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Aviation Accident Investigator
AS-CEN

Date: July 31, 2024

Subject: CEN24FA200 Performance Information

Density Altitude

Using the METAR for the date and time of the accident the following density altitude estimate was calculated:

$PA \text{ (ft.)} = (29.92 - \text{Altimeter Setting (in/hg)}) \times 1000 + \text{Field Elevation (ft.)}$

$PA \text{ (ft.)} = (29.92 - 29.93) \times 1000 + 600$

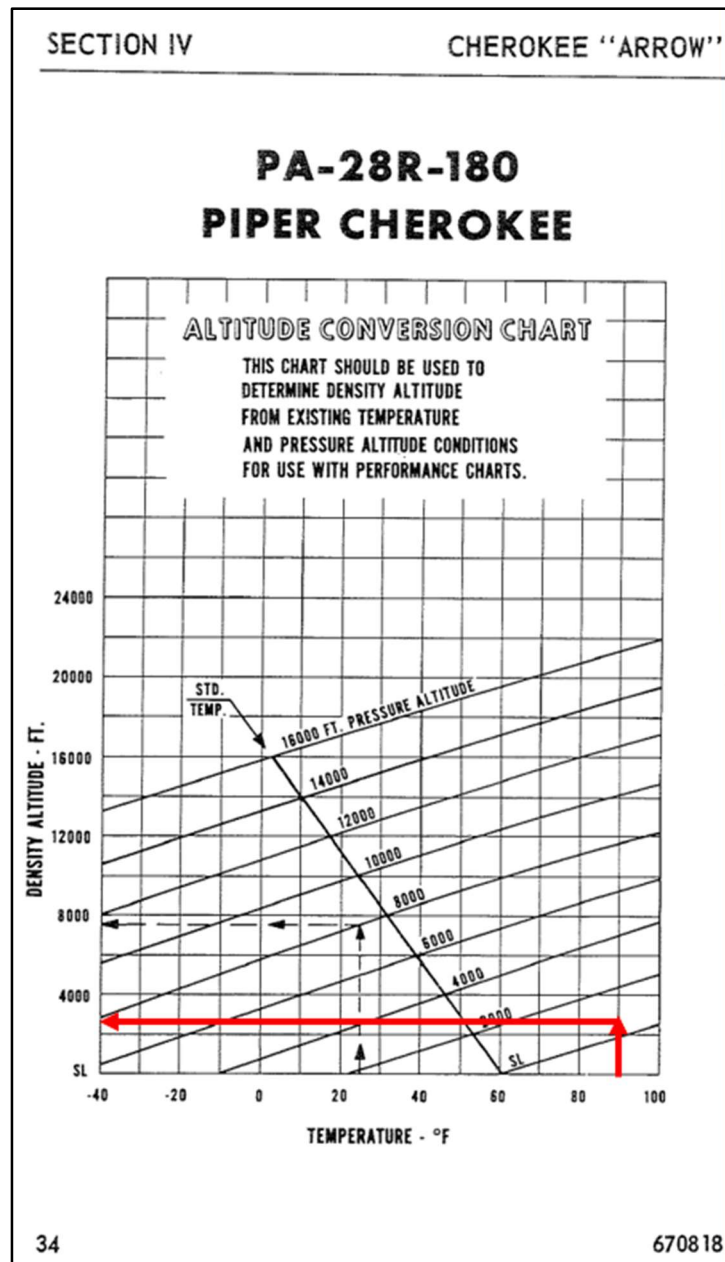
PA (ft.) = 590 ft.

$DA \text{ (ft.)} = \text{Pressure Altitude (ft.)} + 118.8 \times (\text{Outside Air Temperature (}^{\circ}\text{C)} - \text{Standard (ISA) Temperature (}^{\circ}\text{C)})$

$DA \text{ (ft.)} = 590 + 118.8 \times (32 - 13.82)$

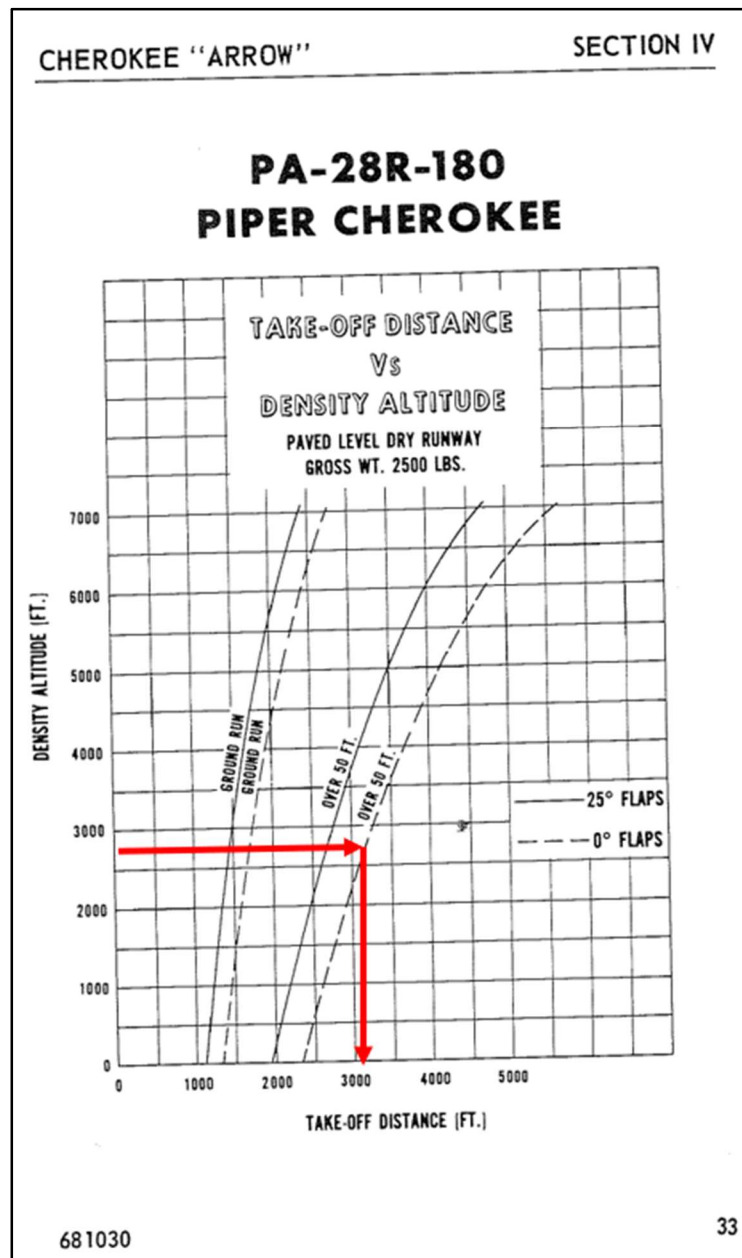
DA (ft.) = 2,750 ft.

Using the chart in the Piper Owner's Handbook produces a similar density altitude estimate:



Take-Off Distance

Runway 17/35 at Taylor Municipal Airport (T74), Taylor, Texas, has a 4,000 foot long by 75 foot wide runway. Using the density altitude estimate previously calculated and the performance chart from the Piper Owner's Manual for the accident airplane, the predicted takeoff distance was about 3,100 feet.



Aircraft Take-Off Weight

The maximum allowable gross weight of the airplane is 2,150 pounds. The pilot provided the following loading information.

Aircraft Empty Weight	1380
Fuel (30 gallons x 6 lbs / gal = 180 lbs)	180
Pilot	230
Front Seat Passenger	210
Back Seat Passenger	140
TOTAL ACFT WEIGHT	2,140