

/ kariere@kari.re.kr,

(KMH,

Korean Multi-role Helicopter)

KMH

15,000lbs

1.

15

KMH

1977 4

500MD

UH-60P

BO-105

, 500D/E/F

, Bell-212/412

, BK-117

, 520MK

, SB-427

spin-off

?

F-5E/F

KF-16

2.

(

-91 1993

KT-1

2.1

Lockheed

Martin

T-50

2.1.1

(maximum gross

weight)

가 , 가

15,000lbs

(medium/heavy)

(light)

. (1)

1. (A)

	(lbs)	
(Light)	15,000	OH-58D, AH-1S
(Medium/Heavy)	15,000	CH-47, AH-64

12,000lbs (light), 14,000 45,000lbs
(medium lift), 50,000lbs
(heavy lift),
80,000lbs (very largest
helicopter) .(2)

2. (B)

	(lbs)	
(Light)	12,000	UH-1H, EC-635
(Medium Lift)	14,000 45,000	UH-60, Tiger
(Heavy Lift)	50,000	CH-53
(Very Largest)	80,000	MI-26

2.1.2

, Rolls-Royce
, (light single), (light
twin), (intermediate twin), (large
twin), (heavy twin) 5 class
.(3)

2.1.3

, , , /
, .(4)

2.2

2.2.1

가 가 ,

3. (C)

	(lbs)	
(Light Single)	-	TH-667, RQ-8A
(Light Twin)	0 8,500	A-109M, EC-635
(Intermediate Twin)	8,500 15,000	Super Lynx, Tiger
(Large Twin)	15,000 30,000	UH-60, NH-90, AH-64
(Heavy Multi)	30,000	EH-101, CH-53, CH-47

4. (D)

(Light Utility)	' ,	AS-565, AB-139
(Multi-role)	' ,	UH-60, EH-101
/ (Medium/ Heavy Lift)	' ,	CH-53, CH-47, MI-26
(Attack)	' ,	AH-64D, KA-50

(FAA) (Rotorcraft)
(Normal category) FAR
Part27 (Transport category) FAR
Part29
Part27 Sec.27.1
(maximum weights)

6,000lbs 9 ,
 1999 12 8
 7,000lbs 9 .
 가
 Part29
 Sec.29.1 ,
 A B ,
 20,000lbs 10 .
 20,000lbs 10
 A ,
 20,000lbs 9 ,
 B . 20,000lbs
 10 ,
 20,000lbs 9 ,
 A
 B .(5)
 ' 15 5 '
 ' (KAS, Korean Airworthiness
 Standard, 2004-1(2004.1.12)) '
 3,100kg (7,000lbs) 9
 KAS Part 27 ' 가 (N)
 ' , KAS Part 29
 ' 가 (TA TB)
 FAR .

2.2.2

, 6,000lbs
 (light single), (light twin), 6,000
 12,000lbs (intermediate twin),
 15,000lbs / (medium/heavy twin)
 .(6)
 Rolls-Royce
 . (light single), 8,500lbs
 (light twin), 8,500 12,500 lbs
 (intermediate twin), 12,500lbs
 (large multi) .(7)

5. (FAA)

	7,000lbs 9	FAR Part27, Sec. 27.1 99. 12. 8	part appendix C Category A
A	20,000lbs 10	FAR Part29, Sec. 29.1 (c) 96. 10. 6	Category A
B	20,000lbs 9	FAR Part29, Sec. 29.1 (d) 96. 10. 6	part Subparts C, D, E F Category A B
	20,000lbs 10	FAR Part29, Sec. 29.1 (e) 96. 10. 6	part Secs. 29.67 (a)(2), 29.87, 29.1517, subparts C, D, E F Category A Category B
	20,000lbs 9	FAR Part29, Sec. 29.1 (f) 96. 10.6	Category B

6. (A)

	(lbs)	
(Light Single)	6,000	R-22, R-44, Enstrom
(Light Twin)	6,000	BO-105, B-427, MD 902
(Intermediate Twin)	6,000 12,000	S-76, AS-365
/ (Medium/ Heavy Twin)	15,000	EH-101, S-92

7. (B)

	(lbs)	
(Light Single)	-	EC-120, B-407, MD500/600
(Light Twin)	8,500	EC-135, A-109E, BK-117, B-427
(Intermediate Twin)	8,500 12,500	EC-155, Bell-430, S-76C, AB-139
(Large Multi)	12,500	AS-332, S-92, EH-101

9. (D)

(Piston)	2 4	R-22, R-44, 300C/CB, EL80
(Turboshaft Single)	5 8	EC-120, EC-130, B-407, B-206, MD500/600
(Turboshaft Twin)	5 8	EC-135, A-109, B-427, MD902, BO-105
	9 10	B-430, BK-117, AS-365
	11 15	B-412EP, S-76, EC-155
	16	AS-332, EH-101, S-92

.(8)

8. (C)

	(lbs)	
(Piston)	-	R-22, R-44, Schweizer, Enstrom
(Turboshaft Light)	7,000	B-407, EC-135, MD 902
(Turboshaft Large)	7,000	S-76, AS-365, S-92, EH-101

1 .

3.

가

3.1

3.1.1

. 2003

65 , 91

156 . 16

(7),

(7), (6)

가

6,000lbs, 12,000lbs
 , A-109, MD Explorer가 A 6,000lbs
 EC-135, B-427
 , 13,200lbs
 AB-139 KA-62 12,000lbs
 , 15,000lbs
 3 EH-101
 /
 9

), (11) 72
 , (4) (3)
 가 19 91

(lbs)		5	10	15	20	25	30
A	A	Light			Medium/Heavy		
	B	Light			Medium lift		
	C	Light single	Inter-mediate twin		Large twin		
F A R	A	Normal		Transport A/B			
	B	Light single	Inter-mediate twin		Medium/Heavy twin		
	C	Light twin	Inter-mediate twin		Large multi		
	D	Piston	Turboshaft large				
(lbs)		5	10	15	20	25	30

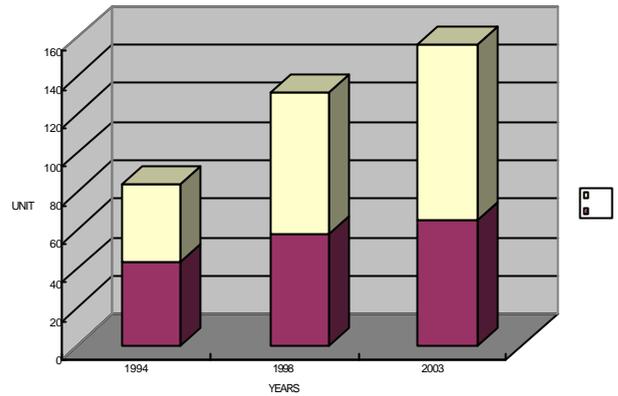
1. (1,000lbs)

1994 84 2003 156
 가 7.3% 가
 4.2% 가
 10%
 가 .(2)
 가가
 가가

3.1.2 ()

2003 4

, , (,)



2. (1,000lbs)

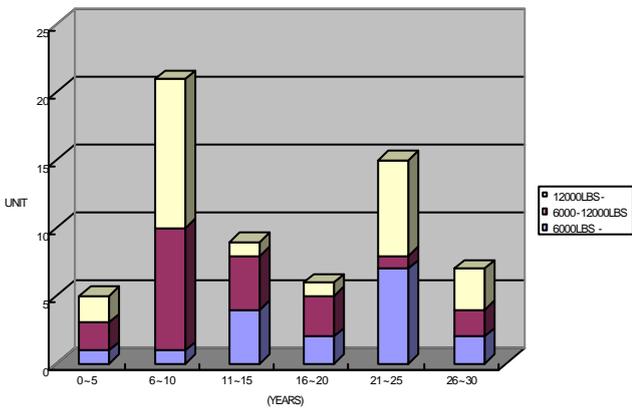
A
 12,000 15,000lbs 12,000lbs
 , 6,000lbs , 6,000 12,000lbs,
 12,000lbs 3
 2 5, 6 10, 11 3
 20 ,
 .(10)
 12,000lbs
 가 40% ,
 11 59%
 42% ,
 가
 가 6 10 21
 가 21 25 가
 가
 가 16 20 6 , 11
 14 9 , 6 10 21 가 가 0 5
 5 .(3)

1997

가
 12,000lbs 가가

10. (2003.4)

	(lb)			2 5	6 10	11			
	6,000	6,000~12,000	12,000						
0 5	1	2	2	1	2	2	2	3	5
6 10	1	9	11	-	3	18	6	15	21
11 15	4	4	1	1	6	2	5	4	9
16 20	2	3	1	1	2	3	3	3	6
21 25	7	1	7	6	2	7	13	2	15
26 30	2	2	3	2	-	5	7	-	7
31 35	-	-	-	-	-	-	-	-	0
36 40	-	-	-	-	-	-	-	-	0
41 45	-	-	1	-	-	1	1	-	1
	17	21	26	11	15	38	37	27	64



3.

3.2

3.2.1

3.2.2

2010

1.9

314

, 2020

3.4

가 .

505

2003

가

2010

158 , 2020

349

2010

가

가 83 (26.4%),
 가 231 (73.6%) 가
 , 2020 131 (25.9%),
 231 (74.1%) 가 . 2010
 가가 314 74.7%
 , 25.3%
 . 2020
 가
 가
 4 10
 가
 2020
 가
 4.8 711
 가 40.8%가 가
 가 , 2003 가
 555
 가 74.6% 414
 가

3.2.3

2010 8,000lbs
 가 31.8% 100 가
 13,001 18,000lbs
 26.8% 84 2
 가
 2010 166 가
 41.7% 13,001 18,000lbs
 29.1% 8,001 13,000lbs
 가
 . 2020
 8,000 lbs 가 29.9%
 151
 , 13,001 18,000lbs 29.5%
 149 가 8000lbs
 8,001 13,000lbs
 25.5% 129
 40.5% 8,000lbs
 2020
 11.5% 13,001 18,000lbs
 30%
 가 349 37.5%
 131 가 13,001 18,000lbs
 가
 13,000 18,000lbs
 가 34.9% 248 가
 , 8,000lbs 26.6%
 189 , 8,001 13,000lbs 24.2%
 172
 13,001 18,000lbs 가

11. (: , %)

	2003	2010	2020	2020*			
	(a)	(b)	(c)	(d)	b-a	c-a	d-a
	43	83	131	184	40	88	141
	113	231	374	527	118	261	414
	156	314	505	711	158	349	555

: KIET , 2003.3

1. *

2. 가 30%

가 555
 41.4% 230 13,001 18,000lbs
 8,001 13,000lbs
 24.7% 137

가
 12. (:)

(lbs)	2003 (a)	2010 (b)	2020 (c)	2020* (d)			
					b-a	c-a	d-a
8,000	57	100	151	189	43	94	132
8,001 13,000	35	81	129	172	46	94	137
13,001 18,000	18	84	149	248	66	131	230
18,001 23,000	2	24	39	56	22	37	54
23,001	44	25	37	46	-19	-7	2
	156	314	505	711	158	349	555

: KIET , 2003.3

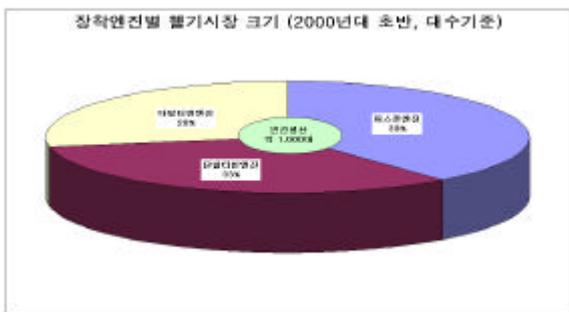
1. * 가

2. 30%

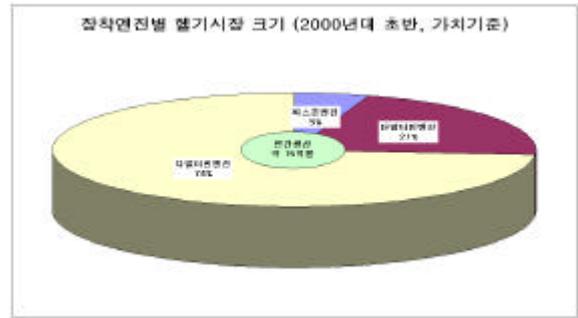
3.3

3.3.1

2000 1,000
 15
 (4, 5)
 가 ,
 350 , 8000 , 300
 , 3 5,000 , 250 , 12



4. (2000)



5. (2000 , 가)

3.3.2

5 (1998~2002)

5,700

23%

Robinson 가

5 , 4,000 가

Robinson

Eurocopter

22%

Bell

25%, Sikorsky

Boeing

7%,

Agusta

Agusta/Westland EHI

가

가

가

가

가

가

가

가

가

261

69

가

가

가

가

가

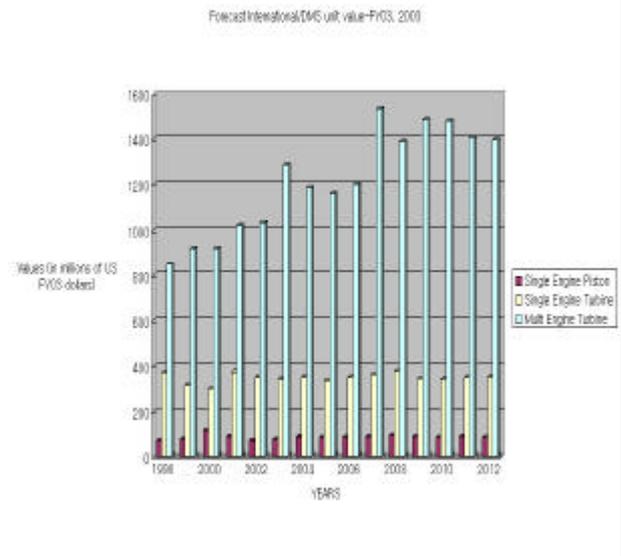
81%

3.4

Forecast International/DMS Teal Group Corp, Rolls-Royce, Honeywell

3.4.1 (Forecast Methodology)

Rolls-Royce Teal



7. '02- 12UnitValue(FY03) (2003)

3.4.2 Forecast International/DMS

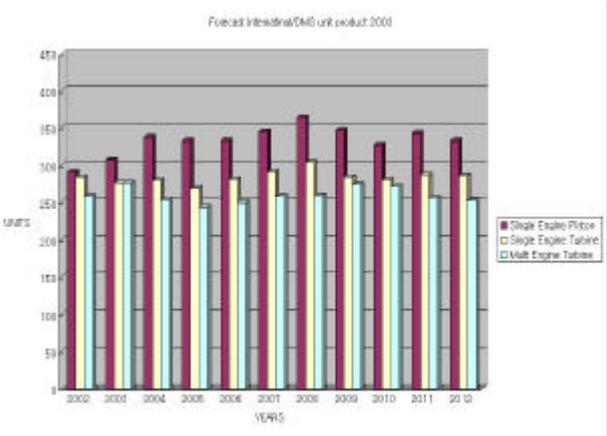
Forecast International/DMS	2003	2012	10
FY2003 US	177	8797	
가			
4			
	860	가	
		2, 3	
	2008	927	
	(6)	가	
	2009	19	
		(7)	

3.4.3 Teal Group Inc.

Teal Group Inc.	1990	12	가
	1993	8 3,000	
	4		12
	. 2002		
	11	가 420	. 2003
	2004	11	
			Honeywell Rolls
	-Royce	10	5,000 가
			. 2002
	2011		125
	4,750	가	
	2011	13	

3.4.4 Rolls-Royce

2003	Rolls-Royce	2003	2012
10			7%
가 5,161	가		
	59%		22%
	. 2002	480	가
2003	497		



6. '02- 12 Unit Product (2003)

533

2002

480 490 가

2001

Rolls-Royce/Teal

7%

2002

3.4.5 Honeywell

(2001)

2001 Honeywell 가

5

15%

Allied Signal Engines

가 4

가

900

Honeywell

2001

2005

2.5%

2,550

가

1996

2000

2,300

11% 가

3.5

3.5.1

15,000lbs

12

15

2001

69 가

3 8,200

9

10

36 , 11 15

33 가

13.

(2001)

		2-4	5-8	5-8	9-10	11-15	16+					
	R44	264	AS350/ EC130		EC135	34	B-430	14	B412	22	AS332	19
	R22	126	EC120		A109	31	BK117	11	S76	7	EH101	2
	300C/ CB	30	B-407		B427	15	AS365	11	EC155	4	KA32	1
	EL80	2	B206B3		MD902	14						
	B2B	6	B206L4		AS355	9						
			A119		BO-105	2						
			S333									
			E480									
			MD500									
			MD600									
			MI-34									
		428		269		105		36		33		22 913
()		108		355		325		187		195		330 1500

3.5.2

Forecast International/DMS

2003

가 2001

10

2012

14

40%

(7)

2012

2001

, 2012

2001

가

, 2012

5 2,480

11 15

2 8,000

Rolls-Royce

11

2013

90

, 2001

2013

9 10

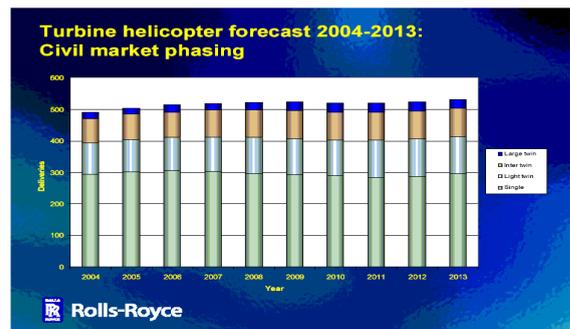
11 15

50%

, 11 15

2013

45 /



8.

(2004-2013)

2004 Forecast International/DMS
 , AS-365 ,2002 308
 가 , 8 가
 , AB139 가 가
 . 2004 2013
 가 2013 974
 97

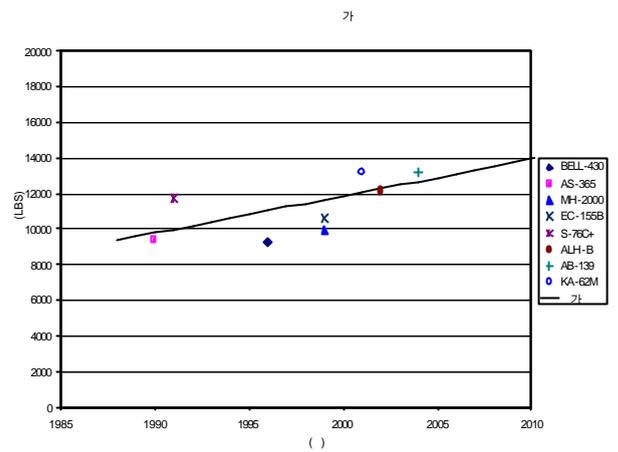
14. (2004-2013)

	04	05	06	07	08	09	10	11	12	13	
AS 365	13	14	14	12	11	10	11	10	9	8	112
S-76	29	24	20	18	16	15	14	13	14	13	176
AB 139	12	24	34	32	28	25	28	30	26	28	267
B-412	18	15	15	14	12	10	10	8	6	5	113
B-430	10	15	18	16	16	14	15	12	15	14	145
KA62	0	0	1	2	4	6	7	8	7	7	42
EC-155	11	12	12	13	13	12	11	12	11	12	119
	93	104	114	107	100	92	96	93	88	87	974

: DMS 2004.

3.5.3

가
 10,000lbs (AS-365,
 S-76) 13,200lbs (AB-139, KA-62)
 가
 가,
 가
 . 1990
 AS-365 10,000lbs
 가 2000 13,200lbs
 AB-139, KA-62가
 가 가
 2010 15,000lbs
 가 .(9)



9.

4.

4.1

가
 , , ,
 , , ,
 가,
 가
 .
 10
 가 . Forecast International
 /DMS, Rolls-Royce
 10
 ,
 가
 가 2010
 가 2012 2013
 가
 가 .
 ?
 ?
 ? 2012
 2012

? 10% 가
 ? 2020
 2010 2020 가 ,
 ? 13,001 18,000lbs 80% 2020 가
 2010 2020 10
 /10

4.2

Forecast International/DMS Rolls 18,001 23,000lbs , 2010 2020
 -Royce 10 65 ,
 가 164
 . 80% 가 ,
 10 52 , 131 가 ,
 . Forecast International/DMS 5.2 , 13.1 .
 , 가
 , 2012 2002 40%
 14 가
 . 2012 2001
 가 , 2012
 가 5 2,480
 가 . 가 2013
 10%(11 15
 20%) 가 ,
 9 5,600 6,000
 . Life Cycle 30
 가 9 가
 30 270 가 ,
 17 .

	(/)		(/)	
	90	10%	9	
	가	16.4	80%	13.1
	가	6.5	80%	5.2
(가)	106.4 (96.5)		22.1 (14.2)	

15.
 .

5.

4.3

15,000lbs , 15
 KAS-29
 가 FAR-29 B(TB) .
 11 15
 (intermediate twin), (turbohaft
 large)
 가) 가 (가
 가

2. “ ” , , 2004.
3. “21 ” , 2004
4. “ / ? ” , 2004
5. “ ” , “ ” , 1 1 2003.
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