



GOVERNMENT OF INDIA

**OFFICE OF THE DIRECTOR GENERAL OF CIVIL AVIATION**  
TECHNICAL CENTER, OPPOSITE SAFDARJUNG AIRPORT, NEW DELHI

**CIVIL AVIATION REQUIREMENT**  
**SECTION 7- FLIGHT CREW STANDARDS**  
**TRAINING AND LICENSING**

**SERIES 'B' PART X**

**28<sup>TH</sup> JUNE 2005**

**EFFECTIVE: 1 November 2006**

**Subject: Extension of Aircraft rating (Helicopters)**

**1. INTRODUCTION**

Sections F, K and N of Schedule II of the Aircraft Rules, 1937, stipulate, amongst other requirements, that the applicant shall have to pass a written examination as per the syllabus prescribed by the DGCA for extension of rating to include additional types of helicopters on PPL (H), CPL (H), and ATPL (H) respectively. This part of the CAR lays down the main topics of syllabus for the written examination and flying training along with the hours of instruction required for each topic for compliance for endorsement of these licenses.

This CAR is issued under the provisions of clause 5 of Sections F, K and N of Schedule II and Rule 133A of the Aircraft Rules, 1937.

2. For the purpose of training and operations, helicopters are classified into three groups as follows:

- |         |   |
|---------|---|
| Group 1 | Single engine helicopters.  |
| 1A      | Single engine helicopters with reciprocating engines.                         |
| 1B      | Single engine helicopters with turbine-powered engines of 3,180 kg. or less.  |
| 1C      | Single engine helicopters with turbine-powered engines of more than 3,180 kg. |
| Group 2 | Multi engine helicopters.   |
| 2A      | Multi engine turbine helicopters of 3,180 kg. or less.                        |
| 2B      | Multi engine turbine helicopters of more than 3,180 kg.                       |
| Group 3 | Helicopters with maximum certified take off mass of 5,700 kg and above.       |

Groups of classification of helicopters are given in a tabular form in Appendix 'A'.

### **3. SYLLABUS**

- 3.1 Ground training syllabus for extension of rating on helicopters is laid down in Appendix 'B' but shall not be less than the theoretical programme established by the manufacturer. Training syllabus for extension of rating from single engine to another single engine helicopters is given in Appendix 'C'.
- 3.2 Training syllabus for extension of rating from a single engine to multi engine helicopters is given in Appendix 'D'.
- 3.3 Training syllabus for extension of rating on multi engine helicopters of similar type within the same group and from Group 2 and 3 helicopters to Group 1 helicopters is given in Appendix 'E'.
- 3.4 Training syllabus for extension of rating for non-similar type of Multi engine helicopters within the same group is given in Appendix 'F'.
- 3.5 Flying training syllabus for extension of rating from Group 2 (multi engine) helicopters to helicopters in Group 3 (MTOM 5700 kg and above) is given in Appendix 'G'.
- 3.6 Training conducted at manufacturer or international training organisation approved by authorities such as FAA/JAA/EASA shall be accepted for extension of ratings.
- 3.7 Helicopter types and variant are defined in Appendix 'H'.
- 3.8 For helicopters above 3,180 kg the pilot shall have 3 months experience and 150 h flying on type before undergoing training on any new type.

**Note:** Flight Synthetic Training Devices Helicopter FSTD(H) referred in this CAR shall be approved in accordance with the JAR FSTD(H) standard or an equivalent standard acceptable to DGCA.

### **4. Requirements of flying more than one type of helicopter.**

- 4.1 A pilot may operate more than one helicopter type from one and/or the other group indicated in para 2 above, subject to the following conditions:
  - (a) The procedure as described in the Operations Manual shall be strictly adhered to and the pilot has a valid license for the type helicopter.
  - (b) the pilot has a minimum of 2,000 h flying experience of which not less than 1,000 h as PIC on helicopters; and
  - (c) 300 h as PIC either in single or multiengine helicopters as relevant; and
  - (d) 50 h on each type of which 2 h in the last 90 days; and

- (e) A proficiency check has been conducted within the last 6 month on type and a proficiency check has been performed on any additional type within the same Group during a 12 month period; and
- (f) Meets the recurrent training requirements on type; and
- (g) Operations are conducted in the same environment i.e., offshore, mountain, EMS, or if the environment is different the pilot has 300 h previous relevant experience.

4.2 For helicopters above 3,180 kg the following additional requirements apply:

- (a) Not more than 2 helicopters types in commercial air transport within one day; and
- (b) On the additional type he has not less than a month and 50 h flying before he can fly on another type.

4.3 For helicopters above 5,700 kg only one helicopter type of that group during one commercial air transport duty period; and a proficiency check is performed every 6 month on each type above 5,700 kg.

4.4 In any case not more than 2 helicopter types shall be operated in air transport within one commercial air transport duty period.



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APPENDIX 'A'

Grouping of Helicopters

Group 1	Group 2	Group 3
<u>Group 1A</u> SEP	<u>Group 2 A</u> MET ≤ 3,180 kg	MET > 5,700 kg
<u>Group 1B</u> SET ≤ 3,180 kg	<u>Group 2 B</u> MET > 3,180 kg	
<u>Group 1C</u> SET > 3,180 kg		

SEP: Single Engine Piston helicopter  
 SET: Single Engine Turbine helicopter  
 MET: Multi Engine turbine helicopter

APPENDIX 'B'

**Ground Training Syllabus for Extension of Helicopter Ratings**

S.No	DESCRIPTION	THEORY (Hrs.)
1	<p><b>General</b></p> <ul style="list-style-type: none"> <li>• General Description, and leading particulars</li> <li>• Dimensions</li> <li>• Entry, exit, emergency exits</li> <li>• Skid landing gear as applicable</li> <li>• Ground Handling</li> <li>• Mooring of Helicopter</li> <li>• Seats</li> <li>• Emergency equipment (Axe, Portable fire extinguisher, First Aid Kit).</li> <li>• Weight and CG limitations</li> <li>• Demarcations of loading</li> <li>• Ventilation System, Air Conditioning System as applicable</li> <li>• Noise abatement panels.</li> </ul>	2
2	<p><b>Rotor System</b></p> <p><b>Main Rotor</b></p> <ul style="list-style-type: none"> <li>• Brief Description of Main Rotor Blade and Hub, Mast movement indication and NR indication.</li> <li>• Upper Control of Main Rotor</li> <li>• Tracking and Balancing procedure</li> </ul> <p><b>Tail Rotor or anti torque</b></p> <ul style="list-style-type: none"> <li>• Description of system: conventional, fenestron, notar</li> <li>• Rotor Blade, Hub &amp; Upper controls</li> <li>• Dynamic balancing or rigging</li> </ul>	2
3	<p><b>Transmission</b></p> <ul style="list-style-type: none"> <li>• MGB <ul style="list-style-type: none"> <li>➤ Description</li> <li>➤ Power Train</li> <li>➤ Oil System</li> </ul> </li> <li>• Description and Operations of AGB, TGB</li> <li>• Tail Drive Shaft, Rotor Brake system</li> <li>• Diagnosis of Transmission System.</li> </ul>	2
4	<p><b>Flight Control System</b></p> <ul style="list-style-type: none"> <li>• Concept of Control</li> <li>• Main rotor Lower Control System Collective &amp; Cyclic longitude with Force feel / Trim Actuator</li> <li>• Main rotor cyclic lateral with Force feel / Trim Actuator</li> <li>• Tail rotor Control System</li> </ul>	1
5	<p><b>Hydraulic System</b></p> <ul style="list-style-type: none"> <li>• Flight Control Hydraulic System Basic Circuit</li> <li>• Hydraulic pump</li> <li>• Hydraulic Package</li> </ul>	2

	<ul style="list-style-type: none"> <li>• Hydraulic Actuators</li> <li>• Rotor Brake Details</li> <li>• Cockpit Indications</li> </ul>	
6	<p><b>Engine</b></p> <ul style="list-style-type: none"> <li>• Introduction, Basic construction, Descriptions Dimensions &amp; Weight, Ratings</li> <li>• Conventional Engine Control, FADEC concepts, as applicable</li> <li>• Engine Fuel System operations, Emergency Fuel Manual control operation Engine Oil System, Engine Air System Fire Extinguishing System, Drain System</li> <li>• Helicopter fuel system operation</li> <li>• Engine starting, Particle separator (where applicable)</li> </ul>	3
7	<p><b>Electrical</b></p> <ul style="list-style-type: none"> <li>• DC Power generation &amp; distribution system</li> <li>• AC Power generation &amp; distribution system</li> <li>• Engine Starting System</li> <li>• Engine Control System</li> <li>• Fire detection and extinguishing</li> <li>• Hydraulic System</li> <li>• Fuel System</li> <li>• Lighting system</li> <li>• Centralised warning system</li> <li>• Air Conditioning System (where applicable)</li> <li>• Smoke detectors</li> <li>• Engine Failure Warning Unit</li> </ul>	3
8	<p><b>Instruments</b></p> <ul style="list-style-type: none"> <li>• Description of Instrument Panel</li> <li>• Stand by Gyro Horizon</li> <li>• Engine Instruments</li> <li>• Fuel Display management system</li> <li>• Hydraulic and transmission instruments</li> <li>• Miscellaneous Instruments <ul style="list-style-type: none"> <li>➤ OAT, MMI, A/C clock</li> <li>➤ Oxygen systems (where applicable)</li> </ul> </li> </ul>	3
9	<p><b>AFCS (where applicable)</b></p> <ul style="list-style-type: none"> <li>• Introduction to AFCS, Principle of operations &amp; AFCS functions</li> <li>• System components</li> <li>• System operation</li> <li>• Fly through modes, harmonization and calibration of AHRS</li> </ul>	3
10	<p><b>Avionics(as applicable)</b></p> <p>All Avionics system of the helicopter</p> <ul style="list-style-type: none"> <li>➤ ICS, VHF (AM) Systems</li> <li>➤ HF (SSB), ADF Systems</li> <li>➤ Radio Altimeter, Weather Radar, ATC Transponder</li> <li>➤ EFIS, RMS</li> <li>➤ GPS, ELT</li> </ul>	5

	<ul style="list-style-type: none"> <li>➤ FDR &amp; CVR, VOR &amp; DME &amp; ILS</li> <li>➤ VOR ILS &amp; DME</li> </ul>	
11	<b>Brief Maintenance Procedures</b> <ul style="list-style-type: none"> <li>• Pre flight and Post flight Checks</li> <li>• Refuelling and De-fuelling</li> <li>• Hydraulic oil &amp; Lubricating oil checks and replenishments (List of POL's)</li> </ul>	2
.12	<b>Performance</b> <ul style="list-style-type: none"> <li>• Airworthiness FAR/JAR 27 /29 Performance (Category A and B flight profiles)</li> <li>• Operational ICAO Annex 6 Performances classes: single engine helicopters operating only in performance Class 3, Applying category B, T/O and LDG profiles, hover in and out of ground effect as per HFM performance chapter.</li> <li>• Multi engine operating in accordance with performance Class 1&amp; 2 when certificated in category A and applying flight profiles as per HFM category A performance chapter.</li> <li>• Relation between Categories A and B, and Performance levels Classes 1,2.</li> <li>• Application to the different heliports types : clear heliport, restricted and elevated heliports.</li> </ul>	2
<b>Total</b>		<b>30 Hrs.</b>

**Note:**

1. The above syllabus may be suitably modified in accordance with the complexities in terms of equipment/instruments installed on the type of helicopters.
2. The theory hours of ground training given above are generic in nature, however the hours specified in the respective appendix for a type of helicopter may be adopted.
3. The syllabus of training and the theory hours followed by the manufacturer at their facilities, shall be acceptable.

Appendix 'C'

Training syllabus for extension of rating from single engine to another single engine helicopter type

Helicopter Type	Flying Training	Simulator Training	Remarks
SEP to SEP	5 hrs+ test	Not applicable	**Skill Test Day: 0.45 hrs
SEP/SET to SET under 3,180kg	5 hrs+ test	Using FS C/D: 2 hrs H and at least 6 hrs total Using FTD 2/3: 4 hrs H and at least 6 hrs total	** Skill Test - Day 0.45 hrs - Night 0.45 hrs
SEP/SET to SET above 3,180kg	8.00 hrs+ test	Using FS C/D: 2 hrs H and at least 10 hrs total Using FTD 2/3: 4 hrs H and at least 10 hrs total	** Skill Test - Day 0.45 hrs - Night 0.45 hrs

**Ground training:** As per manufacturer theoretical training

\*\* **Skill test:** As applicable



Appendix 'D'

**Flying training syllabus for extension of rating  
from a single engine to multi engine helicopters**

Sortie No.	Exercise	Duration		Progressive	
		D	N	D	N
1	<ul style="list-style-type: none"> <li>• External &amp; pre-start checks &amp; start up.</li> <li>• Taxi, Take off &amp; landing</li> <li>• Demo : Effects of controls <ul style="list-style-type: none"> <li>➤ Use of trim</li> <li>➤ Collective release</li> <li>➤ Rudder &amp; turn coordination</li> <li>➤ Engine handling (Power management)</li> </ul> </li> <li>• Practice <ul style="list-style-type: none"> <li>➤ Climb &amp; descent, Accl. &amp; Deccl, Med turns.</li> <li>➤ Hover &amp; ground exercises</li> </ul> </li> </ul>	1:00	-	1:00	-
2	REPEAT exercise – 1	1:00	-	2:00	-
3	<ul style="list-style-type: none"> <li>• Checks, Procedures &amp; Start up. Pick up, hover &amp; ground exercises. Circuit and landings (with &amp; without AFCS). Hover and Fwd Speed Landing, slope landings Single Engine in flight. Practice Emergency, in flight fire and shut down procedure</li> </ul>	1:00	-	3:00	-
4	<ul style="list-style-type: none"> <li>• Advanced training Performance Class 1&amp;2 to clear and restricted heliport, Circuit &amp; landing with <ul style="list-style-type: none"> <li>➤ Practice Single Engine (Training mode).</li> <li>➤ Engine failure at TDP &amp; LDP, DPATO&amp;DPBL</li> <li>➤ .Practice engine emergencies,</li> </ul> </li> </ul>	1:00	-	4:00	-
5	Repeat Ex. 4	1:00	-	5:00	-
6	Circuit and landing.	0:45	-	5:45	-
7	<ul style="list-style-type: none"> <li>• Take off</li> <li>• Leave circuit</li> <li>• General handling</li> <li>• Climb and descent <ul style="list-style-type: none"> <li>- Acceleration &amp; deceleration control</li> <li>- Turns 30° and 45° bank</li> </ul> </li> <li>• Demo AFCS modes</li> <li>• Rejoin, C &amp; L, slope landings.</li> <li>• Practice other Emergencies.</li> </ul>	0:45	-	6:30	-

8	<b>Navigation</b> <ul style="list-style-type: none"> <li>• Use of radio navigation means: VOR, DME, NDB &amp; GPS</li> </ul>	1:30	-	8:00	-
9	<b>Navigation</b> <ul style="list-style-type: none"> <li>• Repeat of 8</li> </ul>	1:30	-	9:30	-
10	<b>Instrument Flying</b> <ul style="list-style-type: none"> <li>• Acceleration, deceleration</li> <li>• Climbing turns</li> <li>• Medium Level turns (Rate1 and 2)</li> <li>• Steep turns 45°</li> <li>• Descending turns</li> <li>• Autorotation</li> <li>• Instrument let down</li> </ul>	1:15	-	10:45	-
11	<b>Instrument Flying</b> <ul style="list-style-type: none"> <li>• Repeat of 10 with emphasis on instrument let down</li> </ul>	1:15	-	12:00	-
10	<b>Night Flying</b> <ul style="list-style-type: none"> <li>• Cockpit lighting system familiarization</li> <li>• Cockpit light management</li> <li>• start up and T/O</li> <li>• C&amp;L</li> <li>• Emergencies</li> </ul>	-	0:45	12:00	0:45
12	<b>Night Flying</b> <ul style="list-style-type: none"> <li>• Start up and T/O</li> <li>• C&amp;L</li> </ul>	-	0:45	12:00	1:30
	<b>Training Total</b>	<b>13.30 Hrs</b>			
13	<b>Skill Test – Day</b>	0:45	-	12:45	1:30
14	<b>Skill Test – Night</b>	-	0:45	12:45	2:15
	<b>Total</b>	<b>15.00 Hrs.</b>			

Appendix D Contd.

The breakdown of training profile for the issue of an initial type rating from single engine to multi engine helicopters.

Helicopter Types	In Helicopter	In Helicopter and FSTD associated credit
SEP&T to MET JAR/FAR 27 and 29 with less than 5,700Kg	8 hrs	Using FS C/D: 2 hrs H and at least 10 hrs total Using FTD 2/3: 4 hrs H and at least 10hrs total
MET/ MEMP with more 5,700 Kg	10 hrs	Using FS C/D: 2 hrs H and at least 12 hrs total Using FTD 2/3: 4 hrs H and at least 12hrs total

**Ground training:** As per above and Manufacturer theoretical training programme

**I/R extension:** at least 2.00 hours using FS level C/D or FTD level 2/3

**Flight test:** Day: 0:45 hrs; Night: 0:45hrs, to be performed in the helicopter. IFR test .1:30 hrs may be performed in a FS level C/D or FTD level 2/3.

APPENDIX 'E'

**Training syllabus for additional type rating of similar type within the same group, from one group to the other, and from Group 2 and 3 helicopters to Group 1 helicopters**

Helicopter Types	In Helicopter	In Helicopter and FSTD associated credit
<b>Single Engine</b>		
SEP to SEP	5 hrs	Not applicable
SET to SET	2 hrs	Using FS C/D: 1 hrs H and at least 3 hrs total Using FTD 2/3: 1 hrs H and at least 4 hrs total
SET difference training	1 hrs	Not Applicable
<b>Multi turbine</b>		
MET 2 A to MET 2 B	3 hrs	Using FS C/D: 1 hrs H and at least 4 hrs total Using FTD 2/3: 2 hrs H and at least 5 hrs total
MET within the same Group difference training	1hrs	Not Applicable
MET 3 to MET 3	5 hrs	Using FS C/D: 1 hrs H and at least 6 hrs total Using FTD 2/3: 2 hrs H and at least 7 hrs total
<b>Multi to Single engine</b>		
MET 2 & 3 to SEP	5hrs	Not Applicable
MET 2 & 3 to SET	5hrs	Using FS C/D: 2 hrs H and at least 6 hrs total Using FTD 2/3: 4 hrs H and at least 6hrs total

**Ground training:** As per Manufacturer theoretical training programme

**I/R extension:** at least 2.00 hours using FS level C/D or FTD level 2/3

**Flight test:** Day: 0:45 hrs; Night: 0:45hrs, to be performed in the helicopter. IFR test 1:30 hrs may be performed in a FS level C/D or FTD level 2/3.

APPENDIX 'F'

**Flying training syllabus for extension of rating  
for non-similar type of Multi engine helicopters within the same group.**

Sortie No.	Exercise	Duration		Progressive		Total
		D	N	D	N	
1	1. Demo – External & pre start checks & start up. 2. Taxi 3. T.O & Ldg applying different flight profiles (Cat A/B) and (Class 1&2) 4. Demo : Effects of controls <ul style="list-style-type: none"> <li>➤ Use of cyclic trim</li> <li>➤ Collective function</li> <li>➤ Rudder &amp; turn coordination</li> <li>➤ Engine handling (Power management)</li> </ul> 5. Practice <ul style="list-style-type: none"> <li>➤ Climb &amp; descent, Accl. &amp; Deccl, Med turns.</li> </ul> 6. Hover practice & ground exercises	1:00	-	1:00	-	1:00
2	1. Take off 2. Leave circuit 3. General handling <ul style="list-style-type: none"> <li>➤ Climb and descent</li> <li>➤ Accl &amp; Deccl</li> <li>➤ Steep Turns</li> </ul> 4. Demo AFCS 5. Rejoin, C & L, slope landings 6. Practice specific Emergencies	1:00	-	2:00	-	2:00
3	Repeat Ex. 2	1:00	-	3:00	-	3:00
4	<b><u>Instrument Flying</u></b> 1. Acceleration, Deceleration 2. Climbing turns 3. Medium Level turns(Rate 1&2) 4. Steep turns (+ 45°) 5. Descending turns 6. Autorotation 7. Instrument approach & visual landing	1:00	-	4:00	-	4:00
5	<b><u>Night Flying</u></b> 1. Cockpit lighting system familiarisation. 2. Cockpit light management	-	0:45	0:45	-	4:45

	3. Start up and take off 4. C & L 5. Emergencies					
	<b>Total</b>	<b>5:30 Hrs</b>				
6	<b>Skill Test – Day</b>	0:45	-	0:45		5:30
7	<b>Skill Test – Night</b>	-	0:45		1:30	6:15
8	<b>IFR Test</b>	0:45	-	01:45		7:00
	<b>Total</b>	<b>7:00 Hrs</b>				

**The breakdown of training profile for extension of ratings  
on non similar multi engine helicopters**

<b>Helicopter</b>	<b>Flying Training</b>	<b>In helicopter and FSTD Training</b>	<b>Remarks</b>
MET to MET	5:00 Hrs + test	Using FS C/D: 1 hrs H and at least 6 hrs total Using FTD 2/3: 2 hrs H and at least 7 hrs total	Test (Day) : 0:45 Test (Night): 0:45 IR Test : 1:00

Ground training : As per Manufacturer theoretical training Programme

It is assumed that a pilot is qualified by Day/Night and Instrument Rated on the previous type of twin-engine helicopter.

\*\* Total flying training includes instrument flying practice a type specific simulator followed by an IR Test on type. Simulator Hours are to be carried out on Full Flight Simulator on a level C/D. In case of non-availability of simulator or if pilot does not hold IR Rating, full syllabus of 15:00 hours will be carried out as given in Appendix 'F'.

**NOTE:** A skill test may be carried out in Flight Simulator (FS) of level C/D. In addition when a FS or a FTD are available take off & landing procedures following an engine failure should be performed in the simulator.

**APPENDIX 'G'**

**Flying training syllabus for extension of rating from Group 2 (multi engine) helicopters to helicopters in Group 3 (MTOM 5700 kg and above)**

a) Syllabus for extension of rating from Group 2 to Group 3 is as follows:

Training		
i)	Basic exercises and Emergencies	05:30
ii)	Instrument flying	02:15
iii)	Night flying	02:15
	Total	10.00 Hrs
Testing		
i)	Skill test (day)	00:45
ii)	Skill test (night)	00:45
iii)	Skill test (IFR)	01:30

b) Syllabus for extension of helicopter rating for pilots having previous experience on helicopters in Group III is as follows:

<b>Helicopter</b>	<b>Flying Training</b>	<b>Simulator Training</b>	<b>Remarks</b>
MET to MET above 5.700 kg	5:00 Hrs + test	Using FS C/D: 1 hrs H and at least 6 hrs total Using FTD 2/3: 2 hrs H and at least 7 hrs total	Test (Day) : 0:45 Test (Night):0:45 IR Test :1:00

- Skill test may be carried out in Full Flight Simulator (FFS) level C/D. In addition when a FFS or a FTD are available take off & landing procedures following an engine failure should be performed in the simulator.

APPENDIX 'H'

**List of types of helicopter:**

- (a) If a dividing line exists in column 2, this indicates a variant,
- (b) the symbol (D) between variants of types of helicopter used in column 3 indicates that differences training is required;
- (c) although the license endorsement (column 4) contains all helicopters listed in column 2, the required familiarization or differences training has still to be completed;
- (d) The specific variant on which the skill test for the type rating has been completed will be recorded according to CAR.

1 Manufacturer	2 Helicopter	3	4 Licence endorsement
<b>1. Agusta</b>			
- SE Turbine -	A 119 KOALA		A119
- ME Turbine -	A 109 A	(D)	A109/109K/109E/109LUH/ A109S
	A 109 A II		
	A 109 C		
	A 109 K2		
	A 109 E		
	A 109 LUH		
	A 109 S		
	AB 139		AB139
<b>2. Agusta-Bell</b>			
- SE Turbine -	Agusta Bell 206 A	(D)	Bell206/206L
	Agusta Bell 206 B		
	Agusta Bell 206 L		
- ME Turbine -	Agusta Bell 212	(D)	Bell212/412
	Agusta Bell 412		
	Agusta Bell 412 SP		
<b>3. Agusta Sikorsky</b>			
- ME Turbine -	Agusta S-61 N 1		SK-61
<b>4. Bell Helicopters</b>			
- SE Piston -	Bell 47 G-2 Bell 47 G-5		Bell 47



1 Manufacturer	2 Helicopter	3	4 Licence endorsement
<b>-SE Turbine-</b>	Bell 206 A Bell 206 B Bell 206 B 2 Bell 206 B 3	(D)	Bell 206/206L
	Bell 206 L		
	Bell 206 L-1		
	Bell 206 L-3		
	Bell 206 L-4		Bell 214
	Bell 214 B Bell 214 B 1		Bell 407
	Bell 407	(D)	Bell 212/412
Bell 212			
Bell 412 Bell 412 SP Bell 412 HP Bell 412 EP	Bell 214ST		
Bell 214 ST	(D)		Bell 222/230/430
Bell 222 Bell 222 A Bell 222 B Bell 222 UT Bell 222 SP			
Bell 230			
Bell 430			Bell 427
Bell 427	<b>5. EH Industries</b>		
<b>- ME Turbine</b>	EH 101		EH 101
<b>6. Eurocopter</b>			
<b>- SE Turbine -</b>	AS 350 B AS 350 B 1 AS 350 B 2 AS 350 D AS 350 B A AS 350 BB	(D)	AS350/350B3
	AS 350 B 3		

1 Manufacturer	2 Helicopter	3	4 Licence endorsement	
	EC 130 B 4		EC130B4	
	EC 120		EC120	
	SE 3160 SA 316 B SA 316 C	(D)	SA316/319/315	
	SA 319 B			
	SA 315 B			
<i>- ME Turbine -</i>	AS 332 C AS 332 C 1 AS 332 L AS 332 L 1	(D)	AS332/332L2/EC 225LP	
	AS 332 L 2			
	EC 225 LP			
	AS 355 E AS 355 F AS 355 F 1 AS 355 F 2	(D)	AS355/355N	
	AS 355 N			
		EC 135 T1 CDS EC 135 P1 CDS	(D)	EC135
		EC 135 T1 CPDS EC 135 P1 CPDS EC 135 T2 CPDS EC 135 P2 CPDS		
MBB-BK 117 A-1 MBB-BK 117 A-3 MBB-BK 117 A-4 MBB-BK 117 B-1 MBB-BK 117 B-2		(D)	BK117	
MBB-BK 117 C-1				
MBB-BK 117 C-2				
SA 365 N SA 365 N 1 AS 365 N 2		(D)	SA 365 N AS 365 N	
AS 365 N 3				

1 Manufacturer	2 Helicopter	3	4 Licence endorsement
	EC 155 B/B1		EC155
<b>7. HAL</b>			
- SE Turbine	Chetak Cheetah		SA 316 315
- ME Turbine	DHRUV		DHRUV
<b>8. Hughes/Schweitzer</b>			
- SE Piston -	269 A 269 B 269 C 300 C 300 CB 300 Cbi		HU269
- SE Turbine -	330 SP 333		SC330
<b>9. McDonnell Douglas</b>			
- SE Turbine -	Hughes 369 D Hughes 369 E Hughes 369 HE Hughes 369 HS MD 500 N (NOTAR) MD 520 N MD 600	(D)	HU369/MD500N/600
- ME Turbine -	MD 900 MD 902	(D)	MD900/902
<b>10. Robinson</b>			
- SE Piston	R 22 R 22 A R 22 B		R22
	R 44 R44 Raven R44 Raven II		R44

1 Manufacturer	2 Helicopter	3	4 Licence endorsement
<b>11.Sikorsky</b>			
<b>- ME Turbine -</b>			
	S 76 A S 76 A+ S 76 A++	(D)	S 76/76B/76C/76C+
	S 76 B		
	S 76 C		
	S 76 C+ S 76 C++		
	S-92 A		
	<b>12. Ministry of Aviation Industry of Russia</b>		
<b>- ME Turbine -</b>	MIL Mi-8	(D)	Mi 8/ Mi 17/ Mi 171/ Mi 172
	MIL Mi 17 MiL Mi 171 MiL Mi 172		