

Smith Maja

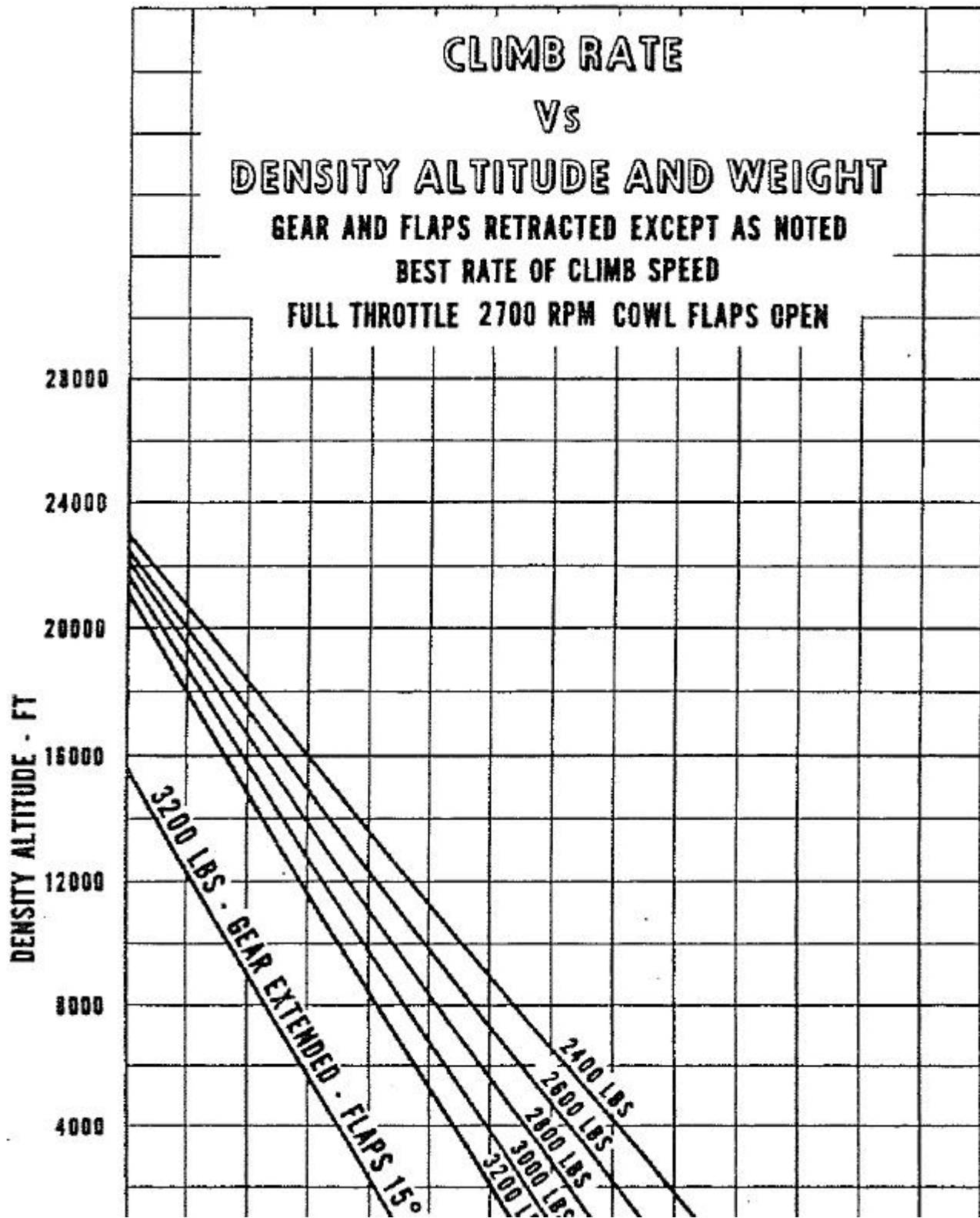
From: Whitaker, Kathryn [REDACTED] >
Sent: Wednesday, January 15, 2020 6:59 AM
To: Smith Maja
Subject: Re: W&B from 1973

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According to the AOH, with flaps 15° and gear extended, about 700 fpm is expected. When cleanly configured, about 1100 fpm is expected.

Both of these calculations are based on a density altitude of 3,378 ft and 3,200 lbs aircraft weight. I can't extrapolate how much the aircraft's actual weight and balance at the time of the accident would have affected these figures.

PA-24-260 COMANCHE C



Kathryn Whitaker

Air Safety Investigator

Piper Aircraft Inc.

M: ([REDACTED])
[REDACTED]

From: Smith Maja [REDACTED] >
Sent: Tuesday, January 14, 2020 6:22 PM
To: Whitaker, Kathryn
Subject: RE: W&B from 1973

From: Whitaker, Kathryn < [REDACTED] >
Sent: Tuesday, January 14, 2020 2:22 PM
To: Smith Maja < [REDACTED] >
Subject: Re: W&B from 1973

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Maja,

Per the blanks below:

- Fuel load at landing at SDL is calculated to be 63.4 gal.
- Unusable fuel (totaling 4 gallons) *is* included in the basic empty weight of the aircraft.
- Usable fuel capacity is 56 in mains and 30 in aux, totaling 86 usable
- Fuel consumption is calculated to be 22.5 gallons, based on 75% power setting inflight (14.1 GPH)
- Total fuel weight at takeoff from SDL is calculated to be 380.6 lbs

	Mains, Gal @ Dept	Climb Time	Climb Burn	Descent Time	Descent Burn
14.1 GPH	56	0.4	5.64	0.32	
	Aux, Gal @ Dept	Cruise Time	Cruise Burn		
	30	0.88	12.408		

GENERAL WEIGHT AND BALANCE CHART

For Reference see the aircraft POH and FAA -H-8083-1A

ITEM	WT. (LBS.)	ARM (IN.)	MOMENT (IN. LBS)
BASIC AIRPLANE	2007.0	87.22	1973 W&B Data
PILOT'S SEAT	200.0	84.80	plus 15.0 carryon
COPILOT'S SEAT	175.0	84.80	plus 15.0 carryon
SEAT NO. 3	190.0	120.50	plus 15.0 carryon
SEAT NO. 4	130.0	120.50	plus 15.0 carryon
SEAT NO. 5	137.5	148.00	plus 15.0 carryon
SEAT NO. 6	115.0	148.00	plus 15.0 carryon
SEAT NO. 7			
SEAT NO. 8			
FUEL GAL. (MAIN)	275.1	90.00	
FUEL GAL. (AUX)	105.6	95.00	
BAGGAGE FORWARD			
BAGGAGE AFT			
TOTAL WEIGHT	3335.1	CG	95.22
		TOTAL MOMENT	333510

Aircraft Max. Wt: 3200.0

CG Range: +80.5 to +93.0

Occupant weights include 15 pounds of carryon bags.

W&B Data taken from 1973 Logbook Entry.

the flight from VGT to SDL. If the airplane departed VGT fueled to its capacity of ____ (90 or 86) gallons, based on an estimated fuel consumption of _____, its fuel weight at take off at SDL would be ____ Using the passenger weights, along with an estimated fuel at the time of initial taxi, the airplane would have weighed about 3,362.5 and its center of gravity would have been 95.16 inches aft of datum. These values were 162.5 lbs above the airplane's maximum gross weight and 2.16 inch aft of the C.G.

From: Whitaker, Kathryn [REDACTED] >
Sent: Thursday, January 2, 2020 3:18 PM
To: Smith Maja [REDACTED] >
Subject: Re: W&B from 1973

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Maja,

Just some quick numbers-

Based on the airspeed shown on FlightAware, I think it's likely this aircraft was operating at 75% power (or maybe a touch more,) giving us a total enroute fuel burn of about 22.6 gallons, or 135.4 lbs.

If we assume the pilot was following the POH and was switched to a main tank during climb and descent, he would have burned just over 10 gallons in the mains and about 12.4 gallons in the aux tanks:

	Mains, Gal @ Dept	Climb Time	Climb Burn	Descent Time	Descent Burn
14.1 GPH	60	0.4	5.64	0.32	4
	Aux, Gal @ Dept	Cruise Time	Cruise Burn		
	30	0.88	12.408		

So plugging this into my overall weight and balance spreadsheet gives us this:

GENERAL WEIGHT AND BALANCE CHART

For Reference see the aircraft POH and FAA -H-8083-1A

ITEM	WT. (LBS.)	ARM (IN.)	MOMENT (IN. LBS)
BASIC AIRPLANE	2007.0	87.22	1973 W&B Data 1
PILOT'S SEAT	200.0	84.80	plus 15.0 carryon
COPILOT'S SEAT	175.0	84.80	plus 15.0 carryon
SEAT NO. 3	190.0	120.50	plus 15.0 carryon
SEAT NO. 4	130.0	120.50	plus 15.0 carryon
SEAT NO. 5	148.0	148.00	plus 15.0 carryon
SEAT NO. 6	115.0	148.00	plus 15.0 carryon
SEAT NO. 7			
SEAT NO. 8			
FUEL GAL. (MAIN)	299.1	90.00	16.0 gal.
FUEL GAL. (AUX)	105.6	95.00	52.0 gal.
BAGGAGE FORWARD			
BAGGAGE AFT			
TOTAL WEIGHT	3369.6	CG 95.35	TOTAL MOMENT 3

Aircraft Max. Wt: 3200.0
 CG Range: +80.5 to +93.0
 Occupant weights include 15 pounds of carryon bags.
 W&B Data taken from 1973 Logbook Entry

Hopefully this makes sense!! Please let me know if you require anything else!

Kathryn Whitaker

Air Safety Investigator

Piper Aircraft Inc.

M: [REDACTED]
 E: [REDACTED]

From: Smith Maja [REDACTED]
Sent: Thursday, January 2, 2020 1:58 PM
To: Whitaker, Kathryn
Subject: FW: W&B from 1973

From: Charles Little [REDACTED] >
Sent: Thursday, April 26, 2018 3:28 PM
To: Smith Maja <[REDACTED]>