

207

CCAR-33R2

2011 1

30

2012

1 1

李家祥

○

A

33.1

a

b

CCAR- 21

CCAR- 34

2002 4 19

33.3

33.4

A

33.5

a

1

2

3

4

;

5

;

6

b

1

2

3

i

ii

iii

4

OEI

;

5

c

33.75(d)

2011 3 15

33.7

a

CCAR-21

b

1

i

;

ii

2

3

4

i

ii

iii

5

i

ii

6

7

8

c

1

i

ii

iii

iv

v 30

OEI

vi $2\frac{1}{2}$

OEI

vii

OEI

viii 2

OEI

ix 30

OEI

x APU

2

3

4

5

i

ii

iii

iv

v

6

i

ii

iii

iv

7

8

9

10

11

12

13

14

15

16

17

18

/

d

33.5 (a)(6)

2011 3 15

33.8

a

b

B

33.11

33.13

33.14

2011 3 15

33.15

a

b

33.17

a

b c

c

23.7 25

d

1

2

3

e (a) (b)

f

g

2011 3 15

33.19

a

b

35

35.21

35.23

35.42

35.43

2011 3 15

33.21

33.23

a

b

1

2

33.25

33. 27

a

c

b

33. 28

c

5

1

c 2 iv

2

i

120%

ii

115

iii

115

iv 120

v 105

vi

2011 3 15

33.28

a

b

1

i

2

d

1 () (LOTC/LOPC)

2

LOTC

LOPC

"

"

3

4

e

33.75

f

1

2

/

3

g

h

1

2

i

1

i

ii

2 (i)(1)

3

4 (i)(3)
(i)(1)

j

(e)

k 30

OEI

30

OEI

30

OEI

l

m

2011 3 15

33.29

a

b

c 30 OEI 2

OEI

1 30 OEI 2

OEI

2 30 OEI 2 OEI

3 30

OEI 2 OEI

4

d c 2 c 3

e

f 33.28 (e)

g

h

1

2

3

2011 3 15

C

33. 31

33. 33

33. 34

2011 3 15

33. 35

a

b

c

d

e

33.37

33.39

a

b

c

D

33. 41

33. 42

33. 43

a

110

103

b

c

d

a

b

33.45

a

33.49

b

33.47

33.49

a

150

e 1 iii

b e

± 3

35

28 50°F

± 5.5 10°F

b

1 30

5

5

2	20	$1\frac{1}{2}$	
	$\frac{1}{2}$	75	91

3	20	$1\frac{1}{2}$	
	$\frac{1}{2}$	70	89

4	20	$1\frac{1}{2}$	
	$\frac{1}{2}$	65	87

5	20	$1\frac{1}{2}$	
	$\frac{1}{2}$	60	84.5

6	20	$1\frac{1}{2}$	
	$\frac{1}{2}$	50	79.5

7	20	$2\frac{1}{2}$	
	$2\frac{1}{2}$		

c

1	30		5
---	----	--	---

	5				
				30	
	15			5	
1				-	
1				-	



7	10			1	
		1	60		84.5
8	10			1	
		1	50		79.5
9	20			2	
		2			
10	5				
d					
		29	29.923	a	j
1	35			30	
2	25			$2\frac{1}{2}$	
				70	

3	25			$2\frac{1}{2}$		
	80	90			70	
4	25			$2\frac{1}{2}$		30
	80	90			30	
5	25			$2\frac{1}{2}$		80
	110					103%
6	15			105		105
				105		
e						
1						b
i		b	1			
;						
ii		b	2	7		

		2,440	8,000	
iii		150		
				50
			50	
2				d
i	d	1		
ii	d	2	3	
			2,440	8,000
iii	d	4		2,440
8,000				
iv	d	5	80	
			2,440	8,000
v	d	6		
;				
vi				
				50

50

33. 51

5

33. 53

a 33. 49

b

2011 3 15

33. 55

a

b

c 33.4

33.57

a

b 33.4

c

E

33.61

33.62

33. 63

2002 4 19

33. 64

a

1

i 1. 1

ii 1. 33

iii 35kPa(5 p s i.)

2

i 1. 15

ii 1. 5

iii 35kPa(5 p s i.)

b

1

2

3

4

2011 3 15

33.65

33.5 b

33.66

33.7 c II

33.67

a

b

b

1

2

3

4

i

ii 27 80°F

0.2

0.025

0

32°F

5

i

ii

6

c

d

2011 3 15

33.68

a

25

C

b

30

-9 ~ -1

15° F~ 30° F

0.3

20

30

33.69

33.70

33.75

a

33.4

b

c

2011 3 15

33.71

a

b

1

2

3

b 2

4			
		b	3
5			
6			
		b	3
7			
c			
1			10%
2			
3			
4			
ETOPS			
5		"	"
6			

7

8

9

5 psi.

33.64

10

11

12

i

ii

iii

d

1

2

e

2011 3 15

33.72

33.71

33.73

a

1

b

5

15

95

5

33.74

10^8

(4)

(10^5 10^7

)

(b)

(c)

33.15 , 33.27 33.70

(d)

33.5

(e)

(1)

33.4

(2)

(3)

(4) 33.5

(f)

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(g)

33

(1)

()

(2)

(i)

(ii)

(iii)

(iv)

(v)

(vi)

(vii)

(3)

(g)(1) (g)(2)

2011 3 15

33.76

a

b

c

d

1

d

100

2						33.5		
3							b	c
d								
		b	3	c	6	d	4	
4								
5		b	c	d				
6								
b								
1				1		1		
				370		200		

1

A	
1. 35 2, 092 A	1. 85 4. 07
1. 35 2, 092 A 3. 90 6, 045	2. 75 6. 05
3. 90 6, 045 A	3. 65 8. 03

2

15

3

33. 75 g 2

4

33. 94 a

c

1

460

1500

V1

2

2

1

2

2

2

1

1

3

3

4

5

0.032

49.6

1

85

0.187

16

6

i 25

ii c 7 c 8

iii b 3

iv

7

i 1 1

1

ii 2

iii 3 75

iv 6 60

v 6 40

vi 1

vii 2 75

viii ;

ix

10

8

i 1 1

1

ii 3 75
 iii 90
 iv 30 75
 v ;
 vi
 10
 9

10 c 7 ii

2

2

A						
0.05	77.5	A				
0.05	77.5	A	0.10	155	1	0.35 0.77
0.10	155	A	0.20	310	1	0.45 0.99
0.20	310	A	0.40	620	2	0.45 0.99

0.40 620 A 0.60 930	2	0.70 1.54
0.60 930 A 1.00 1,550	3	0.70 1.54
1.00 1,550 A 1.35 2,092	4	0.70 1.54
1.35 2,092 A 1.70 2,635	1 3	1.15 2.53 0.70 1.54
1.70 2,635 A 2.10 3,255	1 4	1.15 2.53 0.70 1.54
2.10 3,255 A 2.50 3,875	1 5	1.15 2.53 0.70 1.54
2.50 3,875 A 3.90 6,045	1 6	1.15 2.53 0.70 1.54

3.90 6,045 A 4.50 6,975	3	1.15 2.53
4.50 6,975 A	4	1.15 2.53

90

3 1 50

4

i d 5 i

50

ii d 5

iii b 3

5

i 1

ii 50

13

iii 30 35

2

iv d 5 iii

5 10 1

v d 5 iv

5 10 2

vi 1

10 d 5 ii
d 5 iii
30
6 d
i d 4 d 5 b 1
ii b 1
A d
B d 6 ii A
d 4 d
5 d 5 i d
5 ii 14
C d 4 d 5
7

3

c

e

c

1

2

2

3

4

-4 25°F

2002 4 19

33.78

a

1

4,500 15,000

0.8—0.9

i				0.064		100
	1	25	1			
ii				0.064		100
		0.0968		150		
	1	25	1		1	50
						2
2			a	1		b

B

3 30

b a 2

4

1

3

2

3

3

4

c

a 1

a 2

3

10,500 35,000

25

1

18,000 60,000

6

1 4

d

a b c

1

2

3

a b c

2002 4 19

33. 79

a

b —

c

d

e

F

33. 81

33. 82

33.83

a

b

2

103

100

2

c

1

2

d

e

e

f

33.5

2002 4 19

33.84

(a)

(1)

33.87

(2)

33.93

a (1)

a (2)

(b)

(1)

15

2.5

(2)

2 OEI

(3)

(4)

30

2

OEI

20

b

1

b

2

b

3

2011 3 15

33.85

a

33.87

1

2

3

a 5

100

100

4

33.7 c

5

f

$\frac{1}{5}$

100

6

(f)

(a)(6)(iii)

(a)(6)(i) (ii)

i

ii

iii

(f)(1) (f)(8)

7

5

8

b g)

9

i

1

ii

iii

iv

33.5 b

v

b

c

d

e

1

1

5

5

					5
			b	5	
2					
30					
i	25	6			15
ii	25	6			10
3					
1	30				
4					
				15	
		15			
2	30				

50

5		30			6
				30	
	4 $\frac{1}{2}$				
1					
			2		
6		100			25
	2				10
		10			
15			150		
c	30			OEI	
		30			OEI
1		1		5	
					5

									5
							c	5	
	2								30
	i	25	6					15	
	ii	25	6					10	
	3								1
	4	30					OEI		
30					OEI		30		
	5								
					12				
	12								
2									

50

6		30		6
		30		
4 ¹ / ₂				1
	2			
7		100		25
	2			10
		10		
15			150	
d			OEI	
			OEI	
1		1	5	5

			30		
	$4\frac{1}{2}$				1
		2			
7			100		25
	2			10	
			10		
15				150	
e	$2\frac{1}{2}$			OEI	
			$2\frac{1}{2}$		OEI
1		$2\frac{1}{2}$		OEI	
1		5		5	
	3	6			
$2\frac{1}{2}$		$2\frac{1}{2}$		$2\frac{1}{2}$	OEI
			$2\frac{1}{2}$	OEI	

5

d 6

2 25 6 1

b 2 30 5

c 2 30 OEI 30

5 d 3 1 OEI

5 b 2 b 6

c 2 c 6 d 2 d 7

2½ OEI

f 30 OEI 2

OEI

30 OEI 2 OEI

b c d

e

33.93 a

b c d e

4 120

1				3		
2	30			OEI		30
			OEI	30		
3	2			OEI		2
			OEI	2		
4	30			OEI		
	OEI				30	
	OEI					OEI
				5		
			65			
30	OEI	65		30	OEI	30
		OEI				35
5	50		50		1	
6	30			OEI		30
			OEI	30		
7	2			OEI		2
			OEI	2		
8				1		
9						
1						

1	30			
i	2	5		5
ii	1	5	5	15
iii	1	10		2
	10		5	
iv	6	1		2
	2			
	4	30		
i				
	30			90
			10	5
		g	2	ii
				iv

ii			g 2 i	
			80%	
	10			
iii			g 2 i	
			60%	
		10		15
	10			
iv			g 2 i ii	
v	30		30	25
				5
	25			15
				5
3		100		25
	2			10
		10		
15				
2011	3	15		
33.88				

a

42

75°F

5

30

OEI

2

OEI

b

a

30

OEI

2

OEI

33. 28

k

30

OEI

19

35°F

4

c

2011

3

15

33. 89

a

1

2

33. 73

3

i

ii

iii

4

a 3 ii

iii

b

33.90

a

—

b

33.201

c

f

2011 3 15

33.91

a

33.87

b

c

5psi.

33.64

d

2011 3 15

33.92

25

a

b

c 25

5

2002 4 19

33.93

a 33.87 b c d e g

1

2 33.4

b 33.87 f

1

2 a 2

c b 30

OEI 2 OEI

33.87 b c d e

33.87 f

33.87 f

a

2011 3 15

33.94

a

b

15

1

80

2

80

b

a 1

a 2

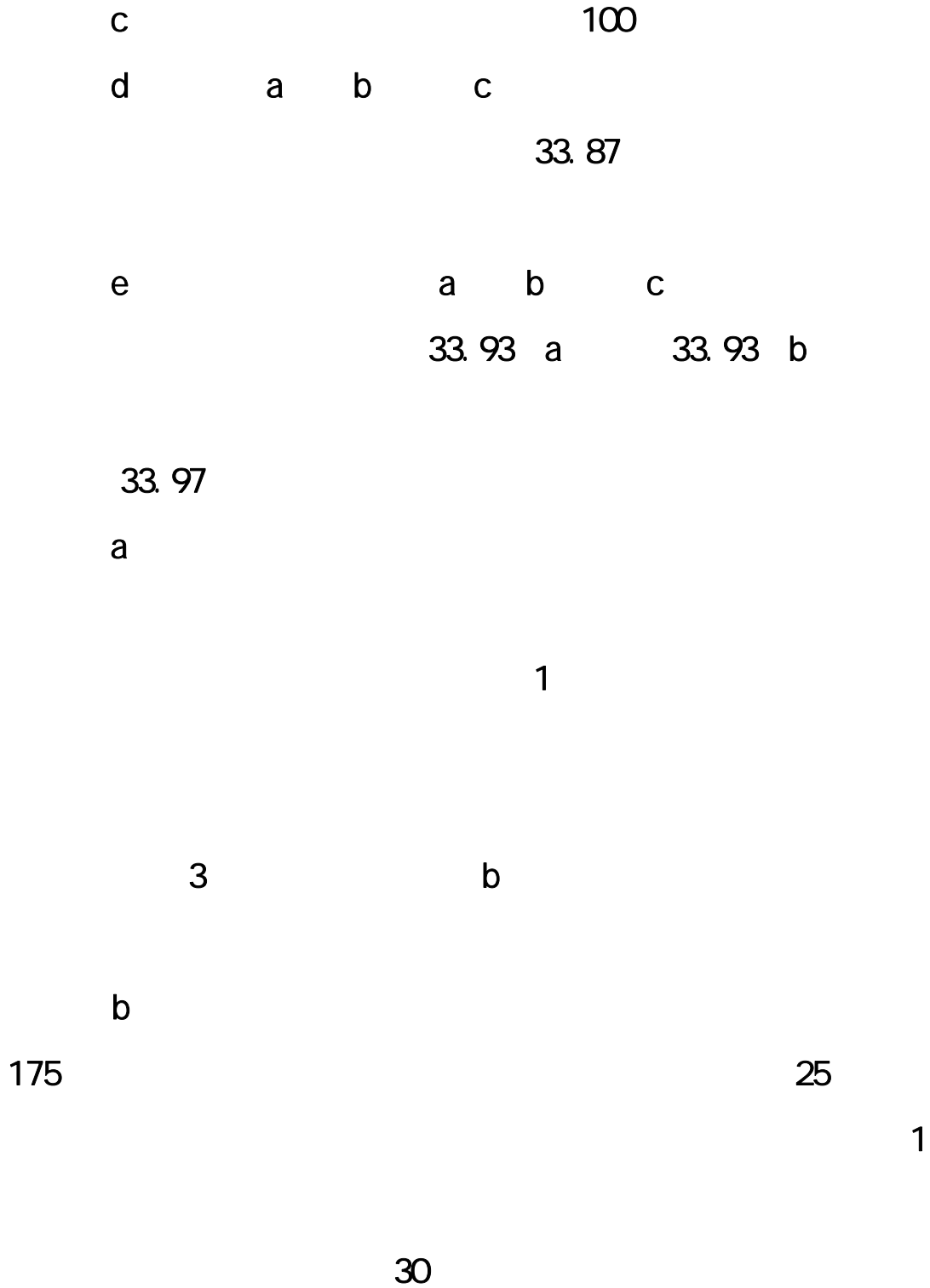
1

2

33.95

—

a	25		
b			25
c			25
d		175	
		25	
	30		
33.96		APU	
APU			33.87
a			45
		APU	
b			400
			—



33.99

a

b

33.4

c

G

33.201

ETOPS

25

K

K25.2.1

ETOPS

a

b			10	
		10		
c	f			ETOPS
1	3000		—	3
	ETOPS		—	
			100	
2				
90				
			90	
3		—		60 /

—		60 /	200 /
		60 /	
	200 /		
4			c 3
		60 /	
	60 /	200 /	
	60 /		
200 /			
5			
		33. 201	c 2
d	c		
e	c		
1			
2		33. 4	
3			
i	33. 4		

ii b

iii b

4

ETOPS

ETOPS

f

c

g ETOPS 33.90

33.90 a

ETOPS

2011 3 15

H

2012 1 1 2002

< >

109

A

A33.1

a 33.4

b

c

A33.2

a

b

A33.3

a

1

2

3

4

5

6

7

8

9

b

1

2

3

4

5

6

7

8

c ETOPS

ETOPS

ETOPS

ETOPS

2011 3 15

A33.4

a.

(1)

(2)

"

"

b. 30 OEI 2 OEI

(1) 30 OEI 2

OEI

(2) A33.4 b 1

(3) A33.4 b 1

33.5 b 4

30 OEI 2

OEI

2011 3 15

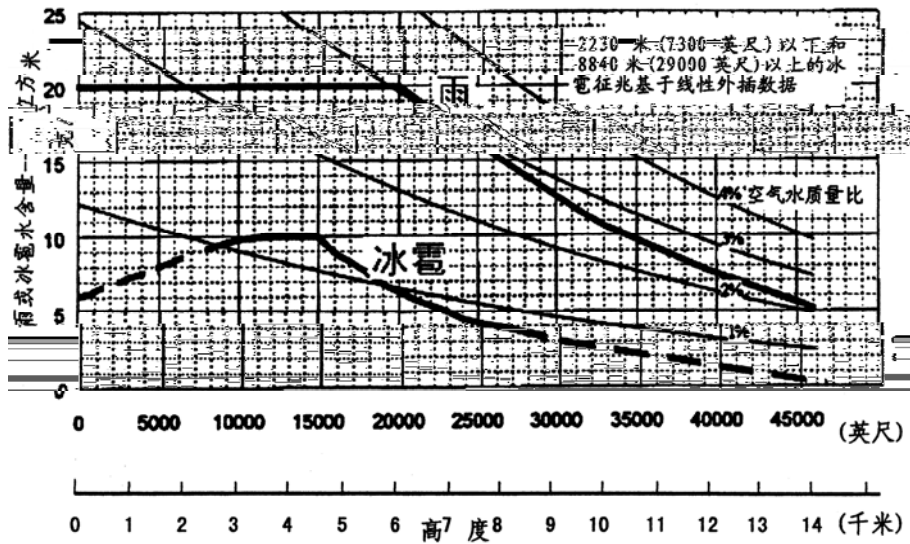
B

33.78 a 2

B1

B1 B2 B3 B4

B



B1

B1

B2

B1

0 0	20.0
6,100 20,000	20.0

航空发动机适航规定

2,230 7,300 8,840 29,000

B3

	%
0-0.49	0
0.5-0.99	2.25
1.00-1.49	8.75
1.50-1.99	16.25
2.00-2.49	19.00
2.50-2.99	17.75
3.00-3.49	9.50
3.50-3.99	6.00
4.00-4.49	3.00
4.50-4.99	2.00
5.00-5.49	1.25
6.00-6.49	0.50
6.50-7.00	0.25
	100.00

2.66

B4

	%
0-4.9	0
5.0-9.9	17.00
10.0-14.9	25.00
15.0-19.9	22.50
20.0-24.9	16.00
25.0-29.9	9.75
30.0-34.9	4.75
35.0-39.9	2.50
40.0-44.9	1.50
45.0-49.9	0.75
50.0-55	0.25
	100.00

16

2002 4 19