

Subj: AM631 CAMT #1

PI: Campbell / Jay

IO: AT Landwehr

Chief Flight Engineer: Simon

Date: 18 APR 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	91	29:39 - 30:35
14K BL	none	81	38:30 - 41:06

Bike Start	none		
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Sub 77% Start	none		
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Sub End	none		
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Sub 85%	none		
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IO 77% Start	none		
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IO End	none		
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IO 85%	none		
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LTA at 55	none		
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LTA at 65	none		
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LTA at 75	none		
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LTA at 85	none		
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Ascend to 30K	none		
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30K Arrive and don PAX	3.24		
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Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	79%	
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40k Arrive	"		
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40k Subj achieves 85% SpO2	"		
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40k 3.1 Step	3.10	96%	
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Start of descent from 40K	2.55	99	
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35k 1.9 Step	1.90	99	
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35k 1.28 Step	1.28	98	
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35k 0.64 Step	0.64	88	
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Descending from 35K	2.00	99	1m (1)
30k 1.50 Step	1.50	99	2m (1)
30k 1.0 Step	1.00	97	5m (3)
30k 0.5 Step	0.50	81	11m (6)

Descending from 30K and 1.50		99	1m (1)
25k 1.13 Step		99	2m (1)
25k 0.75 Step		94	8m (5)
25k 0.37 Step		84	14m (6)

Descending from 25K and 1.17		99	
20k 0.88 Step		99	
20k 0.59 Step		97	
20k 0.30 Step		86	

Descending from 20K and 0.83		98	
18.5k 0.62 Step		95	
18.5k 0.42 Step		90	
18.5k 0.21 Step		83	

Descending from 18.5K and 0.50		96	3m (3)
15k 0.38 Step		92	
15k 0.25 Step		88	
15k 0.13 Step		83	

Descending from 15K and 0.25		93	3m
12k 0.190 Step		91	6m (3)
12k 0.13 Step		89	10m (4)
12k 0.0 Step		86	13m (3)

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

Subj: AM631^{#2}
 PI: CAMPBELL / JAY
 IO: STEPHANIE BALDERAMA
 Chief Flight Engineer: SIMSON
 Date: 25 APR 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	92	5:40	HandR data not reporting started @ about 5K'
14K BL	none	81	8:00	✓

GL 10:11:30

10:18 descent start

Bike Start none 13:30 total time ~ avg 90%

Sub 77% Start	none		
Sub End	none		
Sub 85%	none		

IO 77% Start	none		
IO End	none		
IO 85%	none		

LTA at 55	none		
LTA at 65	none		
LTA at 75	none		
LTA at 85	none		

Ascend to 30K 12:50:55 none

30K Arrive and don PAX	3.24		
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Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	76	
40k Arrive	"		
40k Subj achieves 85% SpO2	"		
40k 3.1 Step	3.10	91	5 min

Start of descent from 40K	2.55	96	2:30 min
35k 1.9 Step	1.90	95	2:30 min
35k 1.28 Step	1.28	85	2:00 min
35k 0.64 Step	0.64	70-74	3:00 min

DEEP breath @ descent to drop SpO2 to 66%

Reassessed in Excel 8/20/25
 72 before the 1st descent

②

Descending from 35K	2.00	96.8	3:30 min	
30k 1.50 Step	1.50	95	3 min	
30k 1.0 Step	1.00	90	3 min	
30k 0.5 Step	0.50	69-75		Dropped below 70

REASSURED EXCEL →

↑ (10)

Descending from 30K and 1.50		98	1 min	
25k 1.13 Step		97	1 min	
25k 0.75 Step		85	~7 min	
25k 0.37 Step		69-77		Variable breathing at 70% SpO ₂

REASSURED EXCEL 8/20/2015 ↑ (11)

Descending from 25K and 1.17		100 99	2m	
20k 0.88 Step		98	2m	
20k 0.59 Step		97	2m	
20k 0.30 Step		88	~6m	

Descending from 20K and 0.83		99	1m	
18.5k 0.62 Step		97	3m	
18.5k 0.42 Step		95	3m	breathing large breaths
18.5k 0.21 Step		85	7m	~

SpO₂ VMP

Descending from 18.5K and 0.50		92	~1:30 min	Ported to ~98 at end
15k 0.38 Step		96	?	difficult w variable breathing and on
15k 0.25 Step		93		
15k 0.13 Step		87		Big breath w/ 1 min remaining

Difficult calls

Descending from 15K and 0.25		88	4m	Not stable - big breath at SpO ₂
12k 0.190 Step		90	4m	Not stable
12k 0.13 Step		88	3m	
12k 0.0 Step		xxx	xxx	

Difficult calls

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

EXCEL ANALYSIS
8/20/25

Futile, did not trap

Chickadee
confront this
in an out

* B₁ breath @
20k = drop in
SpO₂ w/ 0.30
NLM
... overbreathing
bag

* B₁ breath at 12k w/ 0.19 NLM
= pup in SpO₂ from 89+90

Subj: AM 631 Cam. #3
 PI: Campbell / Jay
 IO: Lemuel Kenney
 Chief Flight Engineer: FR / Roger
 Date: 28 APR 2025
 OFOS sequence and LabVIEW log entries PAX oxygen NLPM Subj SpO2 Data time Notes

breather
 pause
 one snail
 " large
 " small
 pause

Add next pass-fit

10K BL	92	none	87	6 min	Variable depth breathing
14K BL		none	80	6 min	"
Bike Start		none		✓	Near end of assessment Subj ↑ was told to "normalize" breathing
Sub 77% Start		none		✓	D.F. entry priming to 138 bpm
Sub End		none		✓	once achieved Subj held
Sub 85%		none		✓	~ 148 avg. 152 bpm ✓
IO 77% Start		none		✓	IO hit 165 bpm quickly
IO End		none		✓	maintained 165
IO 85%		none		✓	171 bpm ✓
LTA at 55		none		✓	
LTA at 65		none		✓	
LTA at 75		none		✓	
LTA at 85		none		✓	SpO2, Expansion scope placed & plugged @ 98 min
Ascend to 30K		none			
30K Arrive and don PAX	3.24				

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	83			Control deck Not 10s + 5s - did not follow protocol
40k Arrive	"				
40k Subj achieves 85% SpO2	"				
40K 3.1 Step	3.10	91			
Start of descent from 40K	2.55	95			
35k 1.9 Step	1.90	94			
35k 1.28 Step	1.28	92			
35k 0.64 Step	0.64	(80)			Extremely variable SpO2

check + 38k

Analyze Fault Int.

moved to 24th early

79% was lowest value before

		97		
Descending from 35K	2.00	92	1:40	
30k 1.50 Step	1.50	97	2m	
30k 1.0 Step	1.00	91 ✓		Big breather
30k 0.5 Step	0.50	80 ✓	3m	Stable. Dropped to 68% SpO2 w/ big breath.
Descending from 30K and 1.50		96	2:45	
25k 1.13 Step	85 → 97	94	+5min	Big breather caused ↓ 94 & 90
25k 0.75 Step		90		Bag watcher. METERSOL
25k 0.37 Step		82		breather. Fall ↑ ASLEEP
Descending from 25K and 1.17		94	1:23	
20k 0.88 Step	super stable →	94 ✓	↓ ~3	AF asked for good rhythm
20k 0.59 Step		93	10m	to get it -
20k 0.30 Step	✓	88		
Descending from 20K and 0.83		95	3:14	
18.5k 0.62 Step		95	3:00	
18.5k 0.42 Step		92		Breathing erratic - sleep
18.5k 0.21 Step		89		
Descending from 18.5K and 0.50		94	↓	
15k 0.38 Step		94	↓	Sleep +/- HR 60 → 80
15k 0.25 Step		94	↓	
15k 0.13 Step		93	~16m	
Descending from 15K and 0.25		95	~5	
12k 0.190 Step		96	~3	
12k 0.13 Step	95 -	95	5m	~5 minutes
12k 0.0 Step		95		

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

Q

4th Subj

Subj: AM 631 CAMI #5

PI: CAMPBELL / JAY

IO: LAMAR KENNEY

Chief Flight Engineer: BRAD / AJ LANDWEHR

Date: 12 MAY 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	97	10 min	Subj deep and quicken breaths
14K BL	none	97	10 min	... ↑ BL result
Bike Start	none	85		4.7 85% on descent from 14k
Sub 77% Start	none			
Sub End	none			
Sub 85%	none			
IO 77% Start	none			
IO End	none			
IO 85%	none			
LTA at 55	none			
LTA at 65	none			
LTA at 75	none			
LTA at 85	none			
Ascend to 30K	none			
30K Arrive and don PAX	3.24			

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	85?		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	98	5 min	
Start of descent from 40K	35k' 2.55	100	1 min	
35k 1.9 Step	1.90	100	1 min	
35k 1.28 Step	1.28	99	3 min	
35k 0.64 Step	0.64	88	5 min	one big breath @ 4 min, SpO2

86

Descending from 35K	30k'	2.00	99	1.5m	
30k 1.50 Step		1.50	99	2m	
30k 1.0 Step		1.00	91	5m	
30k 0.5 Step		0.50	79	3m	

Descending from 30K and 1.50	25k'		98	2m	
25k 1.13 Step			96	2m	
25k 0.75 Step	TRANSFERRED EXCEL 8/20		92mgs	5m	92mgs 95 oscillating
25k 0.37 Step			86	6m	? Big breath = ↑ SpO2 77 to 89% then 80

Descending from 25K and 1.17	20k'		98	2m	long paused in breath
20k 0.88 Step			98	3m	
20k 0.59 Step			93	3m	
20k 0.30 Step			85	4m	

Descending from 20K and 0.83			98	3m	
18.5k 0.62 Step			98	2m	
18.5k 0.42 Step	3 min avg. LmbVFO ✓		96	5m	
18.5k 0.21 Step			85	5m	Area SpO2 variable

Descending from 18.5K and 0.50			95	5m	
15k 0.38 Step			95	3m	
15k 0.25 Step			90	4m	
15k 0.13 Step			85	3m	

Descending from 15K and 0.25	12k'		92	4m	
12k 0.190 Step			90	3m	
12k 0.13 Step			88	3m	
12k 0.0 Step			85	5m	

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

TRAC @ 10k' on way down. → 9850' → 9900'

@ 5min ✓ SpO2 89% 1" 3" 5" Avg.

@ 10min SpO2 88% 1 3 5
89.4 89.28 88.88

Subj: Am 63, Cam, #6

PI: Campbell

IO: Sawyer, Pzhkonu

Chief Flight Engineer: Jimmy Sherrin, JR Brewer, Eric Simson

Date: 16 May 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	09:09:45	none	91	10m	last min stable SpO2 @ 91%
14K BL		none @ 8m	(85) 86	10m	large breath = 10 SpO2 2 at 8m
Chest Strap indicated breathing cleaner post 8m @ 10k' on 88% descent					
Bike Start		none			
✓ Sub 77% Start		none	11:31 ↑		
✓ Sub End		none			
✓ Sub 85%	green lt.	none			✓ @ END of EXERCISE ... 10m pt.
✓ IO 77% Start		none	11:27 ↑		
✓ IO End		none			
✓ IO 85%	green lt.	none			✓ @ END of EXERCISE ... 10m pt.
LTA at 55		none	10:41:15		
LTA at 65		none	51		
LTA at 75		none	01		
LTA at 85		none	11:11:30		
95			11:21:30		
Ascend to 30K	12:16:50	none	12:21:40	ascend	
30K Arrive and don PAX	3.24				

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	83		
40k Arrive	"			
40k Subj achieves 85% SpO2	"		✓	
40k 3.1 Step	Procedural Problems	3.10	86	92% after Equal review
Start of descent from 40K	2.55	95 ✓	2m	
35k 1.9 Step	1.90	93 ✓	4m (2)	
35k 1.28 Step	1.28	88	8m (4)	
35k 0.64 Step	0.64	82	11m (3)	

At least
3 to 4 min per step at 30k

Descending from 35K	2.00	98 ✓	3m	
30k 1.50 Step	1.50	98 ✓	5m (2)	
30k 1.0 Step	1.00	92	9m (4)	
30k 0.5 Step	0.50	77	15m (6)	

Descending from 30K and 1.50		98	4m	Ar. air mask/helmet removed for 2m
25k 1.13 Step		98	8m (4)	
25k 0.75 Step		94	12m (4)	
25k 0.37 Step	(77)	88 77	19m (7)	

Descending from 25K and 1.17		98	3m	
20k 0.88 Step		98	8m (4)	
20k 0.59 Step		92	13m (6)	Movement, talking extended
20k 0.30 Step		84	18m (5)	needed 2 dwells @ 0.5s

Descending from 20K and 0.83		96	4m	
18.5k 0.62 Step		95	8m (4)	
18.5k 0.42 Step		90	11m (3)	
18.5k 0.21 Step		82	16m (5)	

Descending from 18.5K and 0.50		94	3m	
15k 0.38 Step		92	7m (4)	
15k 0.25 Step		89	11m (4)	
15k 0.13 Step		84	15m (4)	

Descending from 15K and 0.25		92	4m	
12k 0.190 Step		89	8m (4)	
12k 0.13 Step		89	11m (3)	
12k 0.0 Step		84	16m (5)	~~~~~

Descending from 12K none, but PAX stays on for at least 5 min post-landing

LC 2:42:42 PM

2:54:30 100% oxygen LPM

2:59:30 done and Subj left chamber

2:59:30 done and Subj left chamber

2:59:30 done and Subj left chamber

Subj: AM631 Camo #7

PI: Campbell / Jay

IO: AST Landing

Chief Flight Engineer: E. Simon

Date: 19 MAY 2025

Filed

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	90% <u>6m</u>		last minute of landing
14K BL	none	83% <u>7m</u>		breathing somewhat variable

Bike Start	none		9:50	
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Sub 77% Start	none			
Sub End	none			
Sub 85%	none			

IO 77% Start	none			
IO End	none			
IO 85%	none			

LTA at 55	none			
LTA at 65	none			
LTA at 75	none			
LTA at 85	none			

Ascend to 30K	none			
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30K Arrive and don PAX	3.24		12:32	
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Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend <u>45k peak</u> and Descend to 40k	3.24	80		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	91	5m	

Start of descent from 40K	2.55	96	3m	
35k 1.9 Step	1.90	96	6m (3)	
35k 1.28 Step	1.28	91	10m (4)	
35k 0.64 Step	0.64	65	14m (4)	not stable

Descending from 35K	2.00	97	3m	
30k 1.50 Step	1.50	95	6m(3)	
30k 1.0 Step	1.00	88	11m(5)	Variable breathing, ↑ HR
30k 0.5 Step	0.50	75	15m(4)	HR ↑ 100, Breath R ↑ 17

110

Descending from 30K and 1.50	wasted 2m max/hold	97	5m(3)	
25k 1.13 Step		93	9m(4)	
25k 0.75 Step		86	14.5m(6)	Variable breathing, ↓ HR
25k 0.37 Step		76	19m(4)	

Descending from 25K and 1.17		94	3m	
20k 0.88 Step		94	6m(3)	
20k 0.59 Step		91	10m(4)	
20k 0.30 Step		84 ✓	14m(4)	I may have conducted this 2x & ok

Descending from 20K and 0.83		93	4m	
18.5k 0.62 Step		90	8m(4)	
18.5k 0.42 Step		89	13m(5)	
18.5k 0.21 Step		85	17m(4)	17:42 @ Alt.

Descending from 18.5K and 0.50		92	3m	
15k 0.38 Step		91	9m(6)	Sleeping. Several breath holds.
15k 0.25 Step		91	13m(4)	
15k 0.13 Step		90	16m(3)	

Descending from 15K and 0.25		91	4m	
12k 0.190 Step		92	7m(3)	
12k 0.13 Step		91	11m(4)	
12k 0.0 Step		87	17m(6)	

Descending from 12K none, but PAX stays on for at least 5 min post-landing

Alt 2:52:25

* Large breath at 12k, 7:00 in = ↑ SpO₂ to 95%

Def. cal Exp. Scripts
to pneumotach data.
For this Subj.

Subj: AM631 Cam #9

PI: Campbell

IO:

Chief Flight Engineer:

Date: 2025 0530

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL 10660	none	91	10m	✓
14K BL 14070 - 14050	none	82	10m	At VERY END of 10m period

9:55 Bike Start none ✓ Subj would not breathe normally until end of 10m period

Sub 77% Start	none	✓	
Sub End	none	✓	
Sub 85%	none	✓	

IO 77% Start	none	✓	
IO End	none	✓	
IO 85%	none	✓	

LTA at 55 10:50	none	✓	
LTA at 65 "	none	✓	
LTA at 75 11:20	none	✓	
LTA at 85 11:20	none	✓	

12:25 Ascend to 30K 12:27.00 none

30K Arrive and don PAX	3.24	100	
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Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	Low 81%	
40k Arrive	"	✓	
40k Subj achieves 85% SpO2	"		
40k 3.1 Step	3.10	95%	5m

Start of descent from 40K	2.55	98	1.5m
35k 1.9 Step	1.90	98	3.5(2)
35k 1.28 Step	1.28	98	7.5(4)
35k 0.64 Step	0.64	97	13(5.5)

Descending from 35K	2.00	99	2m (2)
30k 1.50 Step	1.50	99	4m (2)
30k 1.0 Step	1.00	99	7m (3)
30k 0.5 Step	0.50	98	15m (8)

Descending from 30K and 1.50		99	3m (3)
25k 1.13 Step		98	5m (2)
25k 0.75 Step		97	8m (3)
25k 0.37 Step		89	14m (6)

Descending from 25K and 1.17		99	2m (2)
20k 0.88 Step		98	4m (2)
20k 0.59 Step		97	8m (4)
20k 0.30 Step		91	12m (4)

Descending from 20K and 0.83		98	2m (2)
18.5k 0.62 Step		97	4m (2)
18.5k 0.42 Step		95	7m (3)
18.5k 0.21 Step		88	13m (6)

18.5k 0.5 step

78 18m (5)

Descending from 18.5K and 0.50		98	2m (2)
15k 0.38 Step		97	3m (3)
15k 0.25 Step		93	8m (3)
15k 0.13 Step		89	11m (3)

15k 0.0 Step

83m 16m (5)

Large breaths avoiding stability.

Descending from 15K and 0.25		95	9.5 (4) 5.5m
12k 0.190 Step		94	8.5 (3)
12k 0.13 Step		93	12 (3.5)
12k 0.0 Step		89	17 (5)

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

14:42 GL

15:42 TAKE

Subj: Am 631 Cam. #11
 PI: Campbell and Jay
 IO: Sawyer Peterson
 Chief Flight Engineer: Eric Simson
 Date: 23 June 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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9:17:00 @ 10k		91.6 @ 11min		
10K BL	none	92		
14K BL	none	82		Taking large breaths regularly
10:01 denite start		82 @ 11min		
Bike Start	none		✓	
Sub 77% Start	none		✓	
Sub End	none		✓	
Sub 85%	none			
IO 77% Start	none		✓	
IO End	none		✓	
IO 85%	none			
10:56				
LTA at 55	none			
LTA at 65	none			
LTA at 75	none			
LTA at 85	none			
12:31				
Ascend to 30K	none			
30K Arrive and don PAX	3.24			

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	✓ 97	9	
40k Arrive	"	Nadir 86		
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	98	5m	
Start of descent from 40K	35k	2.55	100	2m
35k 1.9 Step	1.90	100	5m (3)	
35k 1.28 Step	1.28	99	8m (3)	
35k 0.64 Step	0.64	98	13m (5)	

1:36 sec helmet/mask removed

Descending from 35K	2.00	100	5m	@ 3m mark including
30k 1.50 Step	1.50	100	5m (2)	
30k 1.0 Step	1.00	100	8m (3)	
30k 0.5 Step	0.50	92	15m (7)	

helmet removed

Descending from 30K and 1.50		100	1m	one minute
25k 1.13 Step		100	3m (2)	
25k 0.75 Step		100	6m (3)	
25k 0.37 Step		91	13m (7)	13m (7)

Descending from 25K and 1.17		100	2m	
20k 0.88 Step		100	4m (2)	
20k 0.59 Step		99	6m (2)	
20k 0.30 Step		93	13m (7)	

Descending from 20K and 0.83		100	3m	
18.5k 0.62 Step		99	6m (3)	
18.5k 0.42 Step		98	9m (3)	
18.5k 0.21 Step	91	92	13m (4)	

18.5k zero step

76 19m (6) not stable but close

Descending from 18.5K and 0.50		98	3m	
15k 0.38 Step		99	6m (3)	
15k 0.25 Step		97	9m (3)	
15k 0.13 Step		91	12m (3)	

15k zero step

80 19m (7) stable

Descending from 15K and 0.25		94	2m	
12k 0.190 Step		96	5m (3)	big breath @ 3min
12k 0.13 Step		96	8m (3)	another big breath @ 6:15
12k 0.0 Step	✓ 86	86	12m (4)	

14 (6)

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

* oddily low SpO2 @ 14K' BL.
72% SpO2 was double-checked.

Subj: Am 631 Cam, #12
PI: Campbell
IO: Steph Balderrama
Chief Flight Engineer: Eric Simon / AJ Lachue
Date: 02 Jul 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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Wheels up 09:11:32

10K BL	none	93	9m	Large breath @ 8m
14K BL	none	72 (70)		Cold fingers?

10:00:00 denitrogenization began

Bike Start	none			
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Sub 77% Start	none			
Sub End	none			
Sub 85%	none			

IO 77% Start	none			
IO End	none			
IO 85%	none			

LTA at 55	none			
LTA at 65	none			
LTA at 75	none			
LTA at 85	none			

12:15 Resist w/ hand
12:30:00

Ascend to 30K	none			
30K Arrive and don PAX	3.24			

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	80		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	95	5m	

Start of descent from 40K	2.55	99	1m	
35k 1.9 Step	98.7	1.90	99	3m (2)
35k 1.28 Step	98.9	1.28	99	5m (2)
35k 0.64 Step	0.64	98	8m (3)	

Not breathing down bag yet
oxygen supply very close to tidal volume.

Descending from 35K	2.00	100	1m	
30k 1.50 Step	1.50	99	2.25m	
30k 1.0 Step	99.4 1.00	99	4m (2)	
30k 0.5 Step	99.3 0.50	99		

Descending from 30K and 1.50		99	1m	
25k 1.13 Step		99	3m (2)	
25k 0.75 Step	99.3	99	5m (2)	
25k 0.37 Step		99	10m (5)	

Descending from 25K and 1.17		99	1m	
20k 0.88 Step		99	3m (2)	3m 10s
20k 0.59 Step		99	5m (2)	
20k 0.30 Step		99	10m (5)	

Descending from 20K and 0.83		99	1m	
18.5k 0.62 Step		99	3m (2)	
18.5k 0.42 Step		98	5m (2)	
18.5k 0.21 Step		91	8m (3)	

		64	12m (4)	not stable
Descending from 18.5K and 0.50	98 →	98	2m	
15k 0.38 Step		98	4m (2)	
15k 0.25 Step		96	7m (3)	
15k 0.13 Step		91	10m (3)	

		75	75	14m (4)	dropping
Descending from 15K and 0.25	96.55 →	97	5m		
12k 0.190 Step	96.05	96	8m (3)		
12k 0.13 Step		94	11m (3)		
12k 0.0 Step		83	20m (9)		

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

→ After 15k' turn to 14k' for 2nd Baseline = 72 7m

Not cold
Fingers

15:36 CLEAN time departure

Subj: Am 631 Cami #13

PI: Campbell and Jay

IO: Steph. Balderrama

Chief Flight Engineer: Roger Storey

Date: 09 Jun 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	87	7m	
14K BL	none	76	8m	Large breather @ 4.5 & 5.25 min

Bike Start ~9:20A Lg HELMET/mask none Excellent fit Narrow mask ☒

Sub 77% Start none ☒

Sub End none ☒

Sub 85% none ☒ ALL GOOD

IO 77% Start none ☒

IO End none ☒

IO 85% none ☒ ALL GOOD

LTA at 55 ~10:15 ✓ none ☐

LTA at 65 25 ✓ none ☐

LTA at 75 30 ✓ none ☐

LTA at 85 45 ✓ none ☐

11:49A
Ascend to 30K none ☐

30K Arrive and don PAX	3.24	100		
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Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	84		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	94	5m	Very stable

Start of descent from 40K	2.55	98	1m	
35k 1.9 Step	1.90	98	3m (2)	
35k 1.28 Step	1.28	98	5m (2)	
35k 0.64 Step	0.64	88	10m (5)	

Descending from 35K	2.00	99	1m
30k 1.50 Step	1.50	99	2m (1)
30k 1.0 Step	1.00	98	4m (2)
30k 0.5 Step	0.50	92	9m (5)

Descending from 30K and 1.50		99	2m (2)
25k 1.13 Step		99	4m (2)
25k 0.75 Step		97	6m (2)
25k 0.37 Step		86	10m (4)

Descending from 25K and 1.17		99	1m
20k 0.88 Step		99	3m (2)
20k 0.59 Step		97	6m (3)
20k 0.30 Step		89	11m (5)

Big breath @ 9m mark = no change in SpO₂!

Descending from 20K and 0.83		99	1m
18.5k 0.62 Step		98	3m (2)
18.5k 0.42 Step		95	6m (3)
18.5k 0.21 Step		87	10m (5)

18.5k zero step 69 18m (7) taking large breath to ↑ SpO₂

Descending from 18.5K and 0.50		98	3m
15k 0.38 Step		96	6m (3)
15k 0.25 Step		93	9m (3)
15k 0.13 Step		87	12m (3)

15k zero step 79 18m (6) ~~~~~ SpO₂ & breathing variable

Descending from 15K and 0.25		94	3m
12k 0.190 Step		93	6m (3)
12k 0.13 Step		91	9m (3)
12k 0.0 Step		85	14m (5)

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

Kennedy side pain
 Baldernum swapped
 in w/ additional
 Bar check.
 10:08 descent

Subj: Am 637 CAM. 314
 PI: Campbell
 IO: L. Kennedy
 Chief Flight Engineer: Robert Scully, EE Dunn
 Date: 14 Jul 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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10K BL	none	90	7m	Nice sine wave breathing
14K BL	none	82	10m	

10:08 descent began				
Bike Start	none		<input checked="" type="checkbox"/>	

Sub 77% Start	none		<input checked="" type="checkbox"/>	
Sub End	none		<input checked="" type="checkbox"/>	
Sub 85%	none		<input checked="" type="checkbox"/>	

IO 77% Start	none		<input checked="" type="checkbox"/>	
IO End	none		<input checked="" type="checkbox"/>	
IO 85%	none		<input checked="" type="checkbox"/>	

11:03				
LTA at 55	none		<input checked="" type="checkbox"/>	
LTA at 65	none		<input checked="" type="checkbox"/>	
LTA at 75	none		<input checked="" type="checkbox"/>	
LTA at 85	none		<input checked="" type="checkbox"/>	

12:38				
Ascend to 30K	none			
30K Arrive and don PAX	3.24	100		

Instructions:
 PAX o2 flow "steps" occur after SpO2 stabilizes
 At 97%-100%, this can occur within 1 minute
 At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes
 1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	84		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	3.10	95	5m	Big breath & 93 @ 4m

Start of descent from 40K	2.55	98	1m	
35k 1.9 Step	1.90	98	2m (2)	
35k 1.28 Step	1.28	98	3:20 (2:20)	
35k 0.64 Step	0.64	78	10m	(6:40)

51:40
 64:20

Descending from 35K	2.00	99	1m	
30k 1.50 Step	1.50	99	2m (1)	
30k 1.0 Step	1.00	98	4m (2)	
30k 0.5 Step	0.50	81	10m (6)	

Descending from 30K and 1.50		99	2m	
25k 1.13 Step		99	3m (1)	
25k 0.75 Step		95	6.5m (3.5)	
25k 0.37 Step		84	10m (3.5)	

Descending from 25K and 1.17		98	1m	
20k 0.88 Step		98	3m (2)	
20k 0.59 Step		96	6m (3)	
20k 0.30 Step		88	10m (4)	

Descending from 20K and 0.83		98	2m	
18.5k 0.62 Step		98	4m (2)	
18.5k 0.42 Step		93	7m (3)	
18.5k 0.21 Step		85	11m (4)	

18.5 Zero Step	Stable →	73	19m (8)	Hrt ↑ mm 0 breathing erratic
Descending from 18.5K and 0.50		95	3m	
15k 0.38 Step		91	8m (5)	Variable breathing = no spoz
15k 0.25 Step		92	13m (5)	Spoz ↑ inexplicably @ 11m
15k 0.13 Step		87	16m (3)	

15k Zero Step		81	20m (4)	
Descending from 15K and 0.25		93	2m	
12k 0.190 Step		93	5m (3)	
12k 0.13 Step	✓	91	8m (3)	
12k 0.0 Step		86	14m (6)	

Descending from 12K none, but PAX stays on for at least 5 min post-landing

2:37:50 GL

Subj: Am 631 Cam #16
 PI: Campbell
 IO: KIRBY
 Chief Flight Engineer: Eric Simeon, Jimmy Simeon
 Date: 05 Aug 2025

OFOS sequence and LabVIEW log entries	PAX oxygen NLPM	Subj SpO2	Data time	Notes
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8:49 Ascent.

10K BL	none	90	6.5m	@ 6.5m = big breath.
14K BL	none	80	9m	

GL 0913

Bike Start	9:30	none		
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Sub 77% Start	none			
Sub End	none			
Sub 85%	none			

IO 77% Start	none			
IO End	none			
IO 85%	none			

LTA at 55	10:25	none		
LTA at 65		none		
LTA at 75		none		
LTA at 85		none		

12:03

Ascend to 30K	none			
30K Arrive and don PAX	3.24			

Instructions:

PAX o2 flow "steps" occur after SpO2 stabilizes

At 97%-100%, this can occur within 1 minute

At 96% and below, SpO2 stability is +/- 1% (2-tailed) for the better part of 3 minutes

1 minute and 3 minute average in LabVIEW helps BUT unstable breathing patterns devalue this info

Ascend 45k peak and Descend to 40k	3.24	85		
40k Arrive	"			
40k Subj achieves 85% SpO2	"			
40k 3.1 Step	93	3.10	4.5m	4m 4

Start of descent from 40K	2.55	96	2m	
35k 1.9 Step	1.90	96	4m (2)	
35k 1.28 Step	1.28	96	6m (2)	
35k 0.64 Step	0.64	78	9m (4)	

then
83% @ 11m

Descending from 35K	2.00	97	2m	
30k 1.50 Step	1.50	97	4m (2)	
30k 1.0 Step	1.00	96	6m (2)	
30k 0.5 Step	0.50	83	10.5m	(4.5)

Descending from 30K and 1.50		98	2m	
25k 1.13 Step		97	4m (2)	
25k 0.75 Step		94	8m (4)	
25k 0.37 Step		84	11m (3)	

Descending from 25K and 1.17		98	2m	
20k 0.88 Step		96	4m (2)	
20k 0.59 Step		94	6m (2)	
20k 0.30 Step		86	10m (4)	

20k Zero 70 13m (3)

Descending from 20K and 0.83		96	2m	
18.5k 0.62 Step		95	4.25m	(2.25)
18.5k 0.42 Step		92	6.25m	(2)
18.5k 0.21 Step		86	9.25m	(3)

18.5k Zero 72 14m

Descending from 18.5K and 0.50		94	3m	
15k 0.38 Step		93	6m (3)	Very stable
15k 0.25 Step		90	8m (2)	
15k 0.13 Step		86	11m (3)	

15k Zero 78 16.5m (5.5) HR ~~~ 80 → 90 → 80

Descending from 15K and 0.25		92	4m	Very stable @ 3m - 4m
12k 0.190 Step		91	7m	
12k 0.13 Step		89	10m	
12k 0.0 Step		84.3	14m	

Descending from 12K

none, but PAX stays on for at least 5 min post-landing

GL @ 2:09:30