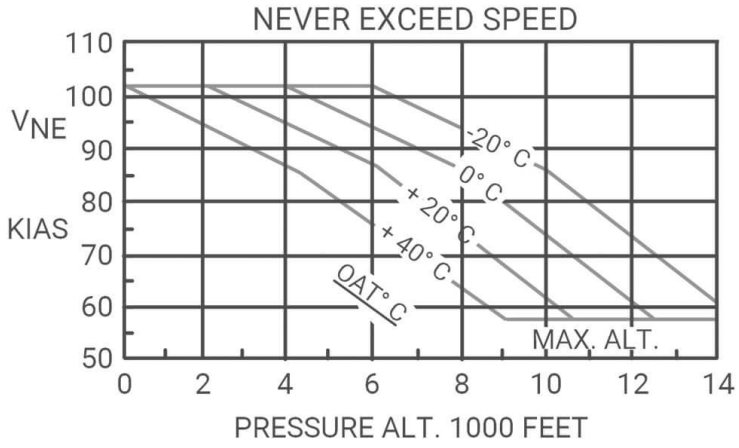
PLACARDS (cont'd)

R22 Beta II
O-360-J2A Engine

LIMIT MANIFOLD PRESSURE - IN. HG

MAXIMUM CONTINUOUS POWER							
PRESS ALT-FT	OAT - °C						
	-20	-10	0	10	20	30	40
SL	21.5	21.8	22.1	22.3	22.6	22.9	23.2
2000	21.1	21.4	21.6	21.9	22.2	22.5	22.8
4000	20.7	21.0	21.2	21.5	21.8	22.0	22.3
6000	20.3	20.6	20.8	21.1	21.3	21.6	21.9
8000	19.9	20.2	20.4	20.7	20.9	FULL THROTTLE	
FOR MAX TAKEOFF POWER (5 MIN), ADD 0.9 IN. HG							

All R22s
except Beta II



R22 Beta II

NEVER EXCEED SPEED - KIAS

PRESS ALT-FT	OAT - °C						
	-20	-10	0	10	20	30	40
SL	102						
2000						99	96
4000				98	94	91	87
6000		98	94	90	87	82	77
8000	94	90	86	80	75	69	64
10000	86	80	74	68	62	57	
12000	74	67	61	NO FLIGHT			
14000	61						

SECTION 5

PERFORMANCE

GENERAL

The information contained in Section 5, Performance, is approved by the Federal Aviation Administration.

Hover controllability has been substantiated in 17 knot wind from any direction up to 9,800 feet density altitude. Refer to IGE hover performance data for allowable gross weight.

Indicated airspeed (KIAS) shown on graphs assumes zero instrument error.

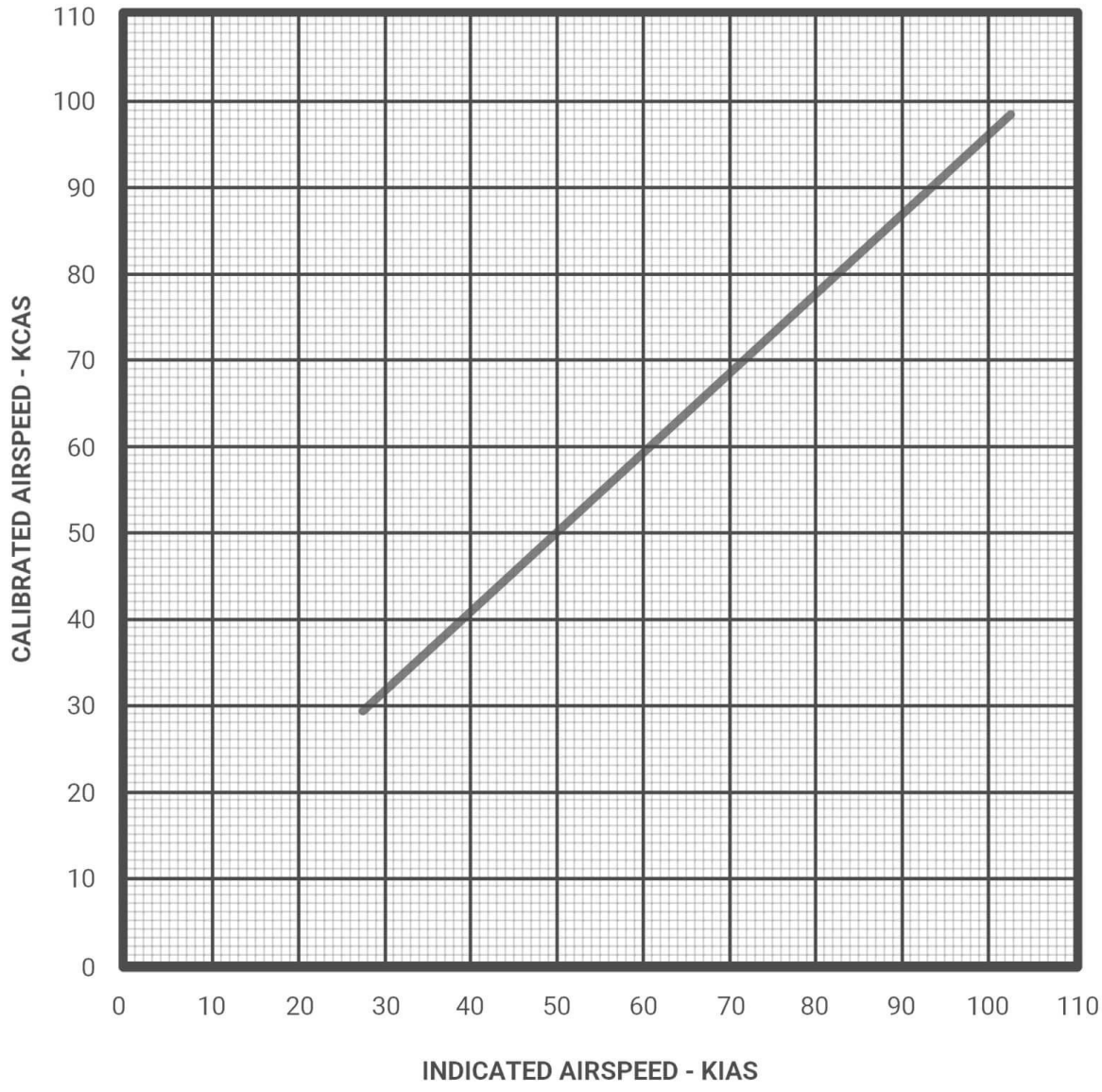
CAUTION

The performance data presented in this section was obtained under ideal conditions. Performance under other conditions may be substantially less. Hover performance data was obtained with carburetor heat off.

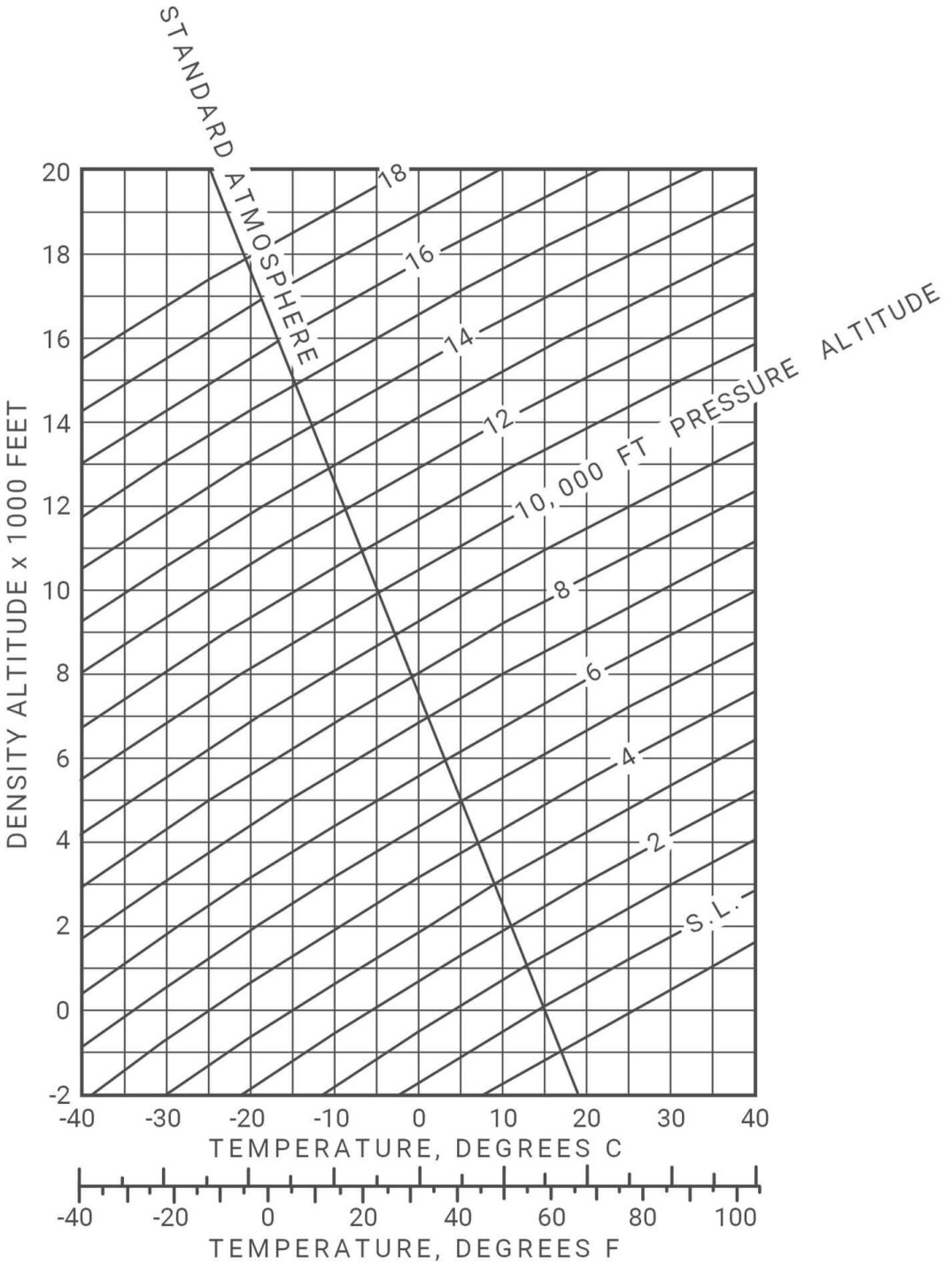
DEMONSTRATED OPERATING TEMPERATURE

Satisfactory engine cooling has been demonstrated to an outside air temperature of 38° C (100° F) at sea level or 23° C (41° F) above ISA at altitude.

Note: Indicated airspeed assumes zero instrument error.

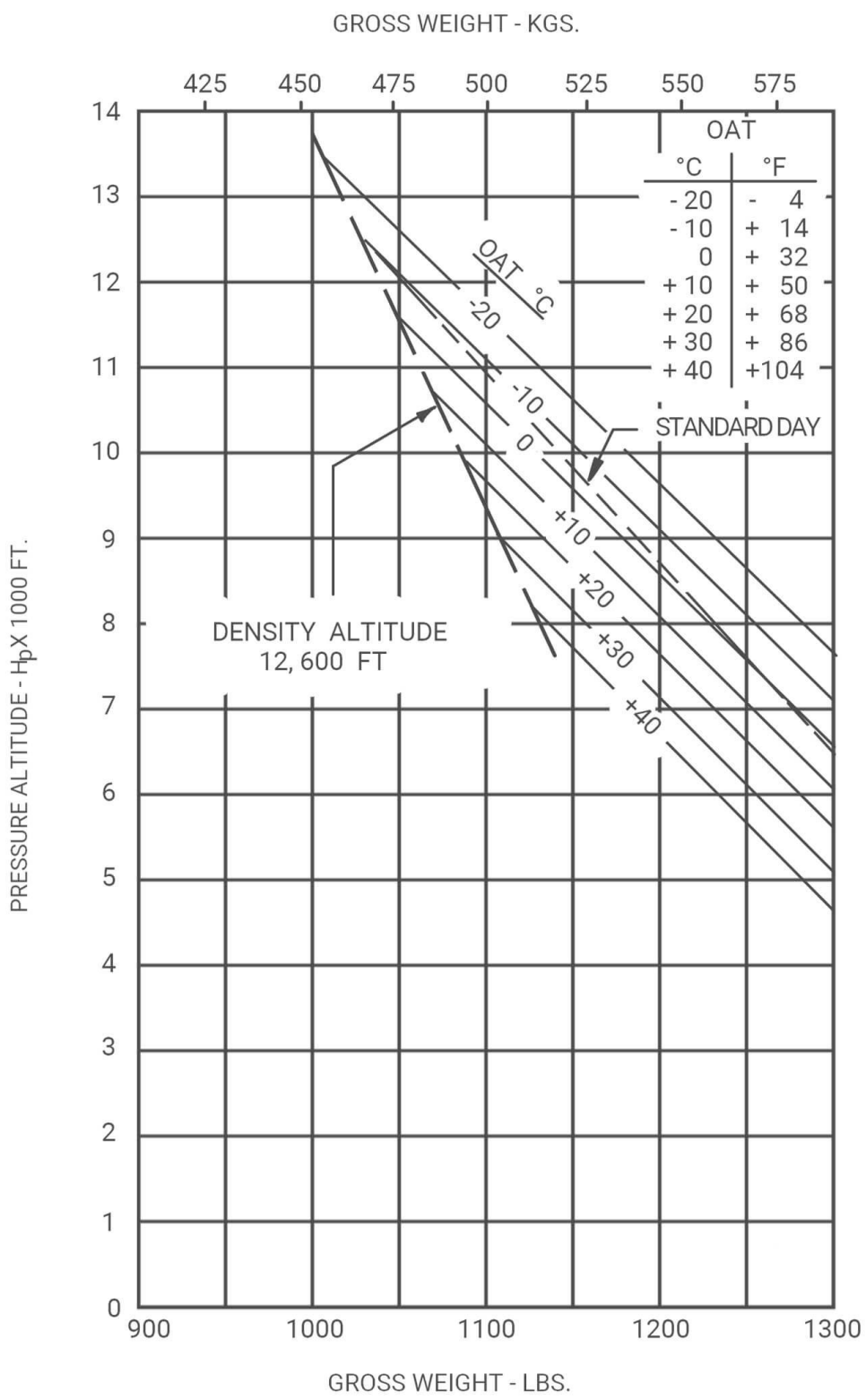


AIRSPEED CALIBRATION CURVE



DENSITY ALTITUDE CHART

IN GROUND EFFECT AT 2 FOOT SKID CLEARANCE
FULL THROTTLE AND 104% RPM

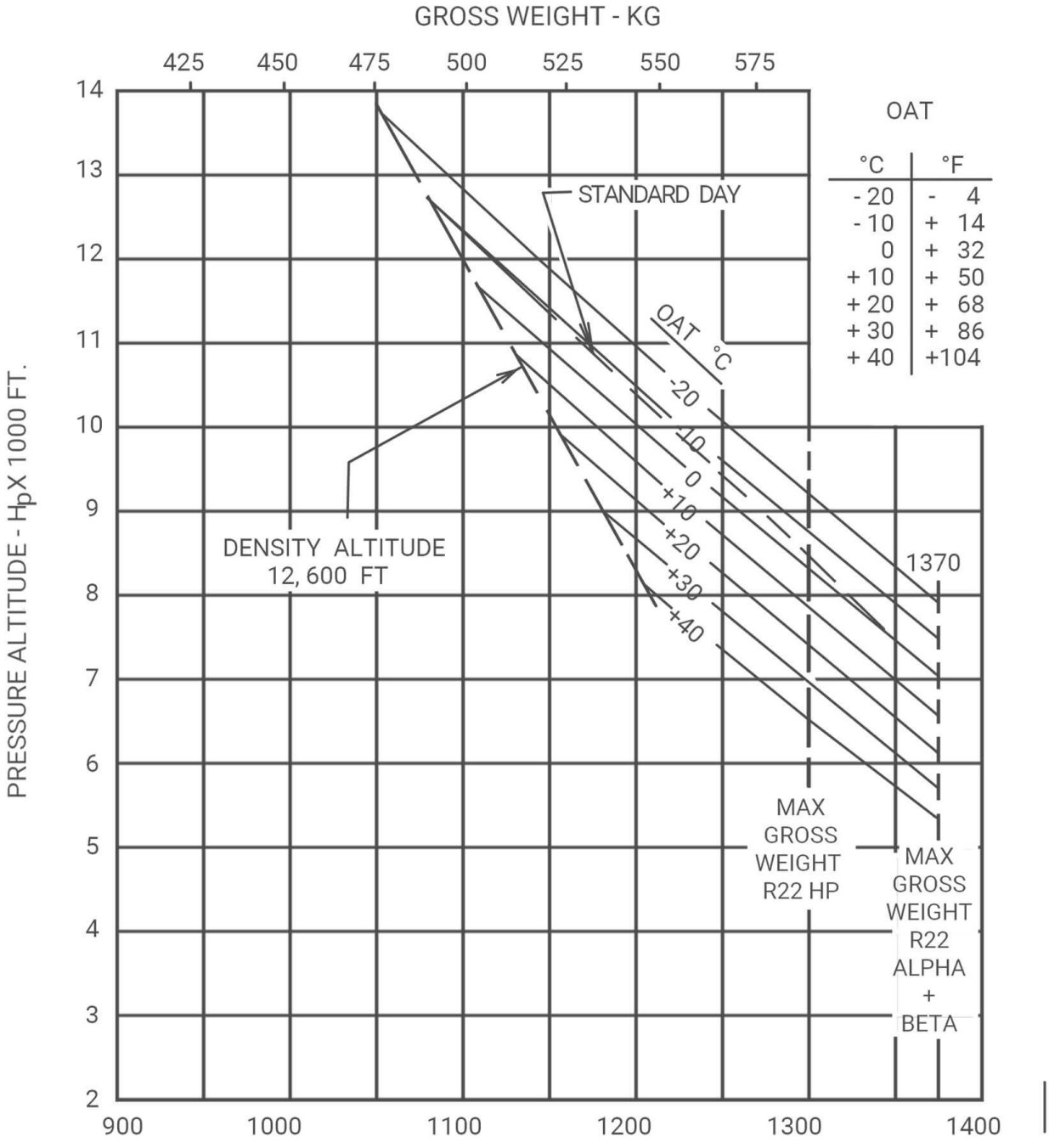


R22 STANDARD

0-320-A2B OR A2C ENGINE

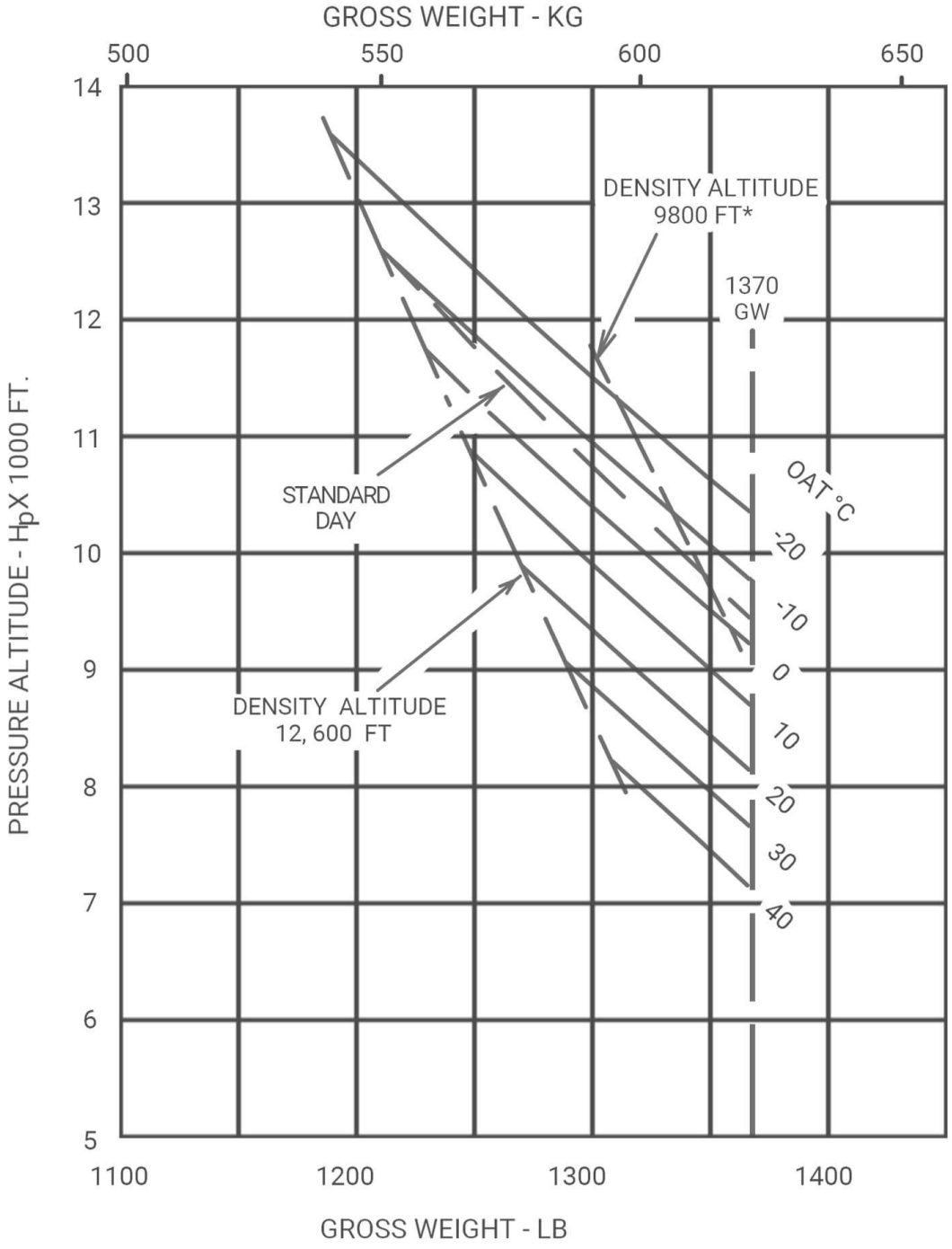
IGE HOVER CEILING VS. GROSS WEIGHT

IN GROUND EFFECT AT 2 FOOT SKID CLEARANCE
FULL THROTTLE
104% RPM
ZERO WIND



R22 HP, ALPHA, & BETA
O-320-B2C ENGINE
IGE HOVER CEILING VS. GROSS WEIGHT

IN GROUND EFFECT AT 2 FOOT SKID CLEARANCE
FULL THROTTLE
103-104% RPM
ZERO WIND

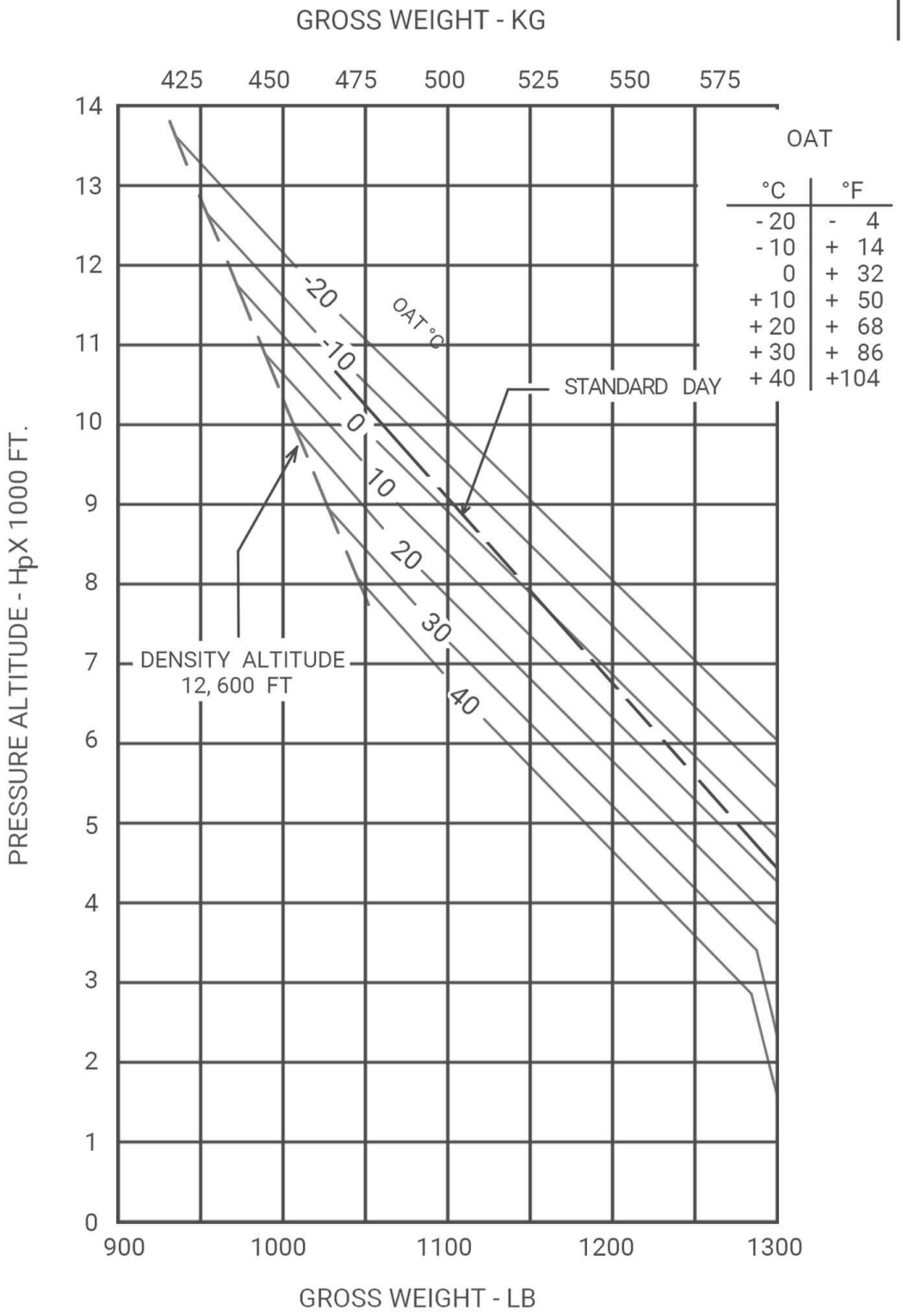


R22 BETA II
O-360 -J2A ENGINE

IGE HOVER CEILING VS. GROSS WEIGHT

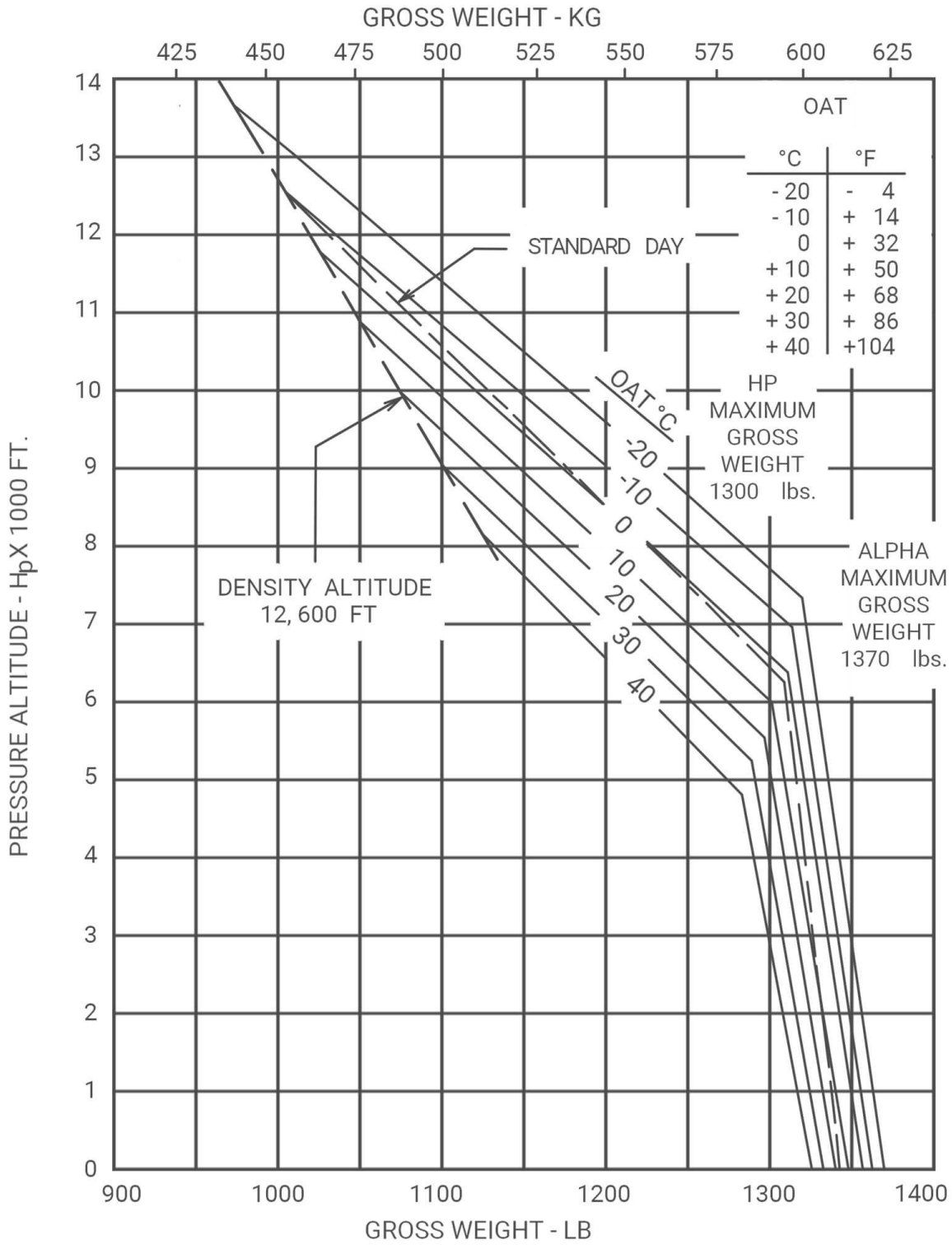
*Hover controllability with 17 knot wind substantiated up to 9800 feet density altitude.

OUT OF GROUND EFFECT, ZERO WIND
LIMIT MANIFOLD PRESSURE TO CRITICAL ALTITUDE
FULL THROTTLE ABOVE CRITICAL ALTITUDE
104 % RPM



R22 STANDARD
O- 320 -A2B OR A2C ENGINE
OGE HOVER CEILING VS. GROSS WEIGHT

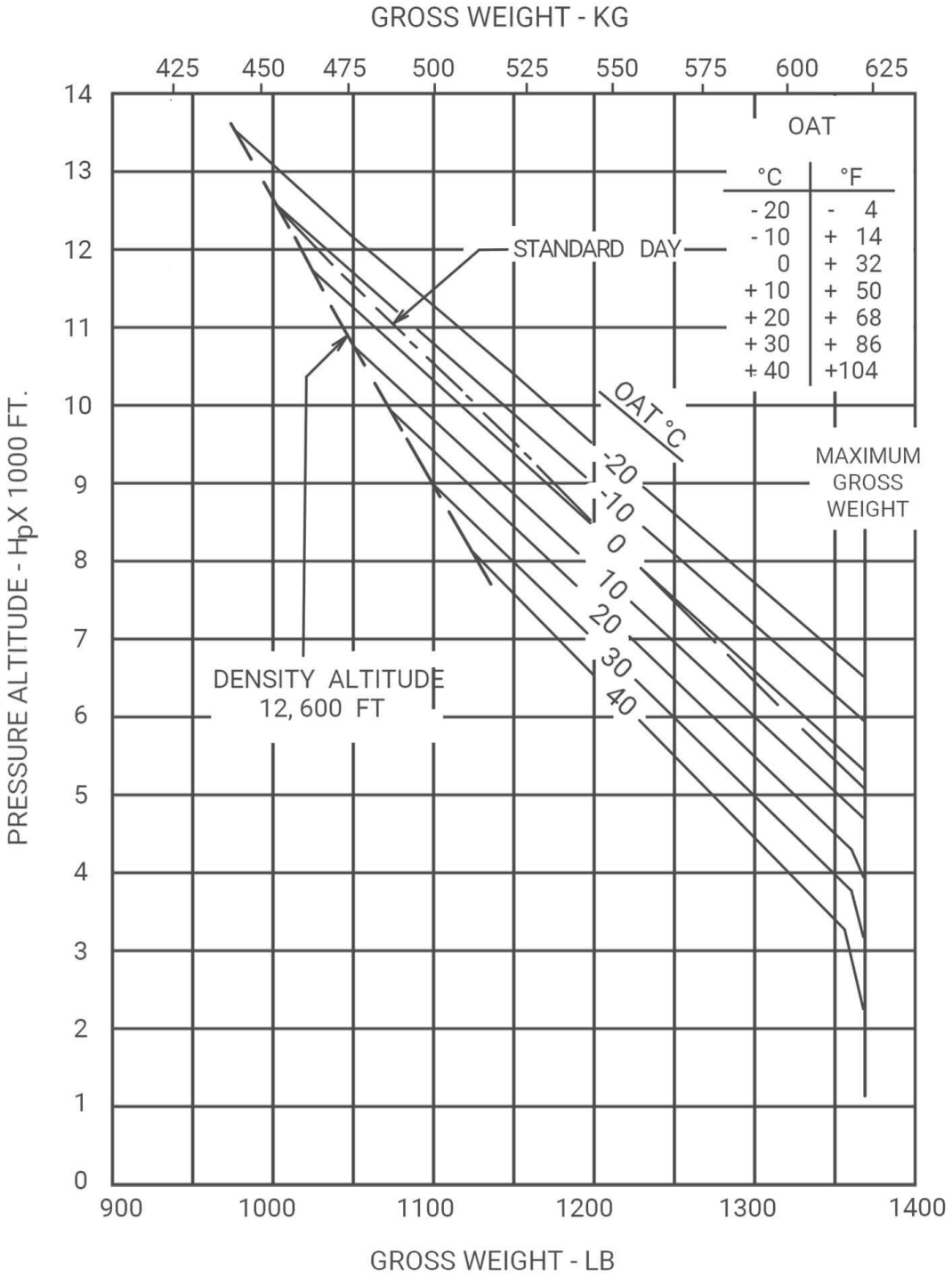
OUT OF GROUND EFFECT, ZERO WIND
LIMIT MANIFOLD PRESSURE TO CRITICAL ALTITUDE
FULL THROTTLE ABOVE CRITICAL ALTITUDE
104 % RPM



R22 HP & ALPHA
O-320-B2C ENGINE

OGE HOVER CEILING VS. GROSS WEIGHT

OUT OF GROUND EFFECT, ZERO WIND
LIMIT MANIFOLD PRESSURE (5 MINUTE TOP)* TO CRITICAL ALTITUDE
FULL THROTTLE ABOVE CRITICAL ALTITUDE
104 % RPM



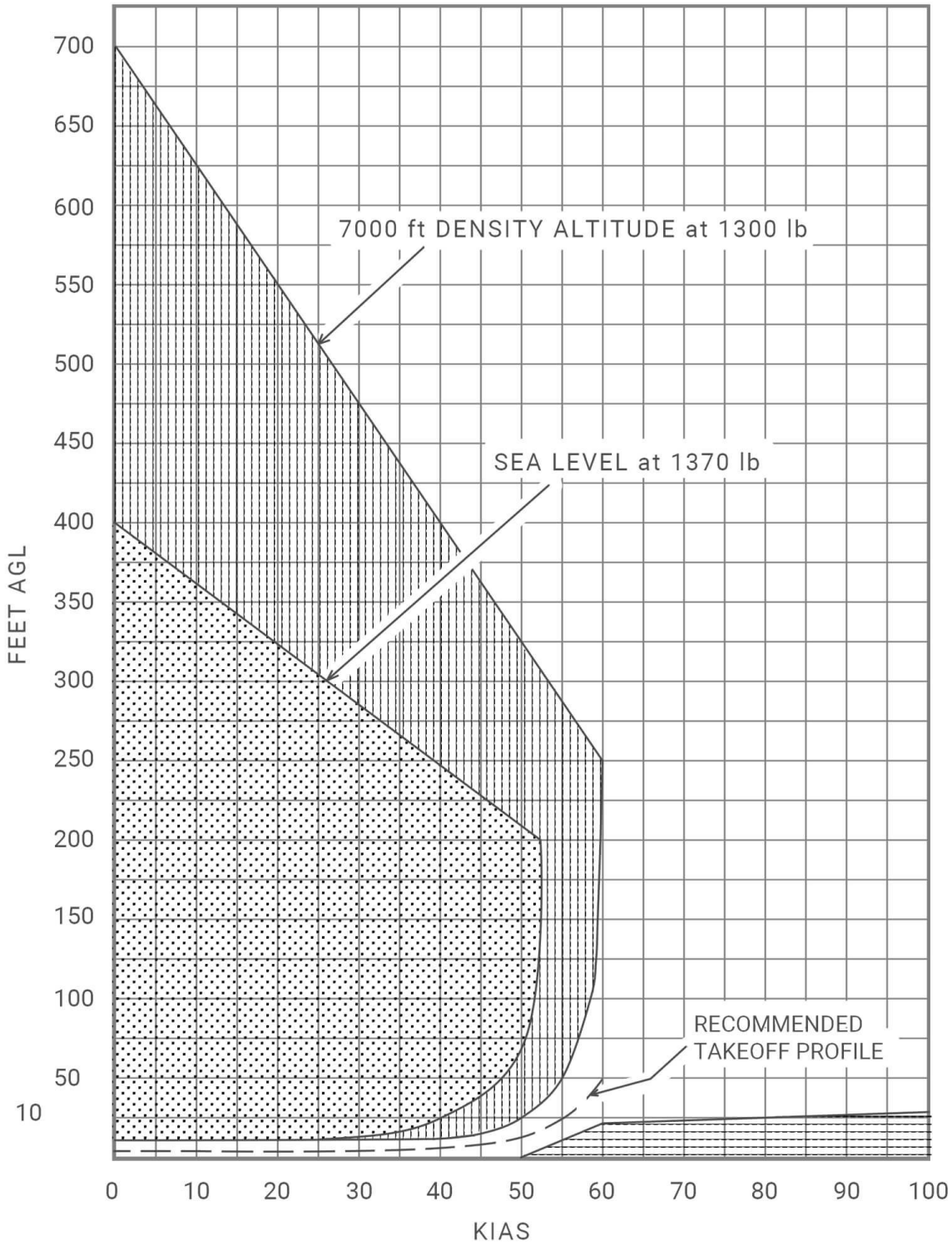
R22 BETA & BETA II
O-320-B2C OR O-360-J2A ENGINE

OGE HOVER CEILING VS. GROSS WEIGHT

*OGE hover ceiling at maximum continuous power is same as R22 Alpha OGE hover ceiling. See chart on page 5-8.

DEMONSTRATED CONDITIONS:
SMOOTH HARD SURFACE
WIND CALM
103-104 % RPM

AVOID OPERATION IN SHADED AREAS



HEIGHT - VELOCITY DIAGRAM

HELICOPTER WEIGHING PROCEDURES (cont'd)

8. Raise aircraft and place 500 lb. capacity weight scales under each skid. Locate center of scales 10 inches forward of aft end of skids.
9. Lower aircraft until it rests entirely on scales. Aircraft must be well balanced on scales before releasing tail. Be sure aircraft is level laterally by placing level on center of aft landing gear crosstube.
10. Record empty weight.

R Scale _____ lb

L Scale _____ lb

Tare _____ lb

Empty weight: _____ lb

BASIC EMPTY WEIGHT & C.G.			
ITEM	Weight (lb)	C.G. Arm** (in.)	Moment* (lb-in.)
Ship as weighed (from 7 & 10)	_____	_____	_____
Add drained unusable fuel	0.6	108.6	65
Helicopter Basic Empty Weight (Includes unusable fuel & full oil)	_____		_____

***Moment = Weight x C.G. Arm**

****Arm measured from Datum located 100 inches forward of rotor centerline.**

LATERAL CG POSITION

It is usually not necessary to determine the lateral CG position as most optional equipment is located near the helicopter centerline. However, if an unusual installation or loading occurs which could affect the lateral CG, its position should be checked against the CG envelope contained in Section 2. The lateral CG position can be calculated by multiplying the weights of all items, not symmetrical about the centerline, times their arm from the centerline. Then considering all items on the right as positive and those on the left as negative, sum the moments and divide the total by the weight of the loaded helicopter. This will give you the lateral position which, together with the CG position aft of the datum, can be compared with the allowable CG envelope in Section 2.

When weighing the helicopter, the center distance between the skids must be accurately measured while the ship is resting on the scales. The lateral CG position equals: (R scale reading - L scale reading) x ½ Distance between skids ÷ (R scale reading + L scale reading).

The following CG locations may be used when determining the helicopter CG position.

Item	Long CG	Lat CG
Pilot & Baggage under R seat	*79.0	+ 10.7
Passenger & Baggage under L seat	*79.0	- 9.3
Main Fuel	108.6	- 11.0
Aux Fuel (optional)	103.8	+ 11.2

*See note on Page 6-7

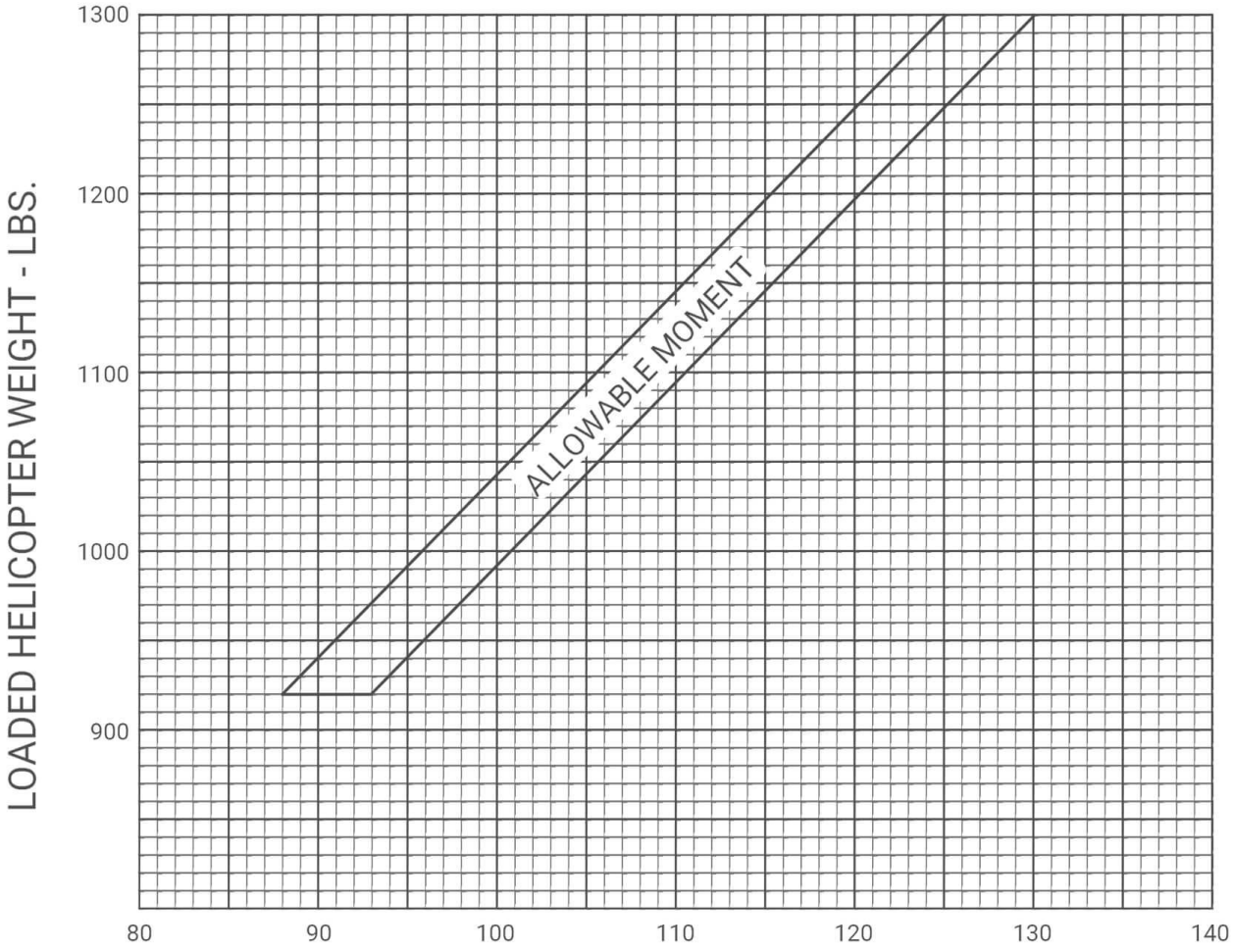
LOADING INSTRUCTIONS

The following sample loading calculation may be used to determine the total moment of your helicopter. Both the moment with take-off fuel and the moment with empty fuel must be within the allowable moment shown on the diagram.

SAMPLE LOADING CALCULATION	Arm Inches from Datum	Sample Helicopter		Your Helicopter	
		Weight (lbs)	Moment (lb-in)	Weight (lbs)	Moment (lb-in)
1. Basic Empty Weight as Equipped (Includes unusable fuel and full oil)	104.8	830	86,984		
2. Pilot, Passenger and Baggage	*78.0	425	33,150		
Total Weight and Balance with zero usable fuel	95.7	1255	120,134		
3. Usable Fuel at 6 lbs/gal.	108.6	115	12,489		
Total Weight & Balance with take-off fuel	96.8	1370	132,623		

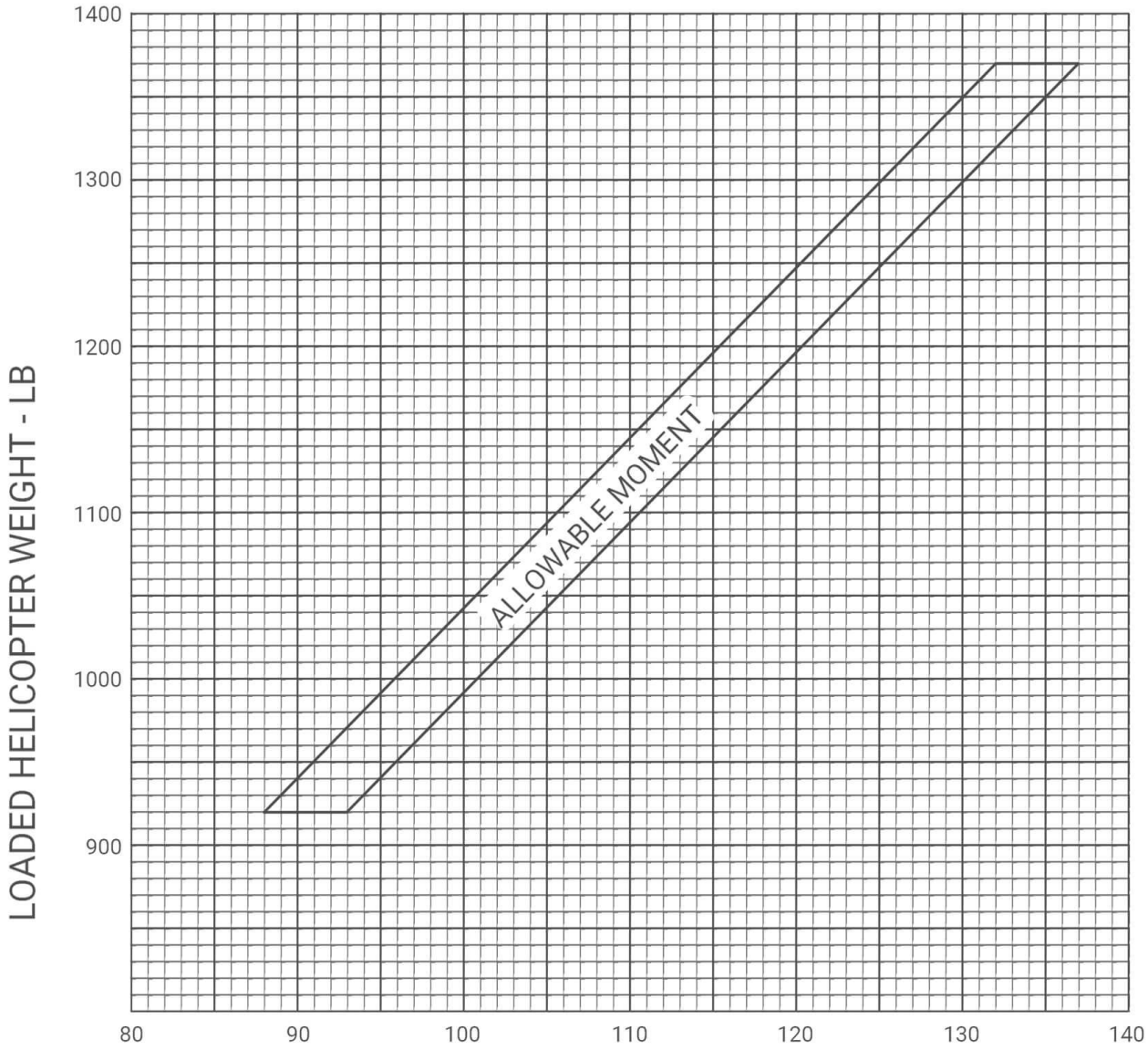
(Note: The CG location aft of the datum, for the loaded helicopter, can be determined by dividing the total weight into the total moment.)

*Use 78.0 for S/N 256 and subsequent and for aircraft equipped with new type seats installed after DEC. 22, 1981. Use 79.0 for aircraft prior to S/N 256 with original seats. If cushion is used, subtract compressed thickness of cushion from arm.



R22 STANDARD AND HP

ALLOWABLE CG MOMENT VS. GROSS WEIGHT ENVELOPE



R22 ALPHA, BETA, & BETA II

ALLOWABLE CG MOMENT VS. GROSS WEIGHT ENVELOPE