Australian Government

Civil Aviation Safety Authority

ATPL APLA WORKBOOK
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WEIGHT AND BALANCE

IMPORTANT NOTE

The data here is for training purposes only for CASA's ATPL Performance & Loading (APLA) exam.

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SECTION 6 - WEIGHT & BALANCE

1. STRUCTURAL LIMITING WEIGHTS

MAXIMUM TAXI WEIGHT (RAMP)	89,700 KG
MAXIMUM TAKE-OFF WEIGHT (MBRW)	89,350 KG (*1)
MAXIMUM IN-FLIGHT WEIGHT:	
FLAPS 25	88,450 KG
FLAPS 30	73,000 KG
FLAPS 40	65,100 KG
MAXIMUM LANDING WEIGHT:	
FLAPS 30	72,600 KG
FLAPS 40	64,650 KG
MAXIMUM ZERO FUEL WEIGHT	63,500 KG

*1 Apply a linear reduction of 50 KG for each 1,000 ft airport pressure altitude above 2,000'.

The above design maximum weights may be reduced for a particular flight because of considerations such as pavement strength requirements and take-off performance characteristics.

2. MAXIMUM ALLOWABLE NUMBER OF PASSENGERS

The basic Passenger Capacity of the Boeing 727 - comprising adults, adolescents (13 but not turned 16), children (2 but not turned 13) and infants (0 but not yet turned 2 years of age) IN ANY COMBINATION but excluding Cabin crew, Technical crew and anyone occupying any extra seats is 138. Cabin crew (standard) is 6.

The standard zone/row relationship for the passenger cabin is as follows:

Total seats	Zone A	Zone B	Zone C	Zone D	Zone E
144	Rows 1-6	Rows 7-12	Rows 13-17	Rows 18-22	Rows 23-27

3. COMPARTMENT CAPACITIES AND LOADING LIMITATIONS

A. Forward Cargo Hold

Limitation	Compartment 1	Compartment 2	Total
Volume (cu. m)	7.8	6.9	14.7
Max Floor Loading (KG/m^2)	---------- 732 ----------		
Max Running Load (KG/m run)	---------- 839 ----------		
Max Compartment Load (KG)	2273	1809	4082

B. Aft Cargo Hold

Limitation	Compartment 4	Compartment 5	Total
Volume (cu. m)	8.0	7.3	15.3
Max Floor Loading (KG/m^2)	---------- 732 ----------		--
Max Running Load (KG/m run)	714	535	--
Max Compartment Load (KG)	1827	1801	3628

4. DEFINITIONS

A. Empty Weight
The empty weight of the aircraft includes equipment which has a fixed location and is actually on the aircraft when it is weighed.

B. Operational Items
These are added to the Empty Weight to obtain the Basic Weight. They are an assessment of normal items expected on each revenue flight, e.g. cockpit documentation, cabin equipment, etc. This INCLUDES Crew and Galley provisions.

C. Basic Weight
Basic Weight is the Empty Weight plus Operational Items for a DOMESTICALLY configured aircraft. This does NOT include fuel or payload.

D. Maximum Zero Fuel Weight
The Maximum Zero Fuel Weight is the maximum weight the loaded aircraft is permitted to weigh before useable fuel is added. Any weight in excess of the Maximum Zero Fuel Weight MUST consist of useable fuel only.

E. Index Unit

(1) An Index Unit is a simplified way of writing a moment. It is defined as:

$$IU = \frac{\text{WEIGHT OF ITEM x DISTANCE OF ITEM FROM CG DATUM}}{\text{CONSTANT}}$$

(2) Index Unit adjustments can be positive (+) or negative (-). This depends on whether the item is in front of or behind the CG datum (which is just forward of the main landing gear) and whether it is added to or removed from the aircraft. If the adjustment tends to move the CG forward (give the aircraft a nose-down effect) then the adjustment is negative; the adjustment is positive if the result is a nose-up effect.

F. Fuel Load
The total amount of fuel loaded on the aircraft.

G. Taxi Fuel or Taxi Allowance
The amount of fuel consumed from engine start to lining up for take-off. A standard allowance of 150 KG is used.

H. Take-off Fuel
The amount of fuel on board less the fuel consumed before the take-off run, i.e. Fuel Load less Taxi Fuel.

I. Trip Fuel
The amount of fuel planned to be consumed from take-off to the station of first intended landing plus 400 KG allowance for approach and manoeuvring.

5. CONFIGURATION LIST

The following table defines the configuration requirements for DOMESTIC and OVER WATER flights.

ITEM	CONFIGURATION	
	DOMESTIC	OVER WATER
PASSENGER LIFE VESTS	IN	IN
LIFE RAFTS	OUT	4
EMERGENCY BEACONS	OUT	2
ADDITIONAL AVIONICS	OUT	IN

6. VARIATIONS TO OPERATIONAL ITEMS

A. Life Vests
Weight of Life Vests is included in the aircraft Basic Weight. If the vests are NOT carried, the adjustment is:
SUBTRACT 104 KG FROM THE BASIC WEIGHT
ADD 3.2 IU TO THE BASIC INDEX

B. Life Rafts and Emergency Beacons
When life rafts and emergency beacons are carried for over water operations, (2 x 42 person life rafts, one emergency beacon in the forward cabin ceiling, and 2 x 42 person life rafts and one emergency beacon in the mid-cabin overhead lockers) the following adjustment applies:
ADD 260 KG TO THE BASIC WEIGHT
SUBTRACT 23.0 IU FROM THE BASIC INDEX

C. APU Removed
For operations with the APU removed the following adjustment applies:
SUBTRACT 214 KG FROM THE BASIC WEIGHT
SUBTRACT 2.0 IU FROM THE BASIC INDEX

D. Additional Avionics
To account for the effect of the additional avionics required for overseas operations, apply the following adjustment:
ADD 64 KG TO THE BASIC WEIGHT
SUBTRACT 6.8 IU FROM THE BASIC INDEX

E. Other Approved Items
When other approved items are to be carried in the cabin observe the following:

(1) Obtain the weight of the item (even if it has to be weighed).
(2) Unless special authorisation is issued, a load of 87 KG per seat position must not be exceeded. This means if the item is bolted under a seat that seat cannot carry a passenger.

NOTE: Account for the item's weight in the appropriate cabin zone and include this weight when calculating the number of "equivalent adults".

7. FUEL MANAGEMENT

A. Useable Fuel Data

The table below shows nominal useable fuel capacities for under wing refueling procedure (over wing fuel capacities for tanks 1 & 3 will be slightly less than shown). The fuel weights are based on a specific gravity of 0.79. Actual capacities will vary with fuel density.

LOCATION	WEIGHT		VOLUME (Litres)
	Pounds	Kilograms	
WING TANKS (1 & 3)	23,810	10,800	13,671
CENTRE TANK (2)	30,203	13,700	17,342
AFT AUXILIARY TANK	5,732	2,600	3,291
FWD AUXILIARY TANK	5,401	2,450	3,101
TOTAL	65,146	**29,550**	37,405

B. Fuel Loading

(1) The fuel load in tanks 1 and 3 must not differ by more than 450 KG.

(2) Load main tanks 1, 2 and 3 equally.

(3) When tanks 1 and 3 are full, continue to load tank 2.

(4) When tank 2 is full, load the aft auxiliary tank (AFT AUX tank).

(5) When the AFT AUX tank is full, load the forward auxiliary tank (FWD AUX tank).

(6) Tanks 1 and 3 must be full, and tank 2 must contain at least 4,550 KG more fuel than either 1 or 3 before loading the AFT AUX tank.

CAUTION

- All other tanks must be full before the FWD AUX tank is loaded EXCEPT when the FWD AUX tank fuel is used as ballast.

(7) The following instructions describe the method of determining the CG when there is fuel in the aft auxiliary tank and tank 2 is not full.

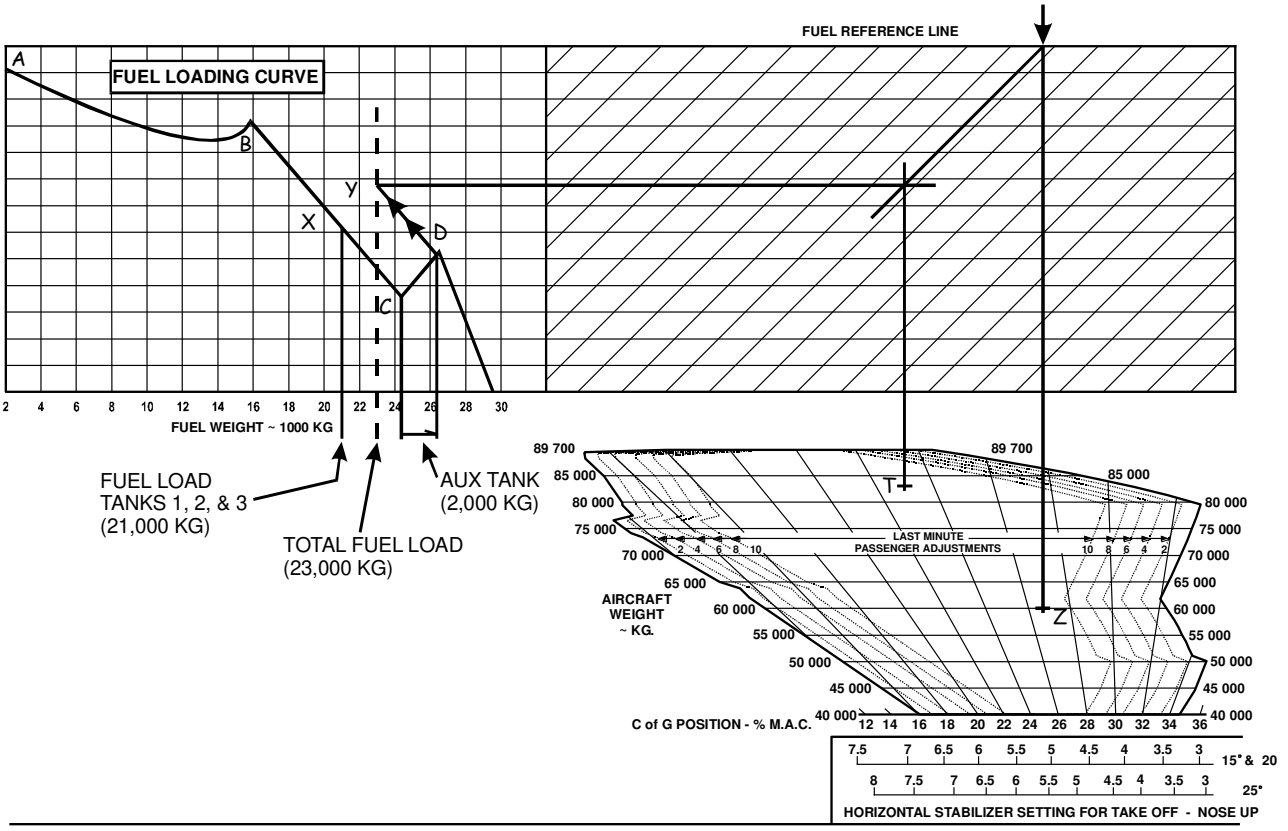
The following example shows the method used to plot CG lines for a total fuel load of 23,000 KG with 21,000 KG in tanks 1, 2 and 3 and 2,000 KG in the aft auxiliary tank.

(a) Plot the total fuel weight of tanks 1, 2 and 3 in the normal manner on the Fuel Loading Curve. This will produce point "X" on the line "BC".

(b) The fuel weight of 2,000 KG in the aft auxiliary tank is now marked off from point "C" to intersect section "CD" of the Fuel Loading Curve to give its CG shift effect.

(c) Draw a vertical line representing the total fuel load (23,000 KG).

(d) From the point of intersection on "CD", [sub-para (b)] draw a line parallel to "BC" to intersect the total fuel load line at "Y". "Y" is then projected horizontally to the fuel reference line in the normal manner (sub-para (16) on page 13).



NORMAL FUEL LOADING (lbs)

TOTAL FUEL LOAD	TANK No. 1	TANK No. 2	TANK No.3	AFT AUX TANK	FWD AUX TANK
65,100	11,900	30,200	11,900	5,700	5,400
64,000	11,900	30,200	11,900	5,700	4,300
62,000	11,900	30,200	11,900	5,700	2,300
60,000	11,900	30,200	11,900	5,700	300
58,000	11,900	30,200	11,900	4,000	--
56,000	11,900	30,200	11,900	2,000	--
54,000	11,900	30,200	11,900	--	--
52,000	11,900	28,200	11,900	--	--
50,000	11,900	26,200	11,900	--	--
48,000	11,900	24,200	11,900	--	--
46,000	11,900	22,200	11,900	--	--
44,000	11,900	20,200	11,900	--	--
42,000	11,900	18,200	11,900	--	--
40,000	11,900	16,200	11,900	--	--
38,000	11,900	14,200	11,900	--	--
36,000	11,900	12,200	11,900	--	--
34,000	11,333	11,334	11,333	--	--
32,000	10,667	10,666	10,667	--	--
30,000	10,000	10,000	10,000	--	--
28,000	9333	9334	9333	--	--
26,000	8667	8666	8667	--	--
24,000	8000	8000	8000	--	--
22,000	7333	7334	7333	--	--
20,000	6667	6666	6667	--	--
18,000	6000	6000	6000	--	--
16,000	5333	5334	5333	--	--
14,000	4667	4666	4667	--	--
12,000	4000	4000	4000	--	--
10,000	3333	3334	3333	--	--
8000	2667	2666	2667	--	--
6000	2000	2000	2000	--	--

The above figures may vary slightly with fuel density and individual tank capacity.

NOMINAL DISTRIBUTION OF LOADED FUEL

C. Fuel Usage

(1) Essentially equal fuel in tanks 1, 2 and 3: Use tank to engine feed.

(2) Quantity in tank 2 greater than tank 1 or 3:

(a) Use tank 2 fuel feed.
(b) When essentially equal quantities in tanks 1, 2 and 3, use tank to engine feed.

(3) Fuel in AFT AUX tank:

(a) Use tank 2 for all operations until not less than 3,650 KG has been used and the main tanks are essentially equal.
(b) Use fuel from the AFT AUX tank until empty.
(c) When the AFT AUX tank is empty, use tank to engine feed.

(4) Fuel in FWD AUX tank:

(a) Use tank 2 for all operations until not less than 3,650 KG has been used and the main tanks are essentially equal.
(b) Use fuel from the FWD AUX tank until empty.
(c) Use fuel from the AFT AUX tank until empty.
(d) When the AFT AUX tank is empty, use tank to engine feed.

D. Operation with Inoperative Aft Fuel Boost Pump in Tank 2

(1) If required to operate with the aft fuel boost pump inoperative in tank 2, a minimum of 12,000 lbs (5,443 KG) of fuel must be in the tank at all times.

(2) The 12,000 lbs (5,443 KG) of fuel in tank 2 is unusable and must therefore be considered as ballast. When compiling the load and trim sheet, the following procedure must be used:

(a) The maximum zero fuel weight will be reduced by 5,443 KG to 58,057 KG.
(b) The "fuel load" figure on the right hand side of the trim sheet will show the total fuel on board [i.e. fuel load for the flight plus 5,443 KG].
(c) Obtain Taxi Weight CG position as normal. To obtain Zero Fuel Weight CG position, complete the loading scales at the top of the trim sheet as required, but move the resultant CG position to the left by 139 IU (on the Basic Index Scale at the top of the trim sheet) to account for the 5,443 KG of ballast fuel.

(3) Fuel Loading / Fuel Usage
Load fuel as per normal procedures. Fuel usage is as normal with the exception that 12,000 lbs (5,443 KG) of fuel in tank 2 must be considered unusable at all times.

8. LOADING GUIDE

Ballast Requirements

When loading the aircraft ballast may be required if the CG is found to be outside the CG envelope.

(1) The following table lists the amount of ballast required for a desired IU change using only one of three presented options. That is ballast may be:

(a) Fuel in the forward auxiliary tank only, or

(b) Fuel in tank no. 2 only, or

(c) Deadweight in the forward cargo hold, compartment 1 only.

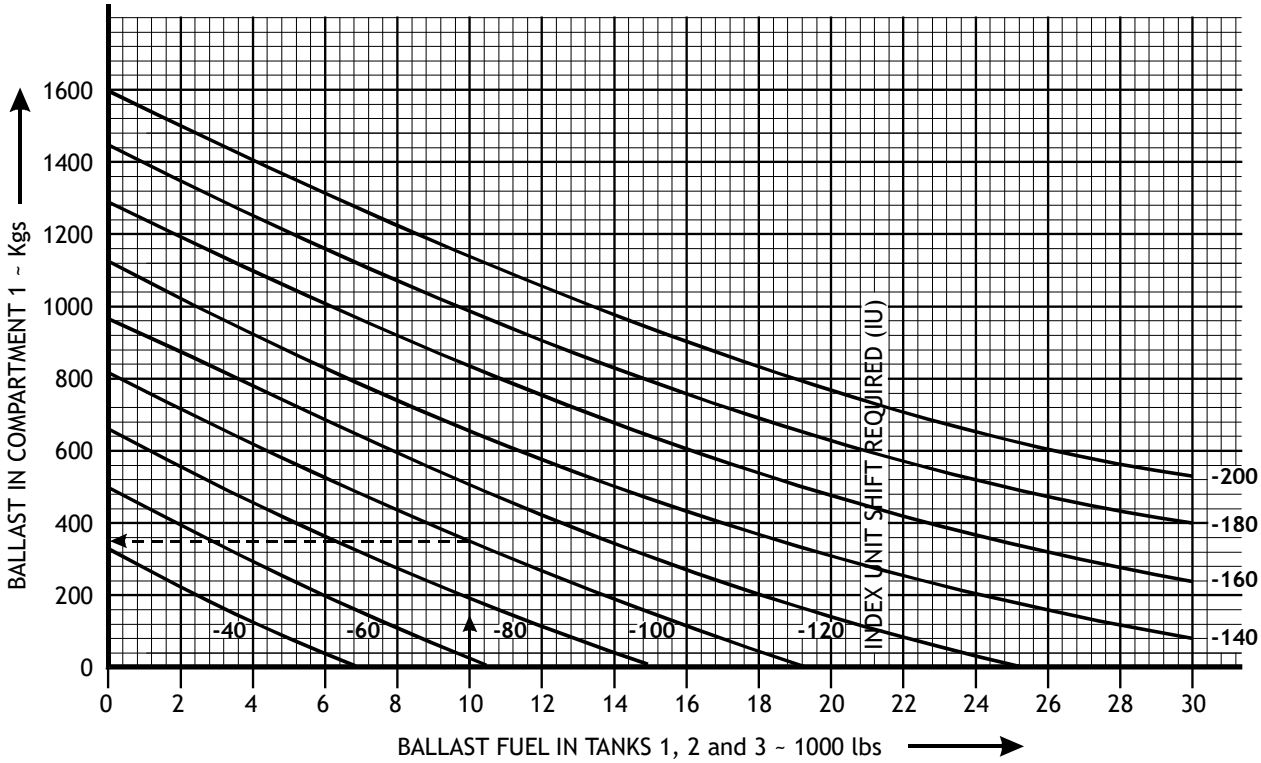
	FUEL IN ADDITION TO FLIGHT PLANNING REQUIREMENTS		
IU CHANGE REQU'D	FUEL REQU'D IN FWD AUX TANK ONLY (lbs) OR	FUEL REQ'D IN TANK 2 ONLY (lbs) OR	BALLAST REQU'D COMPT 1 ONLY (kgs)
-20	640	1770	160
-40	1280	3530	320
-60	1920	5160	480
-80	2560	6880	640
-100	3200	8600	800
-120	3840	10320	960
-140	4460	12040	1120
-160	5100	13760	1280
-180	(Exceeds tank capacity)	15480	1440
-200	(Exceeds tank capacity)	17200	1600

(2) The following graph is used when fuel in tanks 1, 2 and 3 **and** deadweight ballast in compartment 1 are used in combination to achieve a desired IU shift.

Example: Required IU shift = - 100 IU to bring aircraft inside aft CG limit.

Flight plan fuel load = 15,000 lbs.

From graph: If 10,000 lbs fuel ballast is carried above the 15,000 lbs fuel load then only 350 KG ballast is required in compartment 1.



(3) The following requirements apply to paragraphs (1) and (2) above.

When fuel is loaded as ballast, it must be considered to be unusable at all times.

When compiling a load and trim sheet, the following procedures must be used:

(a) Before entering the trim scales of the load and trim sheet, increase the Basic Weight by the weight of the fuel loaded as ballast (unusable fuel) and adjust the Basic Index by the corresponding negative IU effect from paragraph (1) or (2).

(b) When entering the Fuel Loading grid, reduce the total fuel on board by the weight of unusable fuel.

(c) Show usable fuel only in the “Fuel Load” figure on the right hand side of the Load and Trim Sheet.

(d) If the fuel is loaded as ballast in the forward auxiliary tank, then the Maximum Zero Fuel Weight is limited to 52,150 KG plus ballast fuel.

9. STANDARD PASSENGER AND BAGGAGE WEIGHTS

Your company, **Blue Sky Airlines**, is operating under Part 121 and is, in accordance with regulation 121.440, using the following weights for adults, adolescents, children and infants.

Note: This approval applies only to **Blue Sky Airlines** for the ATPL APLA examination and does not imply or infer that these weights may be used for any other purpose.

ADULT	Male	86 KG
	Female	71 KG
	Standard	81 KG
ADOLESCENT		62 KG
CHILD		45 KG
INFANT		20 KG

Notes:

1. All the above weights are inclusive of cabin baggage allowance.

2. Use of the standard adult weight (81 KG) is permitted. Using individual male and female weights will generally result in a lower total passenger weight. The mixing of Standard and Male/Female Adult weights on the same Load and Trim Sheet is prohibited.

3. Load and Trim Sheet use:

   (a) The passenger scales are graduated on the basis of an adult passengers and are valid for both Male and Female adults.

   (b) When adolescents (either male or female) and children are carried, for **scale movement purposes**, one adolescent/child is equivalent to half an adult. The correct weight must be accounted for in the weight column.

   (c) For **scale movement purposes** infants are ignored. However, the correct weight must be accounted for in the weight column.

4. It is not permissible to mix actual and standard weights on a flight, when obtaining either the total passenger or total baggage weight.

5. When it is felt that the passengers or their baggage, on any particular flight, do not fall into the “standard” category, then ALL the passengers and/or baggage for that flight should be weighed.

10. LOADING SYSTEM

Use of the Load and Trim Sheet

(1) The Basic Weight and Basic Index, for examination purposes, will be given in all circumstances, except where an adjusted Basic Weight and Basic Index are provided. Insert the appropriate values in the space provided at the lower left corner of the form.

(2) If required, add any Variations to Operational Items to derive the adjusted Basic Weight and Basic Index. Transfer these figures to the space provided at the top of the form.

(3) Enter the actual number of each type of passenger in the space provided on the left of the weight column on the top right hand side of the form. Calculate the number of equivalent adults to be used in the loading scales.
For example:
12 adults / 4 adolescents / 5 children / 2 infants = 12 + 2 + 2.5 + 0 = 16.5 equivalent adults.

(4) Calculate the total weight of the passengers in each Zone and enter this figure, rounded to the nearest whole KG, in the appropriate weight column next to the zone.

(5) Enter each compartment weight in the weights column.

(6) If there is extra crew, enter 81 KG for each extra crew member, in the weight column.

(7) Add the weights to obtain the Zero Fuel Weight: check this does not exceed the Maximum Zero Fuel Weight.

(8) Enter Fuel Load and add to the Zero Fuel Weight to obtain Taxi Weight. Ensure that it does not exceed Maximum Taxi Weight (either structural or pavement limited).

(9) Enter Taxi Fuel and subtract from Taxi Weight to obtain Take-Off weight. Ensure that it does not exceed Maximum Take-Off Weight (either structural, performance or pavement limited).

(10) Enter Trip Fuel and subtract from Take-Off Weight to obtain Landing Weight. Ensure that it does not exceed Maximum Landing Weight (either structural, performance or pavement limited).

(11) Enter the top scale with the Adjusted Basic Index and move vertically down to the first passenger scale.

(12) Move, in the direction of the arrow, the number of “equivalent adults” calculated in (3). Then move vertically down to the next scale.

(13) Continue to complete all the other scales **paying special attention to the scale units and direction**.

(14) Draw a vertical line from this last scale down into the Weight vs CG envelope. The point where this line intercepts a horizontal line drawn at the Zero Fuel Weight represents the aircraft’s Zero Fuel CG position.

(15) From the point where the line just drawn intercepts the Fuel Reference Line, draw an oblique line parallel to the guide lines on the grid.

(16) Now enter the Fuel Loading Curve with the Fuel Load for the flight and draw a vertical line up until it intercepts the loading curve. (Note the exception to this procedure on page 6). From this intersection draw a horizontal line to intersect the oblique line on the fuel grid (15). From this intersection draw a vertical line down into the Weight vs CG envelope. The point where this line intercepts a horizontal line drawn at the take-off weight represents the aircraft's CG position at take-off.

(17) Follow the radiating % MAC down to the % MAC grid line and draw a vertical line down to the Horizontal Stabilizer Setting line and obtain the Stabilizer Setting for Take-Off for the relevant flap setting.

(18) Record the % MAC / Flap Setting / Stab. Setting figures in the box at the lower right hand corner.

Use of Last Minute Passenger Adjustments

(1) In the CG envelope, fine dotted lines are drawn indicating the number of "Last Minute Passenger Adjustments" that may be made without needing to re-do the entire load sheet. The B727 permits a maximum number of Last Minute Passenger Adjustments of 10, be it an increase or decrease, using this procedure.

(2) To determine the MAXIMUM number of last minute passenger adjustments, plot both the positions of the Taxi state, 'T' and the Zero Fuel State, 'Z' of the aircraft in the CG envelope. If both 'T' and 'Z' are in the central area, then up to 10 Last Minute Passenger changes may accepted. If either 'T' or 'Z' is outside this central area, then the number of Last Minute Passenger Adjustments is restricted to that number permitted by the dotted line that encloses both 'T' and 'Z'. In the sample Load & Trim sheet on page 14, the MAXIMUM number of Last Minute Passenger Adjustments would be 8 passengers, being limited by the position of 'Z'.

(3) If the Last Minute Passenger Adjustment, results in an increase in weight, ensure that no weight limitations have been exceeded.

(4) If the actual number of Last Minute Passenger Adjustments is greater than that permitted by the load sheet, then the Load & Trim sheet is not valid and must be re-drawn.

(5) If the number of Last Minute Passenger Adjustments is equal to or less than that permitted, then the aircraft may depart and there is no requirement to re-draw the Load & Trim sheet.

B727 - 200 LONG RANGE LOAD & TRIM SHEET

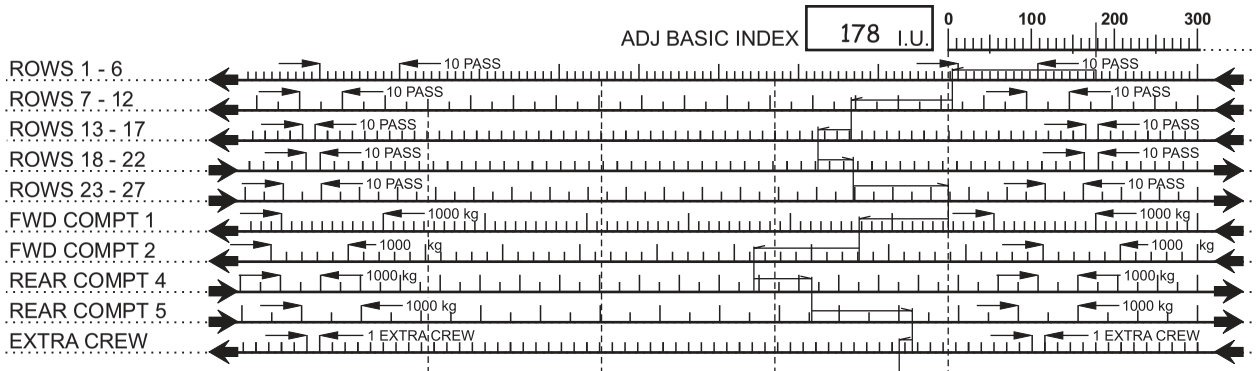
FOR EXAM PURPOSES ONLY! Effective 2/12/2021

NOTES

THE CENTRE OF GRAVITY MUST BE CHECKED AT BOTH
(A) ZERO FUEL WEIGHT
(B) TAXI WEIGHT

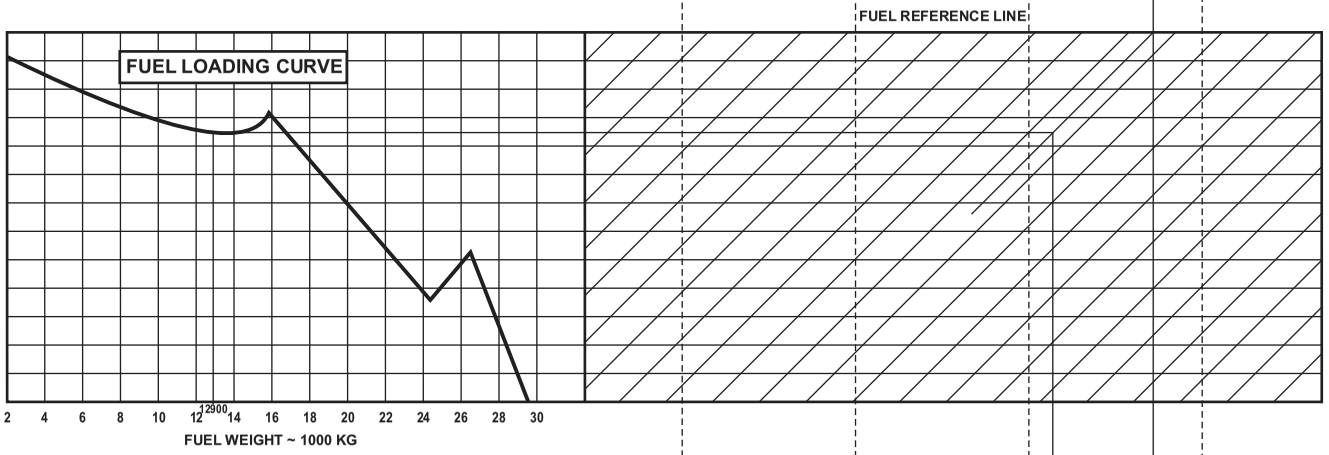
LOAD ADJUSTMENTS

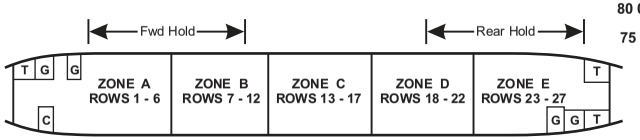
THE LAST MINUTE ADJUSTMENT LINES ALLOW FOR UP TO 10 PASSENGERS WITHOUT CHANGING THE STABILIZER TRIM SETTING. THE MAXIMUM PERMITTED IS DETERMINED BY THE DOTTED LINES THAT ENCLOSES BOTH THE TAXI AND ZERO FUEL CENTRE OF GRAVITY POSITIONS.

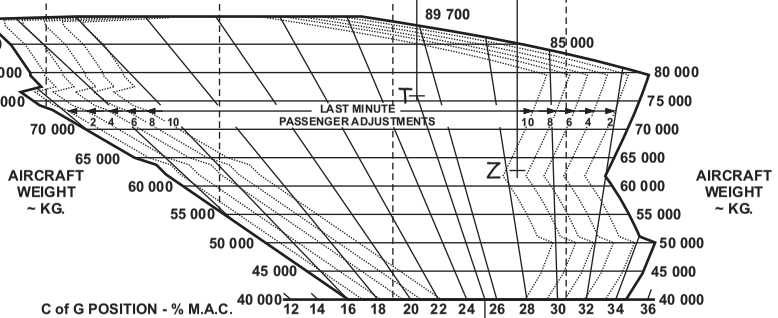


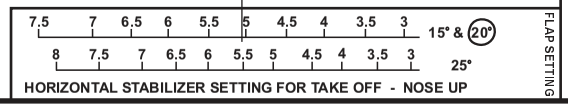
ALL WT IN KG

ADJ BASIC WT		47250
ROWS 1 - 6	18/-/-/-	1458
ROWS 7 - 12	22/3/-/-	1968
ROWS 13 - 17	25/-/4/-	2205
ROWS 18 - 22	21/3/4/1	2087
ROWS 23 - 27	23/3/2/1	2159
FWD COMPT 1	(MAX 2273)	875
FWD COMPT 2	(MAX 1809)	1380
REAR COMPT 4	(MAX 1827)	1450
REAR COMPT 5	(MAX 1801)	1683
EXTRA CREW	1	81
ZERO FUEL WT	(MAX 63500)	62596
+ FUEL LOAD		12900
TAXI WT	(MAX 89700)	75496
- TAXI FUEL		-1500
TAKE-OFF WT	(MAX 89350)	73996
- TRIP FUEL		-4864
LANDING WT	(MAX 72600)	70482
PAYLOAD ADJ		
FINAL ZERO FUEL		
FINAL TAKE-OFF		
FINAL LANDING		









ITEM	WEIGHT	INDEX
BASIC AIRCRAFT	47250	178
ADJ. BASIC A/C	47250	178

I am satisfied that this aircraft has been loaded in accordance with Company requirements.

Signed ..... (Captain or F.O.)

Prepared by .....

No. of Pass	
Initial	Final
130	

MAXIMUM ALLOWABLE T.O.W. ..... 89,350 ..... KG.

% MAC 25.3%	VH - ..... ATP .....
Flap Setting 20	Flt No. ..... 451 .....
Stab. Setting 5.05	From ..... SYD .....
Date 2/12/2021	To ..... MLB .....

B727 - 200 LONG RANGE LOAD & TRIM SHEET

FOR EXAM PURPOSES ONLY! Effective 2/12/2021

NOTES

THE CENTRE OF GRAVITY MUST BE CHECKED AT BOTH
(A) ZERO FUEL WEIGHT
(B) TAXI WEIGHT

LOAD ADJUSTMENTS

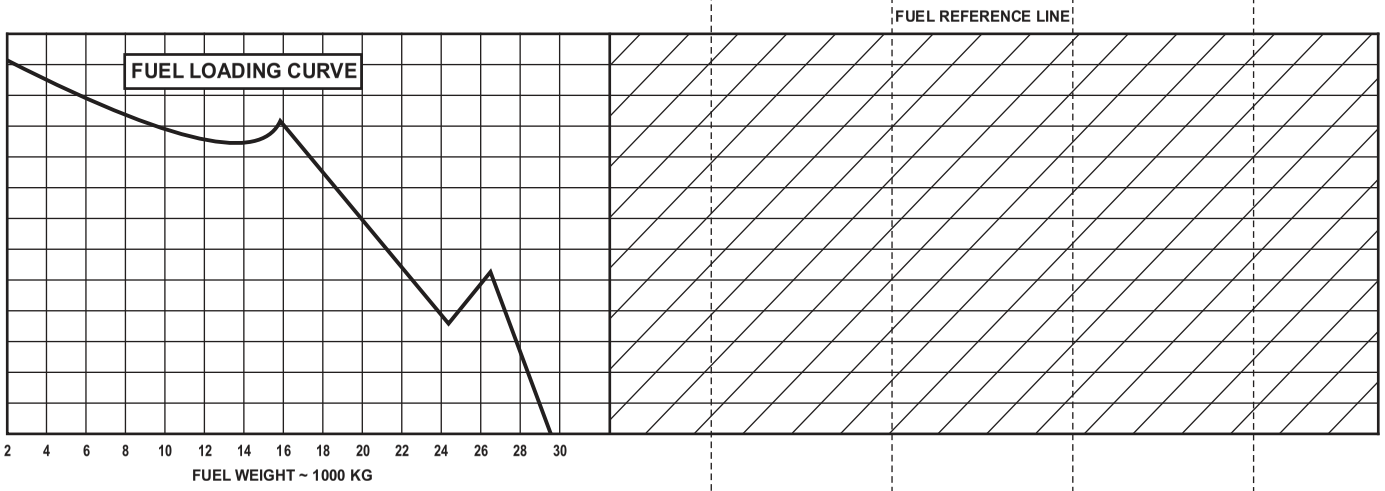
THE LAST MINUTE ADJUSTMENT LINES ALLOW FOR UP TO 10 PASSENGERS WITHOUT CHANGING THE STABILIZER TRIM SETTING. THE MAXIMUM PERMITTED IS DETERMINED BY THE DOTTED LINES THAT ENCLOSES BOTH THE TAXI AND ZERO FUEL CENTRE OF GRAVITY POSITIONS.

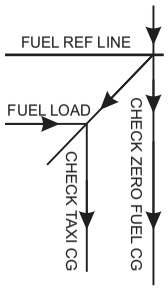
ALL WT IN KG

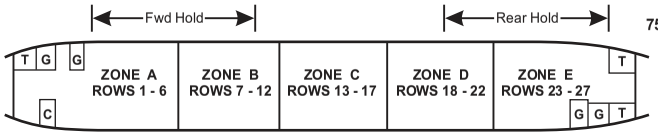
ADJ BASIC INDEX ____ I.U. (0 100 200 300)

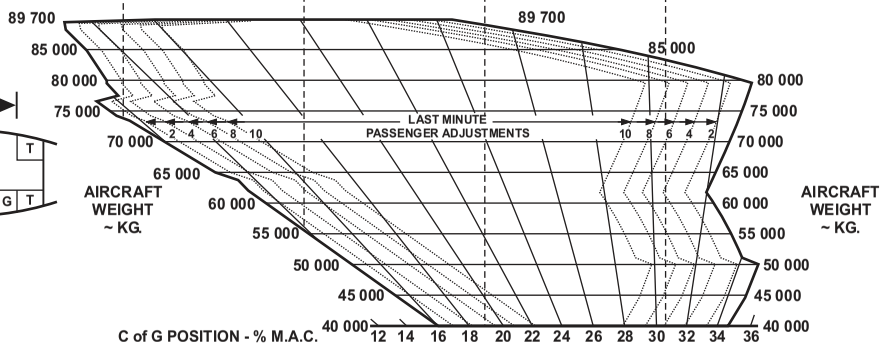
ROWS 1 - 6	10 PASS	ADJ BASIC WT
ROWS 7 - 12	10 PASS	ROWS 1 - 6
ROWS 13 - 17	10 PASS	ROWS 7 - 12
ROWS 18 - 22	10 PASS	ROWS 13 - 17
ROWS 23 - 27	10 PASS	ROWS 18 - 22
FWD COMPT 1	1000 kg	ROWS 23 - 27
FWD COMPT 2	1000 kg	FWD COMPT 1 (MAX 2273)
REAR COMPT 4	1000 kg	FWD COMPT 2 (MAX 1809)
REAR COMPT 5	1000 kg	REAR COMPT 4 (MAX 1827)
EXTRA CREW	1 EXTRA CREW	REAR COMPT 5 (MAX 1801)
		EXTRA CREW
		ZERO FUEL WT (MAX 63500)
		+ FUEL LOAD
		TAXI WT (MAX 89700)
		- TAXI FUEL
		TAKE-OFF WT (MAX 89350)
		- TRIP FUEL
		LANDING WT (MAX 72600)

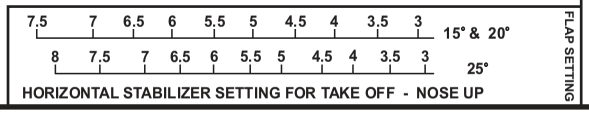
PAYLOAD ADJ	
FINAL ZERO FUEL	
FINAL TAKE-OFF	
FINAL LANDING	











ITEM	WEIGHT	INDEX
BASIC AIRCRAFT		
ADJ. BASIC A/C		

I am satisfied that this aircraft has been loaded in accordance with Company requirements.

Signed ..... (Captain or F.O.)

Prepared by .....

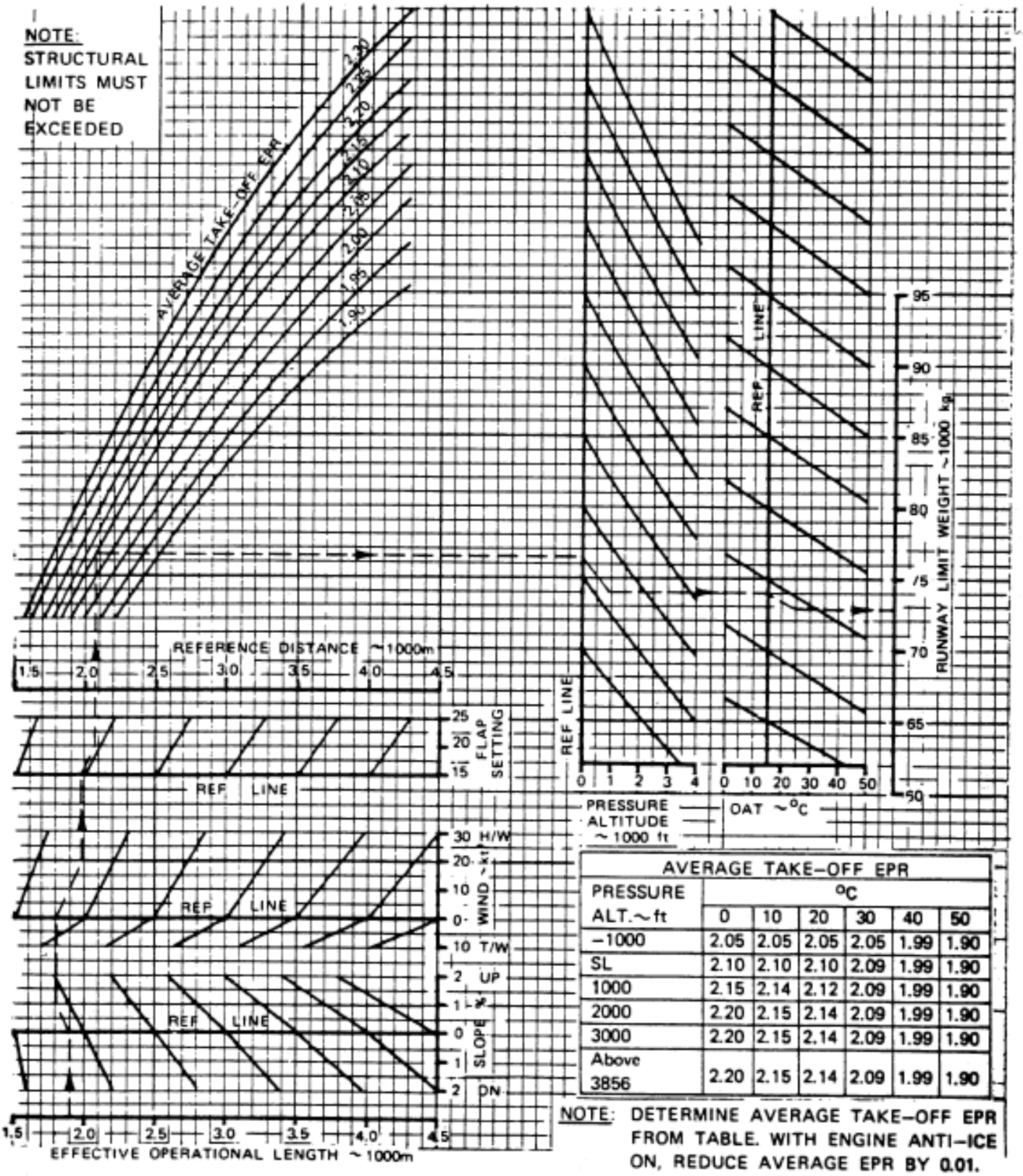
No. of Pass	
Initial	Final

MAXIMUM ALLOWABLE T.O.W. ..... KG.

% MAC .....
Flap Setting .....
Stab. Setting .....
Date .....

VH - .....
Flt No. .....
From .....
To .....

BOEING 727



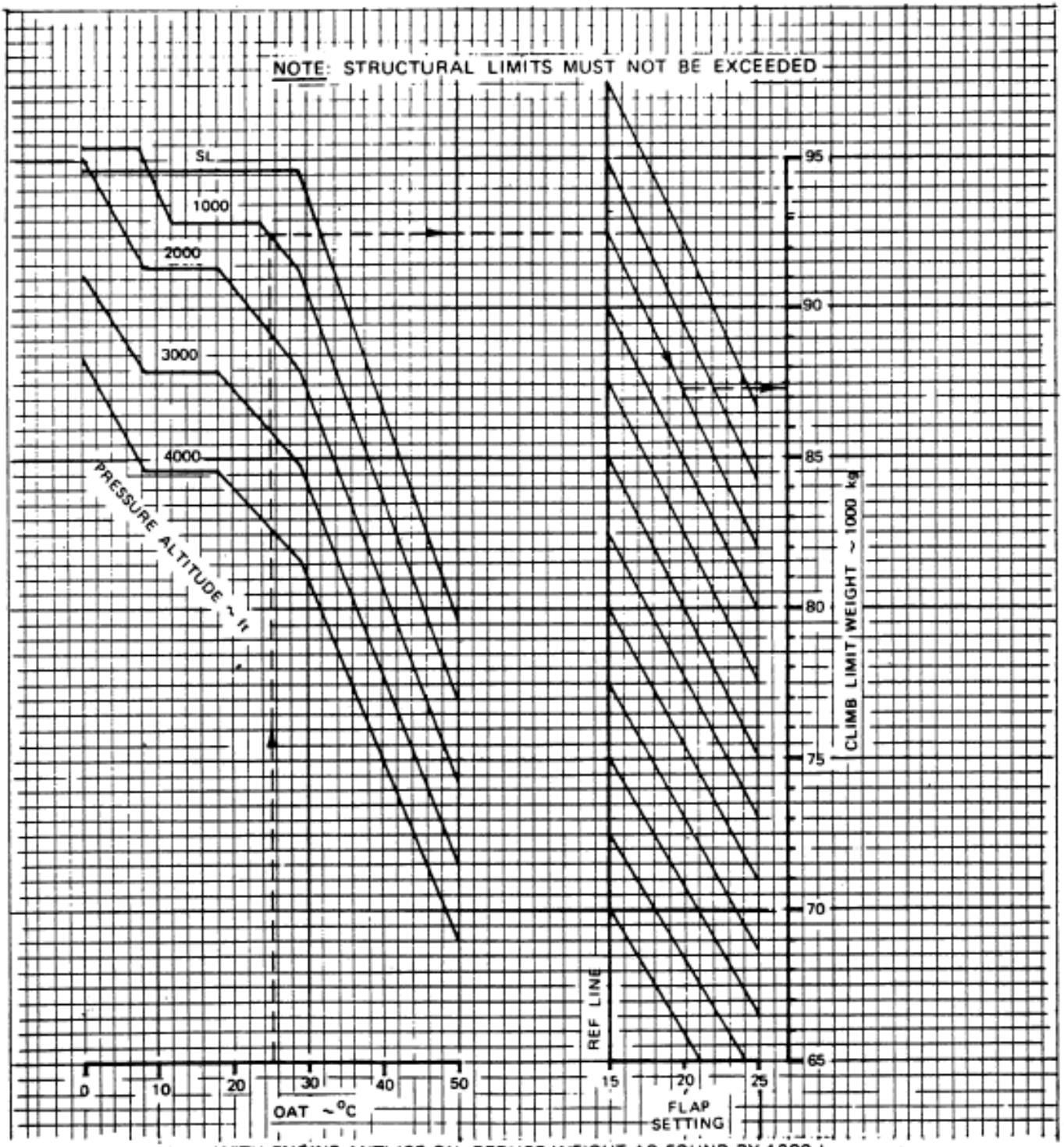
AVERAGE TAKE-OFF EPR						
PRESSURE ALT.~ft	°C					
	0	10	20	30	40	50
−1000	2.05	2.05	2.05	2.05	1.99	1.90
SL	2.10	2.10	2.10	2.09	1.99	1.90
1000	2.15	2.14	2.12	2.09	1.99	1.90
2000	2.20	2.15	2.14	2.09	1.99	1.90
3000	2.20	2.15	2.14	2.09	1.99	1.90
Above 3856	2.20	2.15	2.14	2.09	1.99	1.90

NOTE: DETERMINE AVERAGE TAKE-OFF EPR FROM TABLE. WITH ENGINE ANTI-ICE ON, REDUCE AVERAGE EPR BY 0.01.

TAKE-OFF ~ RUNWAY LIMITATION

GRAPH 2.1

BOEING 727



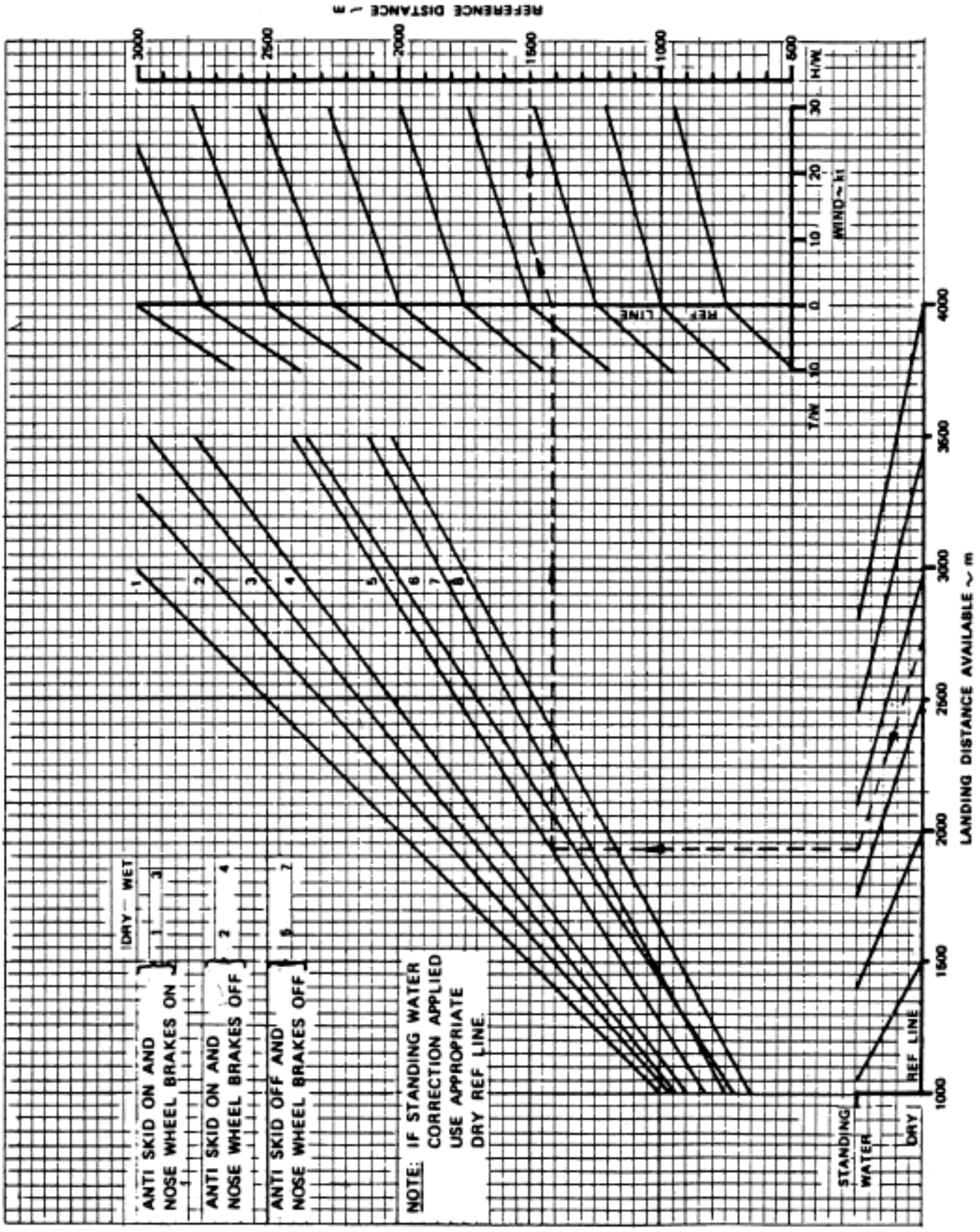
NOTE: 1. WITH ENGINE ANTI-ICE ON, REDUCE WEIGHT AS FOUND BY 1200 kg.

2. WITH ENGINE AND WING ANTI-ICE ON, REDUCE WEIGHT AS FOUND BY 4000 kg.

3. IN TAILWIND, REDUCE WEIGHT AS FOUND BY 350 kg PER KNOT.

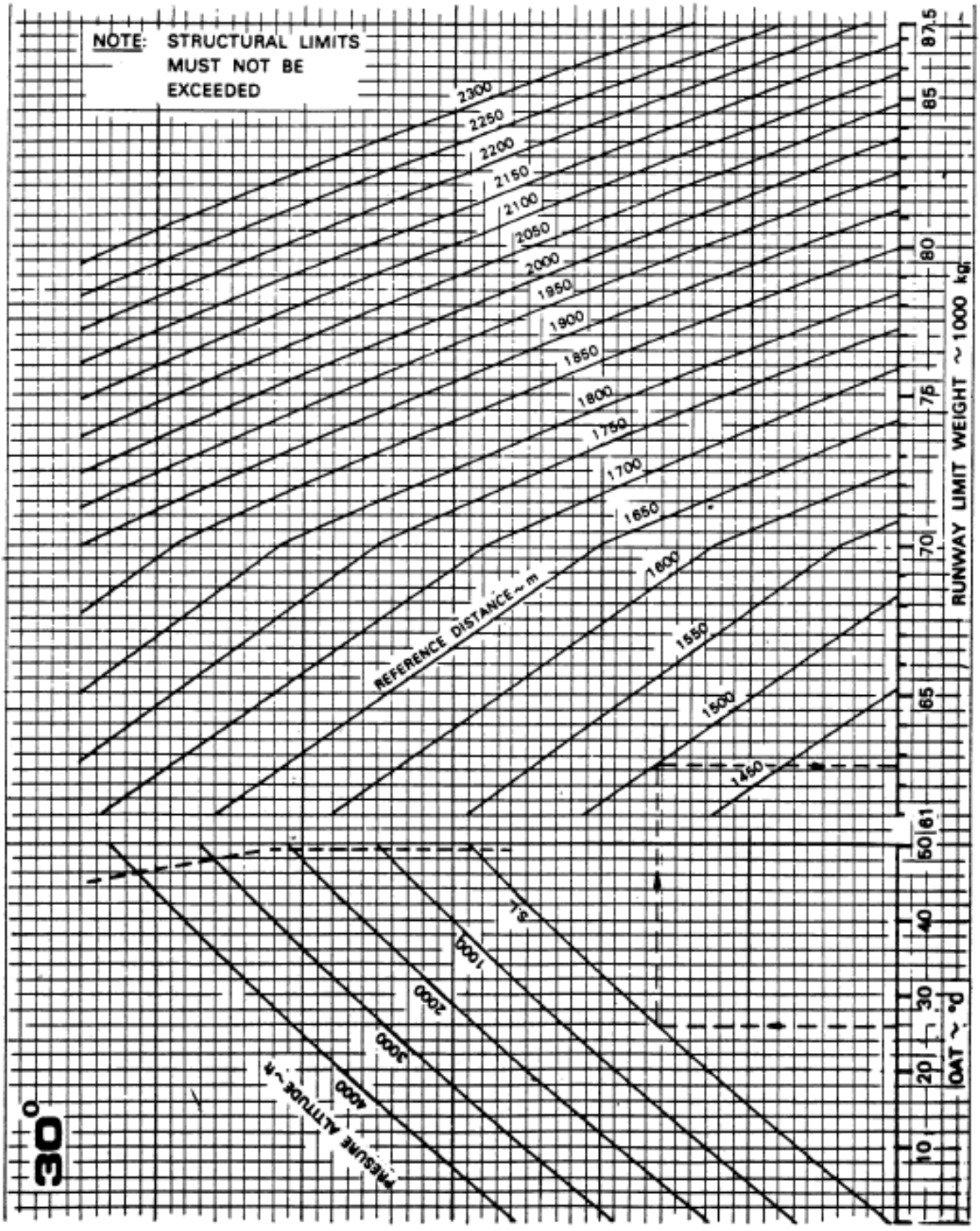
TAKE-OFF ~ CLIMB LIMITATION

GRAPH 2.2



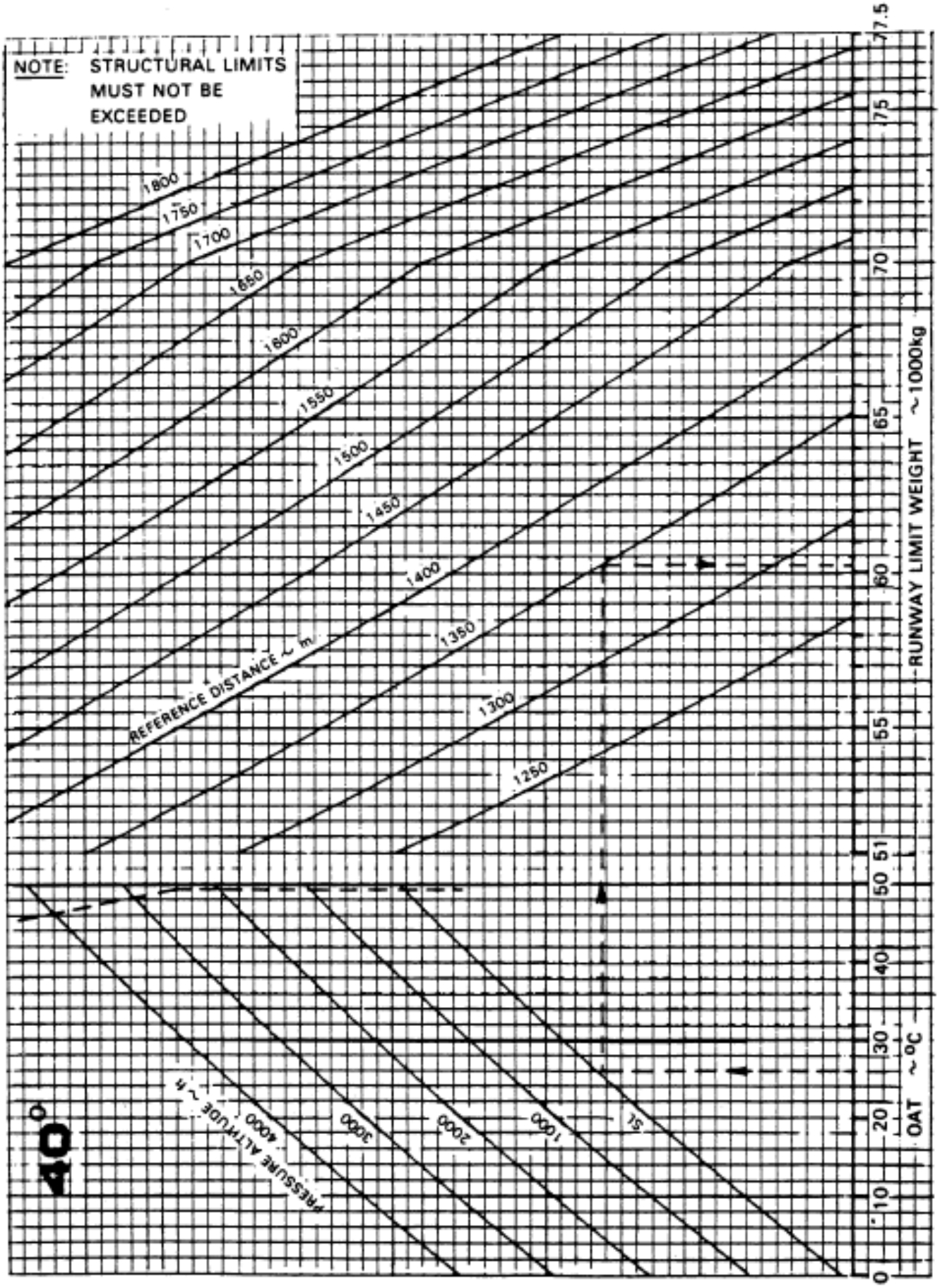
LANDING ~ REFERENCE DISTANCE ~ FLAP 30° AND 40°

GRAPH 4.1



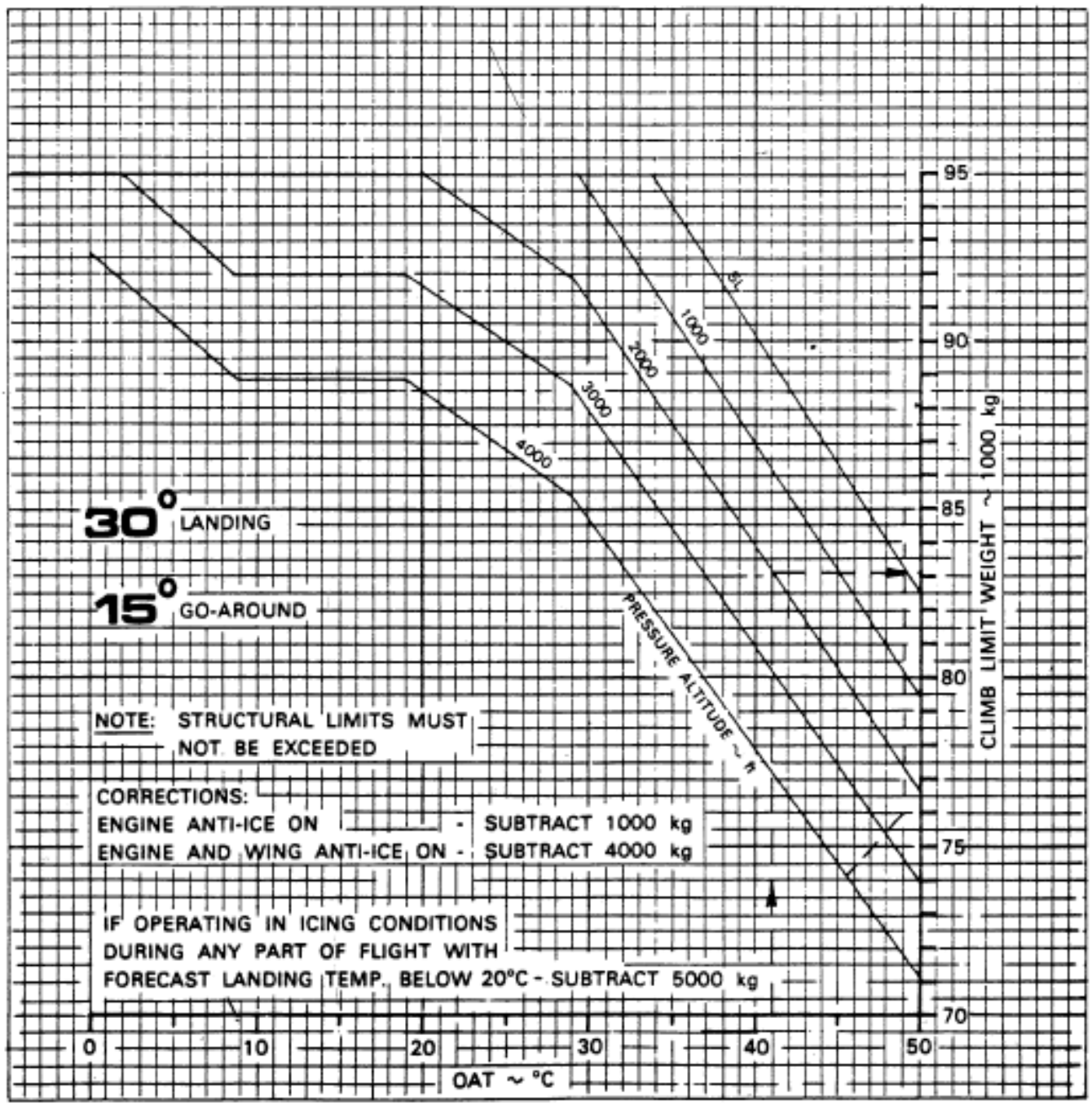
LANDING ~ RUNWAY LIMITATION ~ FLAP 30°

GRAPH 4.2



LANDING ~ RUNWAY LIMITATION ~ FLAP 40°

GRAPH 4.3



LANDING ~ CLIMB LIMITATION ~ 30° FLAP

GRAPH 4.4.