

Aeroplane Type:..... PIPEP P119-101

Registration Marking:..... VH-SFK Serial No: 2842125

ISSUE:.... ONE

DATE:..... 7.12.01

EXPIRY:..... INDEFINITE

AEROPLANE WEIGHT AND CENTRE OF GRAVITY DATA:

| ITEM                                                                             | WEIGHT<br>(Kg) | ARM<br>(mm aft<br>of datum) | MOMENT<br>(Kg.mm) | CABIN<br>CONFIGURATION |
|----------------------------------------------------------------------------------|----------------|-----------------------------|-------------------|------------------------|
| BASIC                                                                            | 707.6          | 2182.7                      | 1544570           | FOUR SEATS TOTAL       |
| STANDARD CABIN CONFIGURATION                                                     |                |                             |                   |                        |
| THE FOLLOWING IMPERIAL UNITS ARE<br>FOR USE WITH THE PILOTS HANDBOOK SECTION SIX |                |                             |                   |                        |
|                                                                                  | (lb)           | (in)                        | (in.lb)           |                        |
| BASIC                                                                            | 1560.0         | 85.94                       | 134063            | FOUR SEATS TOTAL       |

NOTE: The above empty weights include:-

BASIC - unusable fuel and full oil

**SECTION 6**  
**WEIGHT AND BALANCE**

**PA-28-161, WARRIOR III**

|                                                                 | Weight<br>(Lbs) | Arm Aft<br>Datum<br>(Inches) | Moment<br>(In-Lbs) |
|-----------------------------------------------------------------|-----------------|------------------------------|--------------------|
| Basic Empty Weight                                              |                 |                              |                    |
| Pilot and Front Passenger                                       |                 | 80.5                         |                    |
| Passengers (Rear Seats)*                                        |                 | 118.1                        |                    |
| Fuel (48 Gallon Maximum)                                        |                 | 95.0                         |                    |
| Baggage* (200 Lbs. Maximum)                                     |                 | 142.8                        |                    |
| Ramp Weight (2447 Lbs. Normal,<br>2027 Lbs. Utility Maximum)    |                 |                              |                    |
| Fuel Allowance<br>For Engine Start, Taxi and Run Up             | -7              | 95.0                         | -665               |
| Takeoff Weight (2440 Lbs. Normal,<br>2020 Lbs. Utility Maximum) |                 |                              |                    |

Totals must be within approved weight and C.G. limits. It is the responsibility of the airplane owner and the pilot to insure that the airplane is loaded properly. The Basic Empty Weight C.G. is noted on the Weight and Balance Data Form (Figure 6-5). If the airplane has been altered, refer to the Weight and Balance Record for this information.

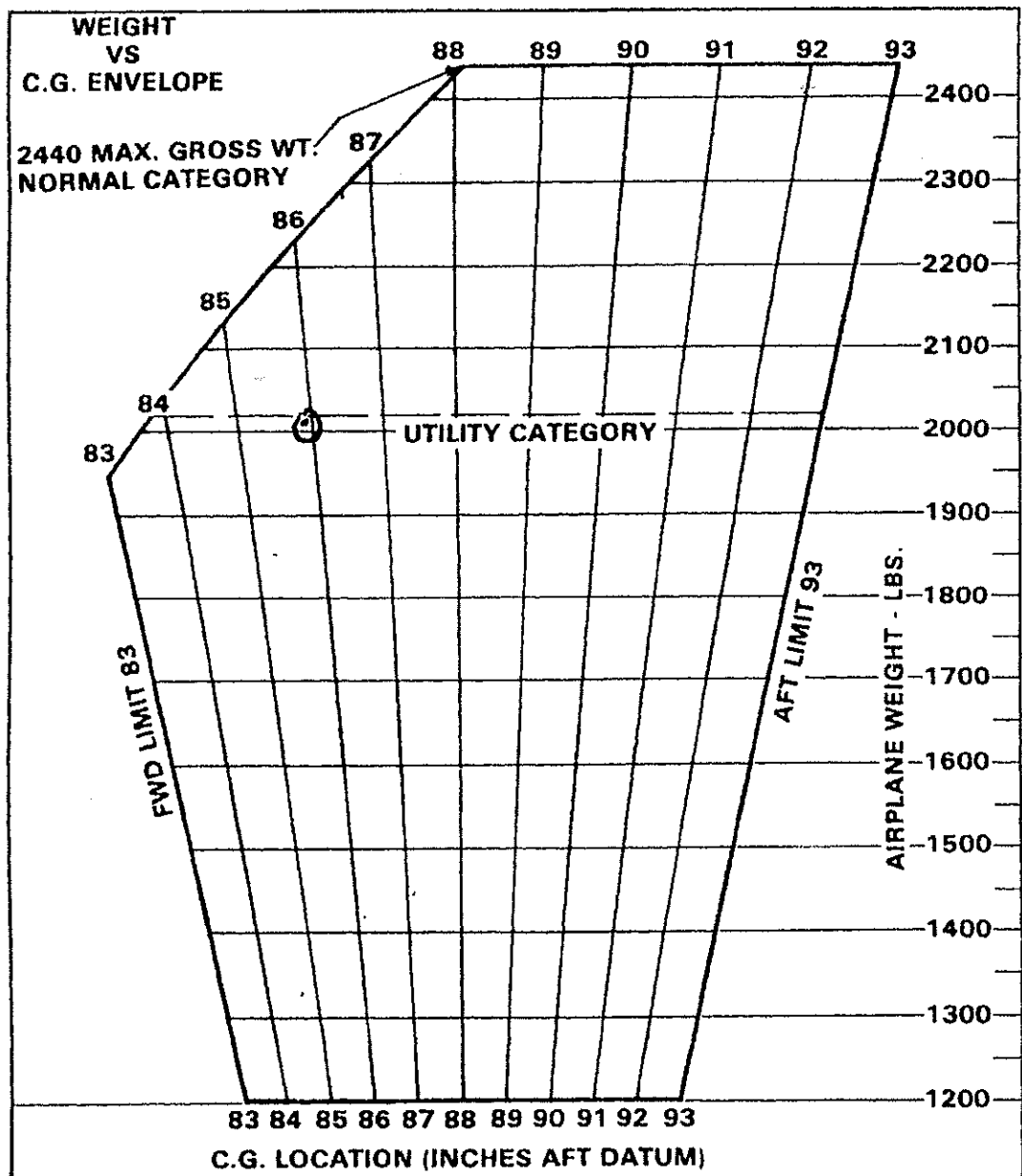
\*Utility Category Operation - No baggage or aft passengers allowed.

**WEIGHT AND BALANCE LOADING FORM**

Figure 6-11

**SECTION 6**  
**WEIGHT AND BALANCE**

**PA-28-161, WARRIOR III**



**C.G. RANGE AND WEIGHT**

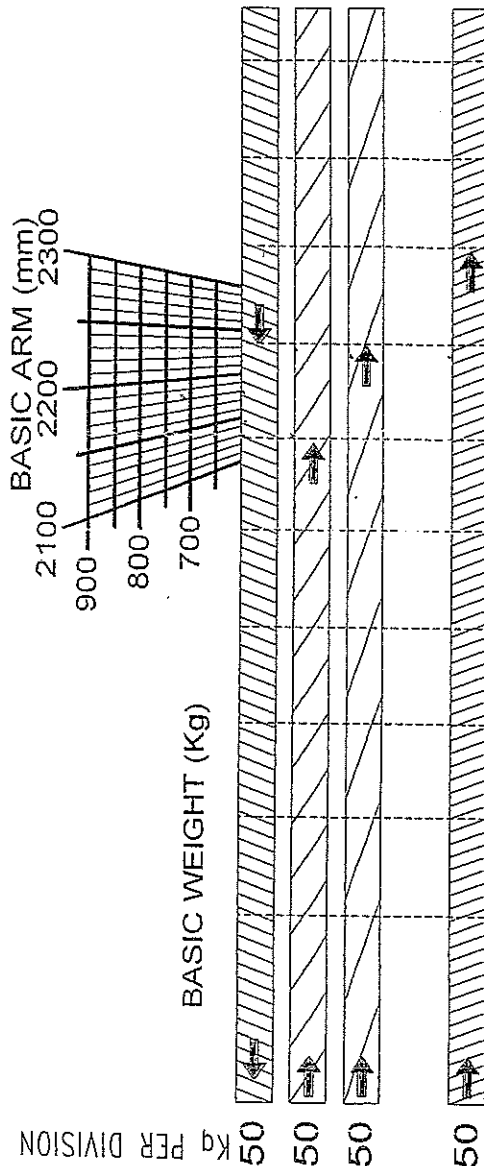
Figure 6-15

# LOAD CHART BC/PA161/1 PIPER PA28-161 WARRIOR

\*APPLICABLE TO ALL PA28-161  
WARRIOR II AND III AIRCRAFT  
S/N 28-7716001 AND ON.

|                  |  |
|------------------|--|
| BASIC WEIGHT     |  |
| PILOT/CO-PILOT   |  |
| REAR SEATS       |  |
| BAGGS (MAX 90.7) |  |
| ZERO FUEL WEIGHT |  |
| FUEL (MAX 130)   |  |
| TAKE-OFF WEIGHT  |  |
| FUEL BURN-OFF    |  |
| LANDING WEIGHT   |  |

50 kg PER DIVISION

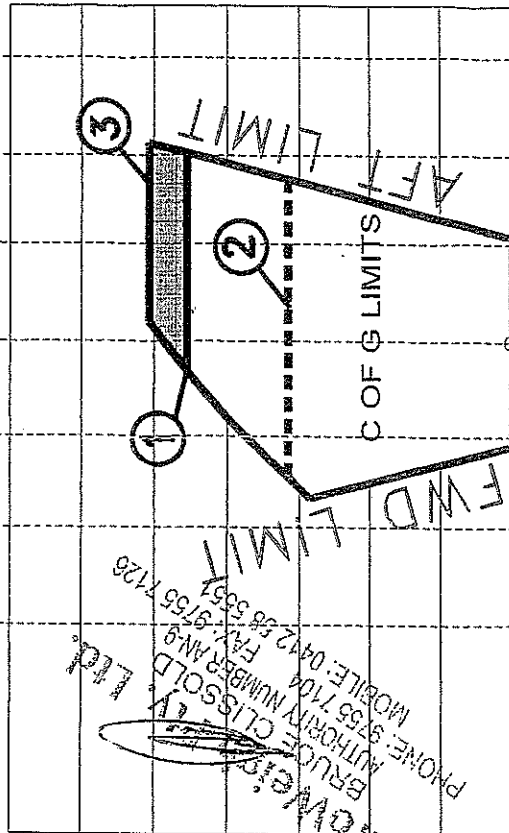


GROSS WEIGHT (kg)  
1200  
1100  
1000  
900  
800  
700

MAXIMUM TAKE-OFF WEIGHT

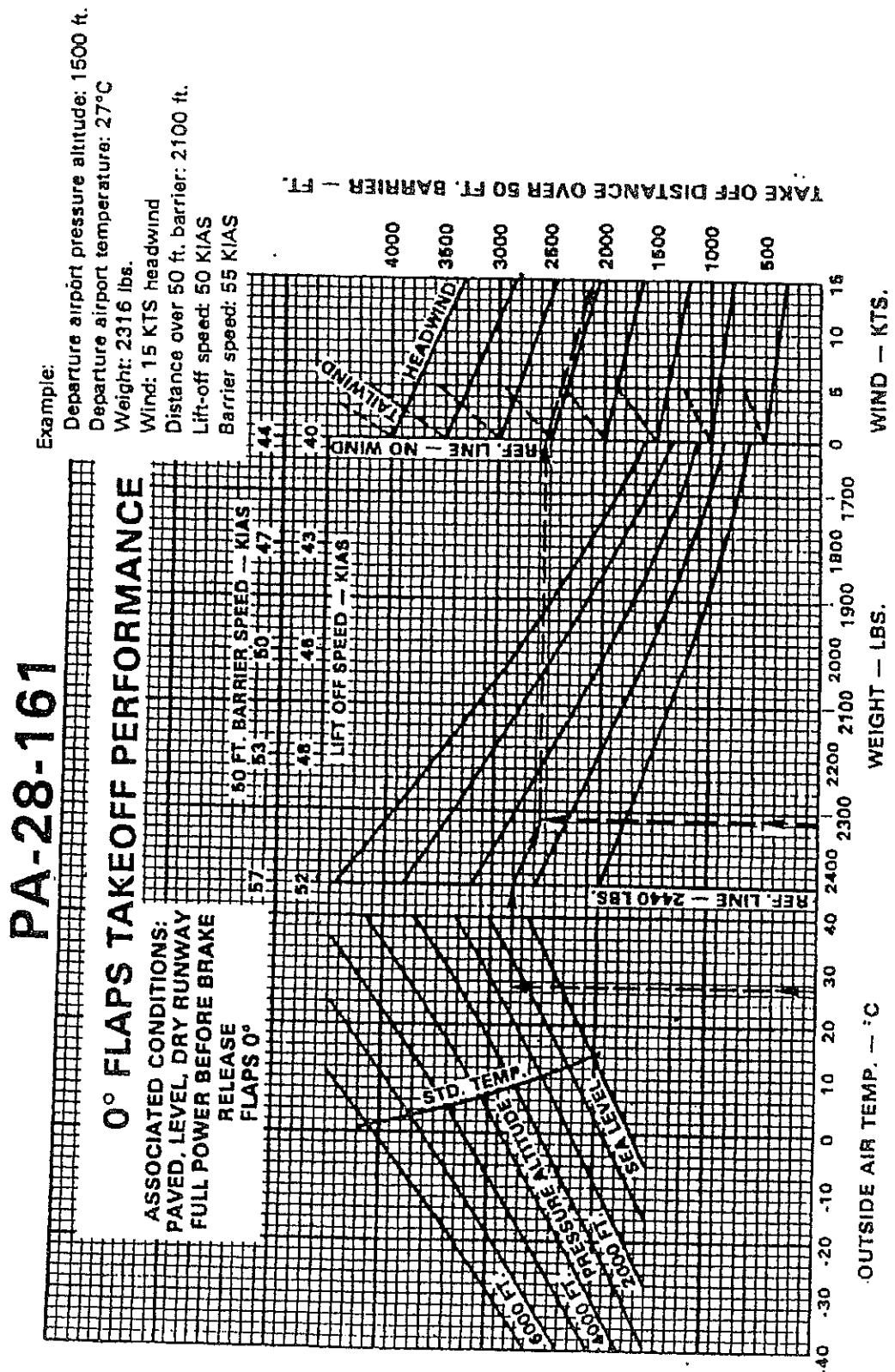
- ① NORMAL — 1055 Kg
- ② UTILITY — 916 Kg
- ③ NORMAL — 1107 Kg

|                          |                          |                          |       |
|--------------------------|--------------------------|--------------------------|-------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | BAGGS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |       |



③ OPERATION AT WEIGHTS IN EXCESS OF 1055 KG IS ONLY  
APPLICABLE TO AIRCRAFT SERIAL 28-8316001 AND UP  
OR ANY AIRCRAFT MODIFIED TO S.T.C. SA00397NY

## PA-28-161, WARRIOR III

SECTION 5  
PERFORMANCE

0° FLAPS TAKEOFF PERFORMANCE

Figure 5-9

PA-28-161

## LANDING DISTANCE

**ASSOCIATED CONDITIONS:  
POWER OFF, FLAPS - 40°**

PAVED LEVEL DRY RUNWAY, MAXIMUM BRAKING:

**Example:**

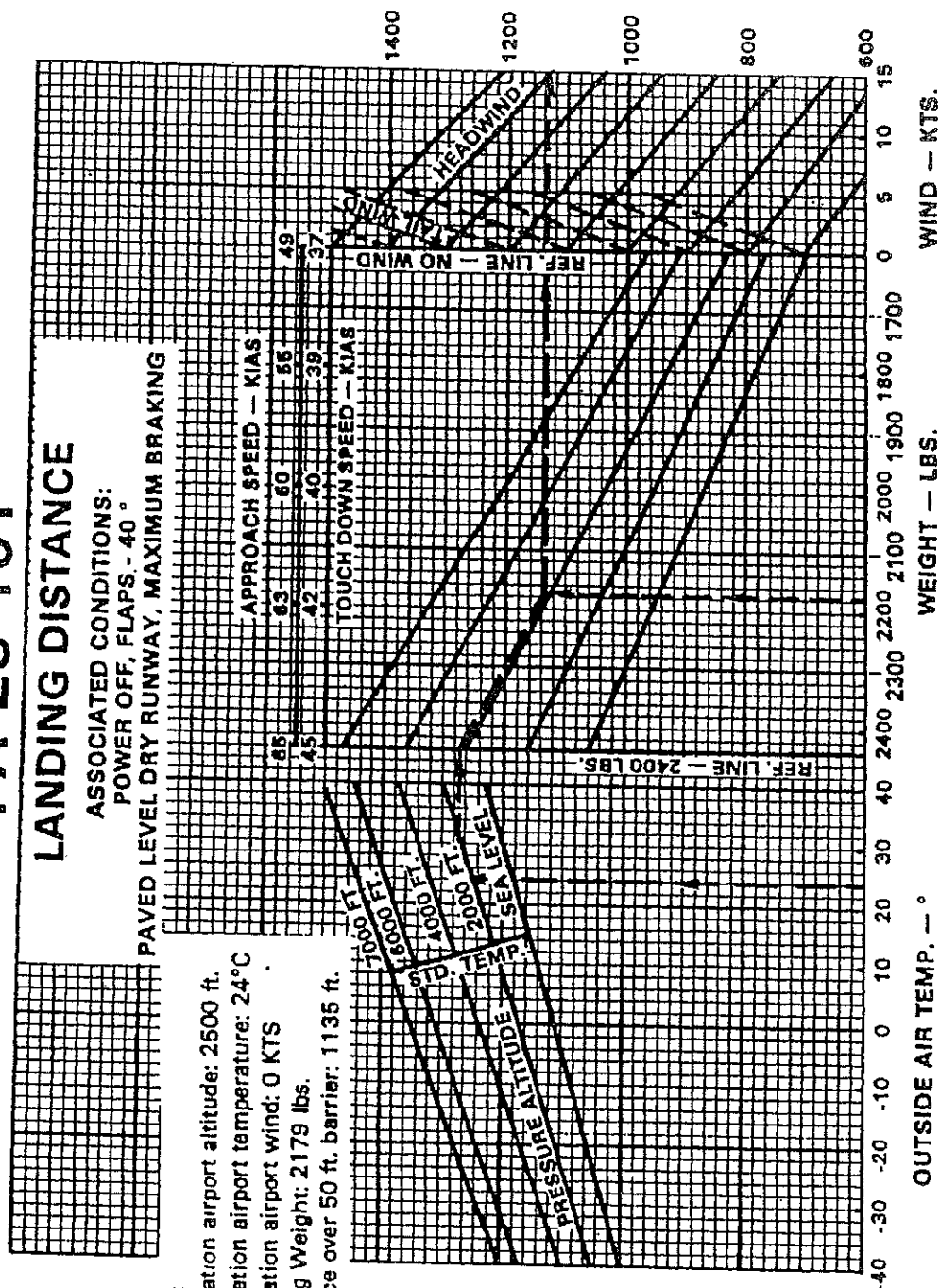
Destination airport altitude: 2500 ft.

Destination airport temperature: 24°C

Destination airport wind: 0 KTS

**Landing Weight: 2179 lbs.**

Distance over 50 ft. barrier: 1135 ft.



## LANDING DISTANCE

Figure 5-35

### MAXIMUM RATE OF CLIMB

#### ASSOCIATED CONDITIONS:

GROSS WEIGHT: 2440 lb.

POWER: FULL THROTTLE

MIXTURE: FULL RICH

FLAPS: UP

AIR SPEED: 79 KIAS

#### EXAMPLE

PRESSURE ALTITUDE: 5000 FT

OAT: 16° C (ISA + 11° C)

MAX RATE OF CLIMB: 374 FPM

### CLIMB PERFORMANCE

Figure 5-17

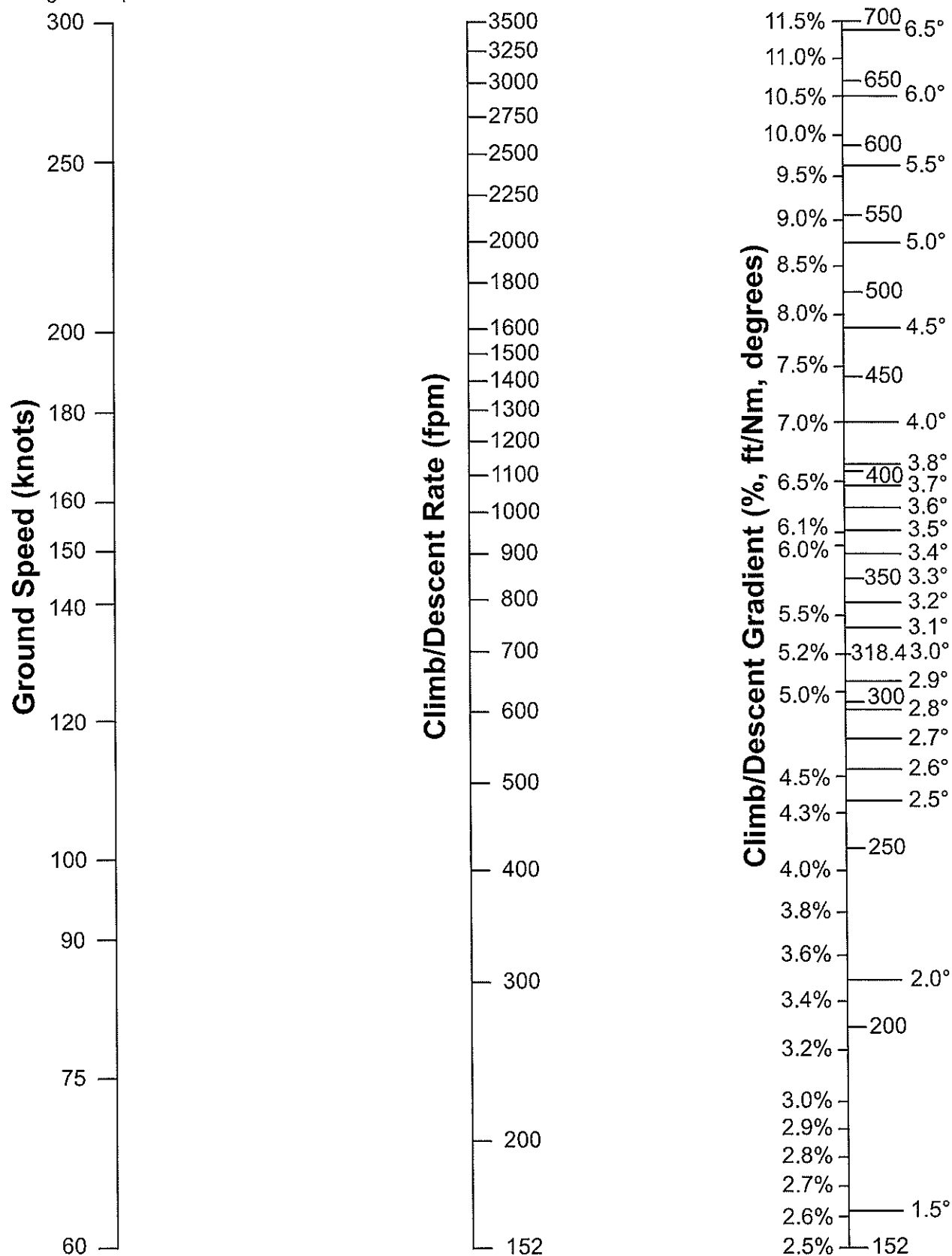
| PRESSURE<br>ALTITUDE<br>FEET | OUTSIDE AIR TEMPERATURE |     |             |             |             |
|------------------------------|-------------------------|-----|-------------|-------------|-------------|
|                              | ISA - 15° C             | ISA | ISA + 10° C | ISA + 20° C | ISA + 30° C |
| S.L.                         | 677                     | 644 | 624         | 604         | 585         |
| 1000                         | 628                     | 595 | 574         | 554         | 534         |
| 2000                         | 578                     | 545 | 524         | 504         | 485         |
| 3000                         | 528                     | 495 | 475         | 455         | 436         |
| 4000                         | 478                     | 446 | 425         | 405         | 386         |
| 5000                         | 429                     | 396 | 376         | 356         | 337         |
| 6000                         | 379                     | 346 | 326         | 306         | 287         |
| 7000                         | 330                     | 298 | 277         | 257         | 238         |
| 8000                         | 280                     | 248 | 227         | 207         | 188         |
| 9000                         | 231                     | 198 | 177         | 157         | 138         |
| 10000                        | 181                     | 149 | 128         | 108         | 89          |
| 11000                        | 132                     | 99  | 79          | 59          | 40          |
| 12000                        | 83                      | 49  | 29          | 9           | -10         |
| 13000                        | 33                      | 0   | -21         | -41         | -60         |

# GRADIENT RATE NOMOGRAPH

8 MAR 2012

DAP 2-1

The nomograph below gives the Climb/Descent rate for entering arguments of gradient ( %, ft/nm, Degrees ) and ground speed.



GINTA01-130

# Climb Gradients

## 1 Take off climb performance (20.7.4 / 7.1)

In the take-off configuration with landing gear extended, an aeroplane must have the ability to achieve a climb gradient of 6% at takeoff safety speed (TOSS), without ground effect, and with all engines operating at take-off power.

## 2 En-route climb performance (20.7.4 / 8.3)

Single-engined aeroplanes must have the ability to climb at a gradient of 4.5% at an airspeed not less than 1.2Vs at all heights up to 5000ft in standard atmospheric conditions with the engine operating at maximum continuous power, undercarriage (if retractable) and flaps retracted.

## 3 Landing Climb performance (20.7.4 / 9.1)

In the landing configuration with all engines operating at take-off power an aeroplane must have the ability to climb at a gradient of 3.2% in standard atmospheric conditions at a speed not exceeding 1.3Vs

### Formula

$$\text{RoC} = ((\text{GS} \times 6080) / 60) \times (\text{CG} / 100)$$

Or

$$\text{CG} = \frac{\text{ROC}}{(\text{G.S} \times 6080) / 60}$$