



MEMORANDUM FOR RECORD

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Air Safety Investigator
Eastern Region Aviation

January 26, 2019

Subject: ERA17MA316

On January 26, 2019 Air Methods provided the following additional information clarifying the weight and balance estimates, and performance information:

1. From the Wt and Balance
 - a. A/C Empty Weight on Info tab shows: 2453kg
 - b. Crew weights add: 287kg
 - c. Med Equipment add: 88kg
 - d. Supply Tank Fuel add: 100kg
 - e. Basic Operating Weight total: 2928kg
2. From the loading tab:
 - a. The pilot would go to the main tank fuel (aircraft would have displayed gallons)
 - i. Based on the pilot call and company procedure "2hrs fuel" would be the total fuel on the aircraft – Main tanks + Supply fuel; providing time until burn out.
 - ii. 75-80 gallons an hour is reasonable to conservative for the cruise consumption – and is used by our pilots
 - b. So likely Jeff had around 130-140 gallons in the main tank (395-425kg main tank fuel + 100kg supply tanks = 525kg fuel max)
 - c. Add in a 90kg patient and the Gross weight at takeoff would be: **3413 to 3443kg**
3. Performance
 - a. OEI performance: At MGW 3443kg using MCP and flying at 65KIAS(V_y) AIRBUS RFM Section 5.1 FIG. 5-46 shows a climb at approximately 200fpm is possible at 1000ft PA and 22 degrees C.
 - b. 45KIAS(V_{TOSS}) and using 2.5 minute OEI power with the same weight/temp/alt shows the ability to climb at approximately 510fpm. (RFM section 5.1 Fig 5-41).

Item 3(a) appears to have a typo, the climb rate on fig 5-46 using these conditions is about 300fpm

-End-

Date		Flight Release		BK117-C2 (EC145)	
3-Feb-20	2013142			BASE:	SMFNC
Registration:		N146DU	Configuration:	Duals Out	
		WEIGHT (kg)	ARM (mm)	MOMENT(kgmm)	
Aircraft		2,453	4,613	11,316,338	
PILOT	Jeffrey Burke	95	2,412	229,714	
CO-PILOT	Empty	0	2,412	0	
Left RF	Harrison Kris	100	3,219	321,900	
Right RF	Empty	0	2,965	0	
FWD F	Sollinger Crystal	92	4,700	432,400	
N/A	Empty	0	0	0	
Medical Equipment		88	4254.607474	373,980	
Other 1	NITRIC(17.5)	0	4,522	0	
Other 2	ECMO (36.1)	0	5,107	0	
Other 3	Baby Pod 87Kg	0	4,522	0	
Other 4		0	0	0	
Special 1	Isolette	OUT	0	0	
Special 2	Balloon Pmp	2 OUT	0	0	
Sub-Total		2,828	4,482	12,674,333	
Reference Only for Supply Fuel Calc		100	3,579	357,900	
***** Empty Weight Totals		2,928	4451	13,032,233	
Stretcher Station			4,522		
Max Certified Weight		3,585			
NO PATIENT CONFIG (OPTIONAL)					
Seat	Name	Weight	Arm	Moment	
COPILLOT	Sollinger Crystal	92	2,412	221,904	
Left RF	Harrison Kris	100	3,219	321,900	
Right RF	Empty	0	2,965	0	
FWD F	Empty	0	4,700	0	
N/A	Empty	0	0	0	
Sub-Total W/ Copilot (supply fuel calc on		Wt 2828	Arm 4407	Mom 12,463,837	

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Figure 1 - Weight and Balance Spreadsheet Page 1

This is the weight of the helicopter, crew, and all equipment in kilograms - not including fuel or patient weight.

RATE OF CLIMB
1 X TURBOMECA ARRIEL 1E2

MAXIMUM CONTINUOUS POWER

$V_Y = 65$ KIAS

BLEED AIR CONSUMERS OFF

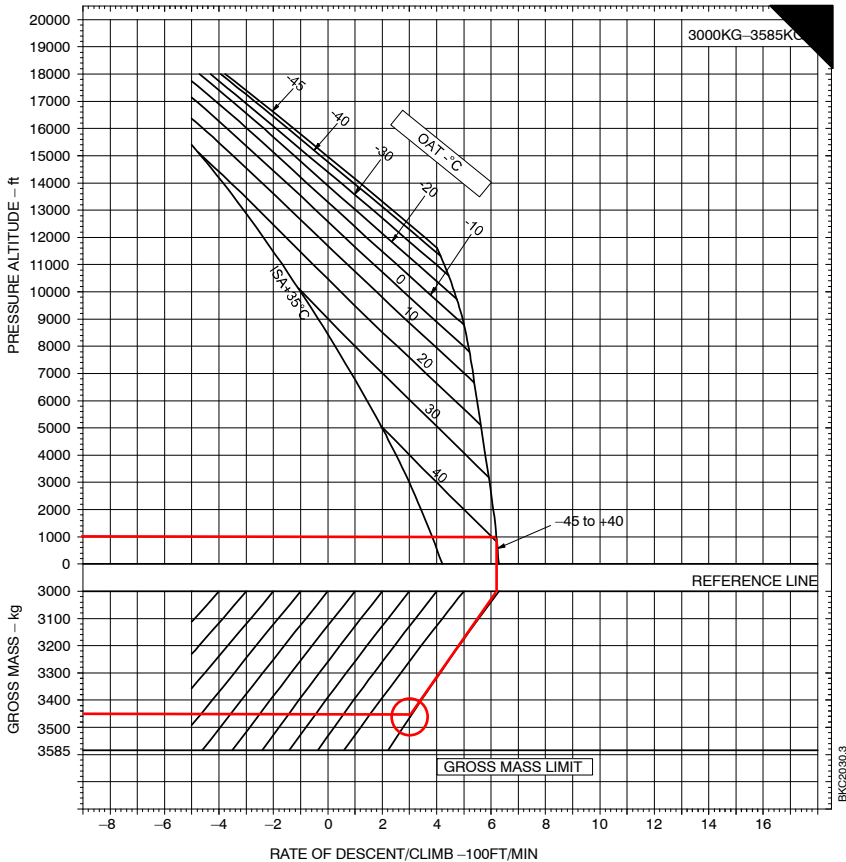


Fig. 5-46 Rate of climb (OEI, MCP, 3000 kg to 3585 kg, bleed air off)

RATE OF CLIMB 1 X TURBOMECA ARRIEL 1E2

2.5 MIN. POWER

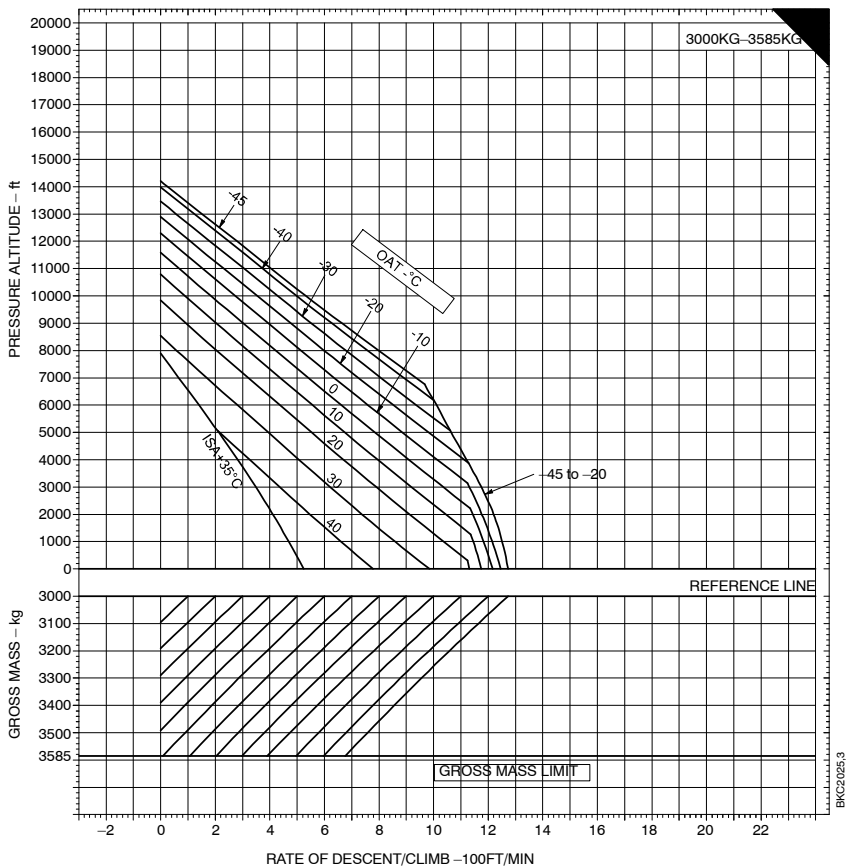
 $V_{TOSS} = 45 \text{ KIAS}$
 BLEED AIR CONSUMERS OFF


Fig. 5-41 Rate of climb (OEI, 2.5 minute power, 3000 kg to 3585 kg)