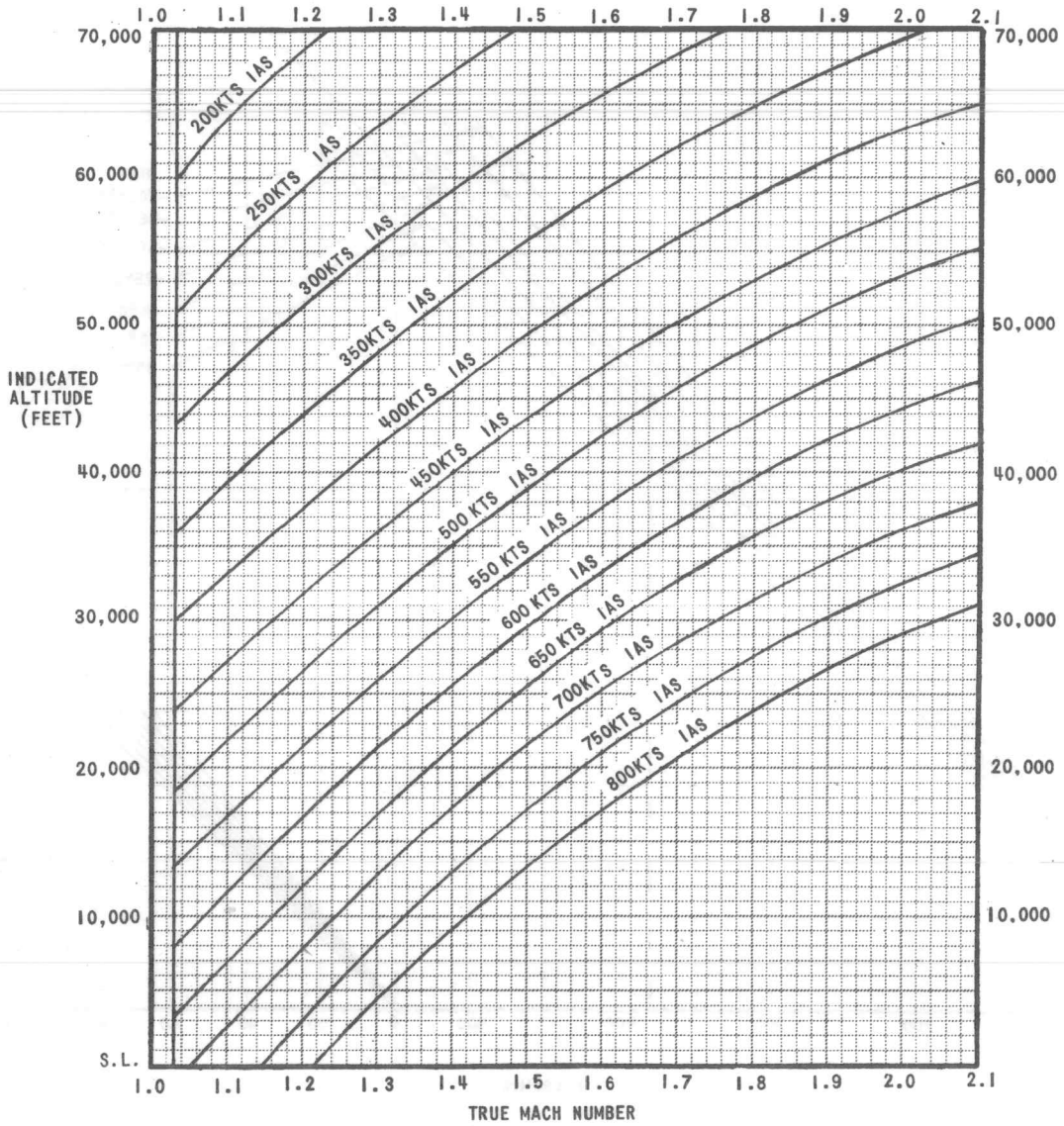

FIG. 1·2·2 CONVERSION CHART - I.A.S/T.M.N. SUPERSONIC

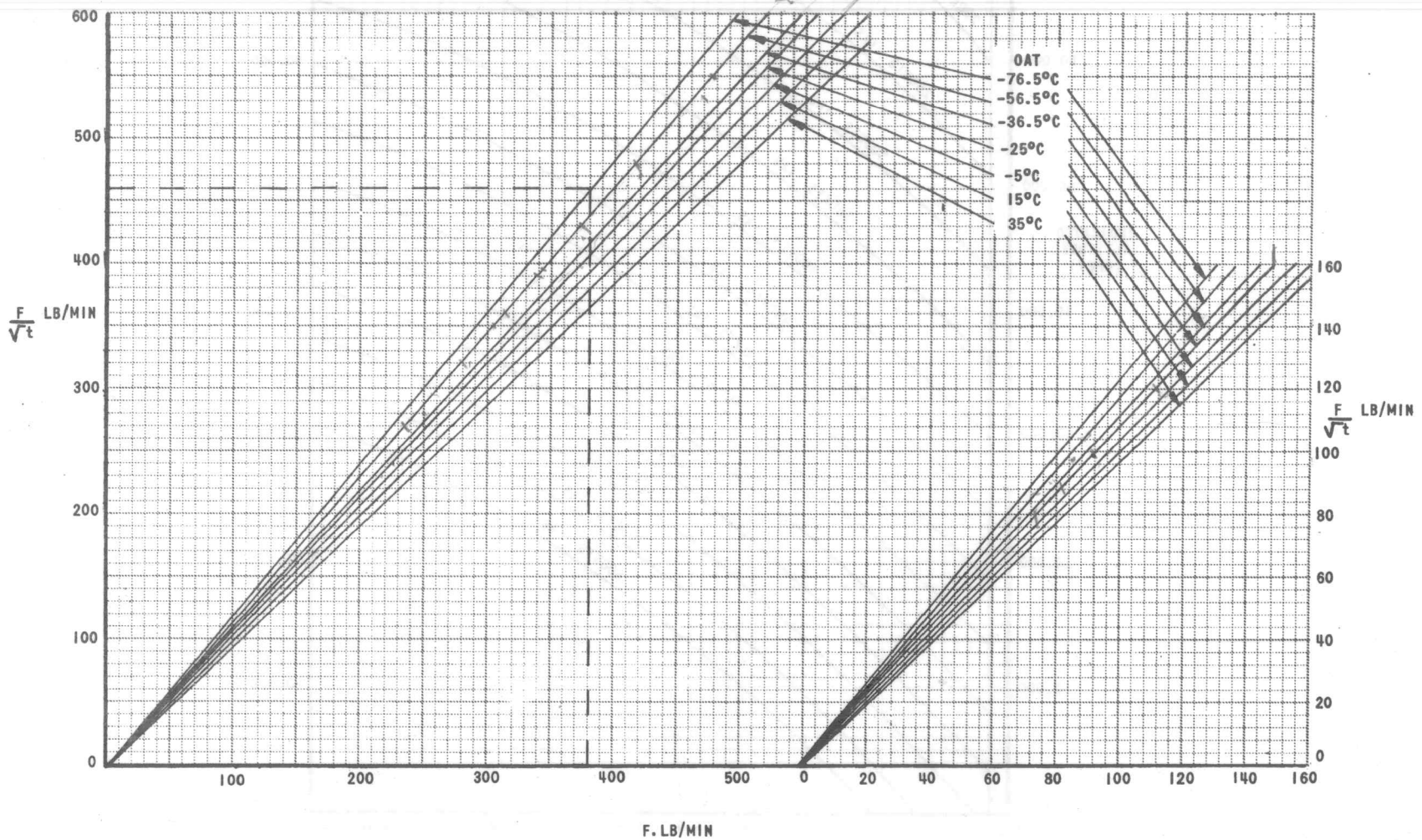

FIG.1-2-3 FUEL CONVERSION CHART

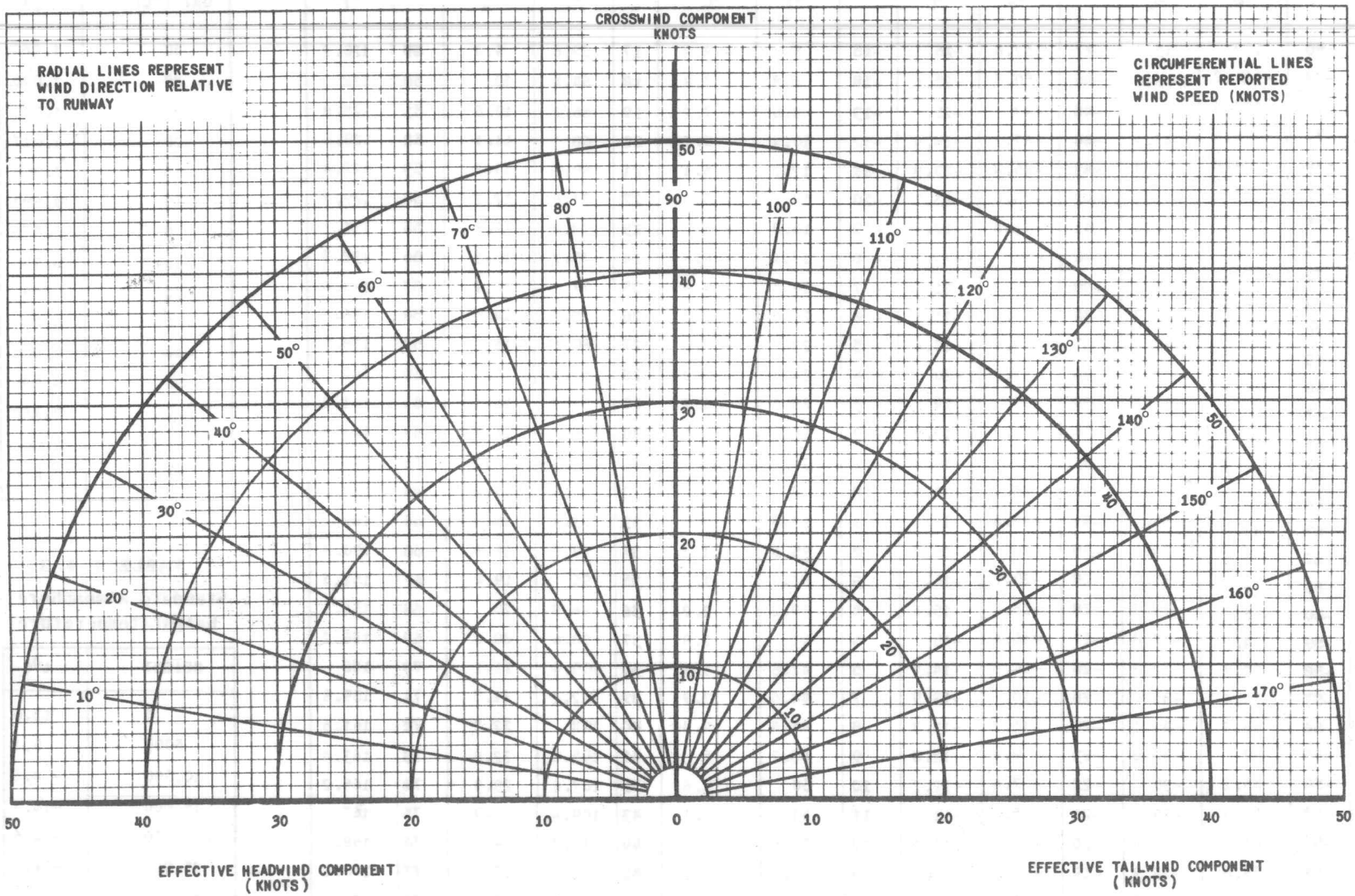

FIG. 1.3 DETERMINATION OF WIND COMPONENTS

TABLE 1.4.1

Temperature conversion table

°C		°F	°C		°F	°C		°F	°C		°F	°C		°F
-62	**-80**	-112	-43.9	**-47**	-52.6	-26.1	**-15**	5	- 8.3	**17**	62.6	9.4	**49**	120.2
-61.4	**-79**	-110.2	-43.3	**-46**	-50.8	-25.6	**-14**	6.8	- 7.8	**18**	64.4	10	**50**	122
-60.9	**-78**	-108.4	-42.8	**-45**	-49	-25	**-13**	8.6	- 7.2	**19**	66.2	10.6	**51**	123.8
-60.3	**-77**	-106.6	-42.2	**-44**	-47.2	-24.4	**-12**	10.4	- 6.7	**20**	68	11.1	**52**	125.6
-59.8	**-76**	-104.8	-41.7	**-43**	-45.4	-23.9	**-11**	12.2	- 6.1	**21**	69.8	11.7	**53**	127.4
-59.2	**-75**	-103	-41.1	**-42**	-43.6	-23.3	**-10**	14	- 5.6	**22**	71.6	12.2	**54**	129.2
-58.7	**-74**	-101.2	-40.6	**-41**	-41.8	-22.8	**- 9**	15.8	- 5	**23**	73.4	12.8	**55**	131
-58.1	**-73**	-99.4	-40	**-40**	-40	-22.2	**- 8**	17.6	- 4.4	**24**	75.2	13.3	**56**	132.8
-57.6	**-72**	-97.6	-39.4	**-39**	-38.2	-21.7	**- 7**	19.4	- 3.9	**25**	77	13.9	**57**	134.6
-57	**-71**	-95.8	-38.9	**-38**	-36.4	-21.1	**- 6**	21.2	- 3.3	**26**	78.8	14.4	**58**	136.4
-56.6	**-70**	-94	-38.3	**-37**	-34.6	-20.6	**- 5**	23	- 2.8	**27**	80.6	15	**59**	138.2
-56	**-69**	-92.2	-37.8	**-36**	-32.8	-20	**- 4**	24.8	- 2.2	**28**	82.4	15.6	**60**	140
-55.5	**-68**	-90.4	-37.2	**-35**	-31	-19.4	**- 3**	26.6	- 1.7	**29**	84.2	16.1	**61**	141.8
-55	**-67**	-88.6	-36.7	**-34**	-29.2	-18.9	**- 2**	28.4	- 1.1	**30**	86	16.7	**62**	143.6
-54.4	**-66**	-86.8	-36.1	**-33**	-27.4	-18.3	**- 1**	30.2	- 0.6	**31**	87.8	17.2	**63**	145.4
-53.8	**-65**	-85	-35.6	**-32**	-25.6	-17.8	**0**	32	0	**32**	89.6	17.8	**64**	147.2
-53.3	**-64**	-83.2	-35	**-31**	-23.8	-17.2	**1**	33.8	0.6	**33**	91.4	18.3	**65**	149
-52.7	**-63**	-81.4	-34.4	**-30**	-22	-16.7	**2**	35.6	1.1	**34**	93.2	18.9	**66**	150.8
-52.2	**-62**	-79.6	-33.9	**-29**	-20.2	-16.1	**3**	37.4	1.7	**35**	95	19.4	**67**	152.6
-51.6	**-61**	-77.8	-33.3	**-28**	-18.4	-15.6	**4**	39.2	2.2	**36**	96.8	20	**68**	154.4
-51	**-60**	-76	-32.8	**-27**	-16.6	-15	**5**	41	2.8	**37**	98.6	20.6	**69**	156.2
-50.4	**-59**	-74.2	-32.2	**-26**	-14.8	-14.4	**6**	42.8	3.3	**38**	100.4	21.1	**70**	158
-49.9	**-58**	-72.4	-31.7	**-25**	-13	-13.9	**7**	44.6	3.9	**39**	102.2	21.7	**71**	159.8
-49.3	**-57**	-70.6	-31.1	**-24**	-11.2	-13.3	**8**	46.4	4.4	**40**	104	22.2	**72**	161.6
-48.8	**-56**	-68.8	-30.6	**-23**	- 9.4	-12.8	**9**	48.2	5	**41**	105.8	22.8	**73**	163.4
-48.2	**-55**	-67	-30	**-22**	- 7.6	-12.2	**10**	50	5.6	**42**	107.6	23.3	**74**	165.2
-47.7	**-54**	-65.2	-29.4	**-21**	- 5.8	-11.7	**11**	51.8	6.1	**43**	109.4	23.9	**75**	167
-47.1	**-53**	-63.4	-28.9	**-20**	- 4	-11.1	**12**	53.6	6.7	**44**	111.2	24.4	**76**	168.8
-46.6	**-52**	-61.6	-28.3	**-19**	- 2.2	-10.6	**13**	55.4	7.2	**45**	113	25	**77**	170.6
-46	**-51**	-59.8	-27.8	**-18**	- 0.4	-10	**14**	57.2	7.8	**46**	114.8	25.6	**78**	172.4
-45.6	**-50**	-58	-27.2	**-17**	1.4	-9.4	**15**	59	8.3	**47**	116.6	26.1	**79**	174.2
-45	**-49**	-56.2	-26.7	**-16**	3.2	-8.9	**16**	60.8	8.9	**48**	118.4	26.7	**80**	176
-44.4	**-48**	-54.4												

TABLE 1.4.2

Conversion of OAT to $\sqrt{t}$

OAT (°C)	$\sqrt{t}$
50	1.060
40	1.040
30	1.025
20	1.017
15	1.000
10	0.990
0	0.970
-10	0.956
-20	0.937
-30	0.920
-40	0.900
-50	0.880
-60	0.860
-70	0.840
-80	0.820

TABLE 1.4.3

Standard atmosphere - height/temperature

HEIGHT	t°C
0	15.0
5000	5.1
10,000	- 4.8
15,000	-14.7
20,000	-24.6
25,000	-34.5
30,000	-44.4
35,000	-54.3
36,090	-56.5