Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of the
Environment, Transport, Energy and Communications DETEC

Federal Office of Civil Aviation FOCA
Division Helicopter Flight Operations

PPL(H) Night Rating Course

Applicant's license number: _____

Applicant

Last name:_____ First name: _____ Date of birth:_____

Place of birth:_____ Place of origin: _____ Nationality: _____

Postal code:_____ City: _____ Street:_____

Phone/mobile: _____ Phone/fax office:_____

e-mail: _____ Signature of applicant:_____

ATO

Name: _____registration Nr:_____

Training (max. 6 month)

Date start: _____ Date end: _____

Flight Experience (Minimum requirements before starting practical night rating course at night)

PPL(H): _____ ☐

Grand total Hours HEL(H): _____

Total Hours HEL after PPL(H) (min.100 hours): _____ SOLO / PIC (min. 60 hours): _____

Cross country (min. 20 hours): _____

Night rating training course

Night flying theoretical knowledge instruction (min. 5 hours) _____ ☐

[1;2] HEL Dual instrument instruction (min. 10 hours): _____

Total NVFR (min.5 hours HEL):_____ Total NVFR Hours DC (min.3):_____

Total NVFR cross country (min.1 hour): _____

Total NVFR landings:_____

Total NVFR solo circuits incl. take-off and landing (min.5): _____

[1]*may be combined with CPL(H) modular training*
[2]*an applicant with IR in an aeroplane or TMG shall be credited with 5 hours*

The trainee has received the flight instruction required by AMC1 FCL.810(b) and he/she is qualified to exercise the privileges of the licence at night. The trainee's logbook has been endorsed, and a certificate of satisfactory completion has been issued.

Date:.................................... FI Signature / License Nr: ....

Chief FI signature / License Nr: ....

Remarks / Notes:

PPL(H) Night Rating Course

Theoretical knowledge (all items must be covered)

	ITEM	COMPLETED	FI Visa

Air Law

	ITEM	COMPLETED	FI Visa
1	Aircraft equipment / MEL / TM 050-40	☐	
2	Aircraft lighting / collision avoidance	☐	
3	Airport lights (PAPI, TWY, ALS, obstruction)	☐	
4	Airspace and facilities available	☐	
5	ATC Flight plan	☐	
6	International flights (F / D / I / A)	☐	
7	Night flight activity (Mil / Civil / Rescue)	☐	
8	NVFR CH air law 748.121.11 art 43)	☐	
9	Sunrise / Sunset	☐	
10	Instrument lighting	☐	

Anatomy of the eye (see page 7)

	ITEM	COMPLETED	FI Visa
11	Anatomy	☐	
12	Physiology	☐	

Night Vision Human Factors (see page 7)

	ITEM	COMPLETED	FI Visa
13	Aircraft design limitations	☐	
14	Human performance	☐	
15	Illusions, Disorientation	☐	
16	Light Level	☐	
17	Night vision technique	☐	
18	Self-imposed stresses	☐	
19	Weather / Environmental conditions	☐	

Flight Procedures / Planning

	ITEM	COMPLETED	FI Visa
20	Behaviour in case of emergency	☐	
21	Cockpit management	☐	
22	External lights (position lights / strobes / landing light)	☐	
23	Instrument scanning techniques	☐	
24	Mountain flying tactics	☐	
25	Navigation principles	☐	
26	Night preflight inspection	☐	
27	Obstacle lighting (Towers, antennas, cranes)	☐	
28	Planning and use of safety altitude	☐	
29	Radio altimeter techniques*	☐	

PPL(H) Night Rating Course

Theoretical knowledge cont. (all items must be covered)

ITEM		COMPLETED	FI Visa

Flight Procedures / Planning cont.

		COMPLETED	FI Visa
30	Reconnaissance / performance	☐	
31	Risk assessment (obstacles, light level, weather, wind)	☐	
32	Take off / Landing procedures / steep approach	☐	
33	Use of cockpit lighting (red, white light), flash light	☐	
34	Instrument systems or functions and errors	☐	
35	Map marking for use under cockpit lighting	☐	
36	Radio navigation principles	☐	

Emergency / Limitations

		COMPLETED	FI Visa
37	A/C systems failure*	☐	
38	Autopilot / SAS failure (if applicable)*	☐	
39	Electrical failures / total / partial	☐	
40	Engine failure / SE / ME*	☐	
41	Internal / External lighting failure	☐	
42	Limitations*	☐	
43	Master Warning / Caution*	☐	

Dangers

		COMPLETED	FI Visa
44	Accident review	☐	
45	Blinding (light, snow, rain, etc.)	☐	
46	CFIT (controlled flight into terrain)	☐	
47	Disorientation at night	☐	
48	Inadvertent IMC (avoidance and escape)	☐	
49	Icing conditions (avoidance and escape)	☐	
50	Loss of visual reference (white out, brown out)	☐	
51	Precipitation (mist / fog / snow)	☐	
52	Rotor clearance	☐	
53	Traffic avoidance	☐	
54	Vortex	☐	
55	Weather deterioration	☐	
56	Wind shield defog	☐	
57	Wind shield reflections	☐	

*see applicable RFM

PPL(H) Night Rating Course

FLYING TRAINING

Flight Instructor(s) in charge of practical training.

Name: ....
Licence Nr: _____

Name: ....
Licence Nr: _____

Training should be completed in different light levels and at minimum 2 different nights

	Light Level:		
Date Flight 1:..	Light Level:	P	M	H
Date Flight 2:..	Light Level:	P	M	H
Date Flight 3:..	Light Level:	P	M	H
Date Flight 4:..	Light Level:	P	M	H
Date Flight 5:..	Light Level:	P	M	H

Codes and Grades

GRADES	OPERATIONAL ENVIRONMENT		LIGHT LEVEL	AIR WORK [1]	NAV EQUIPMENT [2]
X Demo FI	**1** Airport	**6** Unlighted obstructed	**P** POOR	**1** Eight Turns	**V** VOR - DME
P Passed	**2** Heliport	**7** Instrument DAY	**M** MEDIUM	**2** Slow Flight	**G** GPS / GNSS
F Failed	**3** Lighted open area	**8** Instrument NIGHT	**H** HIGH	**3**	**M** Moving Map
S Solo	**4** Unlighted open area	**9** FSTD(H)		**4**	**N** None
	5 Lighted obstructed				

Note / Definitions: For the purpose of flight training, the light levels are defined as follows:

POOR: No visible details or contrast on the earth surface

MEDIUM: Visible ground details or contrast (ex: transitions from forests to agriculture can be identified)

HIGH: Details on the earth surface can be easily identified. (even visible shadows)

PPL(H) Night Rating Course

FLYING TRAINING

ALL EXERCISES SHOULD BE REPEATED AS NECESSARY UNTIL THE STUDENT ACHIEVES A SAFE AND COMPETENT STANDARD

DUAL INSTRUMENT FLIGHT INSTRUCTION (Day or Night)

[1]Basic manoeuvres (climbs, descents, turns)

	1	2	3	4	5	6	7	8	9	10
Air work:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1]Explain and demonstrate transition to instrument flight from visual flight

	1	2	3	4	5	6	7	8	9	10
Air work:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1]Explain and revise recovery from unusual attitudes by sole reference to instruments

	1	2	3	4	5	6	7	8	9	10
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1]Explain and demonstrate the use of radio navigation aids, to include position finding and tracking

	1	2	3	4	5	6	7	8	9	10
Nav equipment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1]Explain and demonstrate the use of radar assistance

	1	2	3	4	5	6	7	8	9	10
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1]Simulated inadvertent entry into IMC (not on base leg or final)

	1	2	3	4	5	6	7	8	9	10
Ops. environment:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Grade:	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

RMK

[1] up to 50% of the required flight training may be completed in a FSTD(H) . However, all items within each exercise should be conducted in a helicopter in-flight.

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FLYING TRAINING

ALL THE FOLLOWING EXERCISES SHALL BE CONDUCTED AT NIGHT

NORMAL

Ground, Hover and Taxi (normal use and adjustment of landing light; higher and slower hover than by day; avoidance of unintended sideways and/or backwards movements)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ops. environment:															
Grade:															

RMK

Traffic pattern (5 solo circuits on airport / heliport incl. night take-off techniques, nicht circuit technique & constant angle night approaches with and without visual approach aids)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ops. environment:																									
Grade:																									

INFLIGHT MANEUVERS

[1] Inflight air work / flight tactics (eight turns, slow flight, etc...)

	1	2	3	4	5	6	7	8	9	10
Exercise:										
Grade:										

RMK

[2] Cross-country navigation flight DC and as SPIC with Ldg. / Min.1 flight

	From	To	Light Level	Nav equip.
Nav. Flight 1:				
Nav. Flight 2:				
Nav. Flight 3:				

ABNORMAL PROCEDURES

Ground, Hover and Taxi without landing light

	1	2	3	4	5	6	7	8	9	10
Ops. environment:										
Grade:										

RMK

Traffic pattern without landing light

	1	2	3	4	5	6	7	8	9	10
Ops. environment:										
Grade:										

RMK

Steep appr. 10°< angle < 20° / clear area

	1	2	3	4	5	6	7	8	9	10
Ops. environment:										
Grade:										

RMK

Traffic pattern without cockpit instrument lights

	1	2	3	4	5	6	7	8	9	10
Light Level:										
Grade:										

RMK

Outside landing (Additional safety exercise)

	1	2	3	4	5	6	7	8	9	10
Light Level:										
Grade:										

RMK

PPL(H) Night Rating Course

Licence Nr.

FLYING TRAINING

EMERGENCY PROCEDURES / KNOWN TERRAIN / LIGHTED SURFACE

Simulated engine failures / Autorotations (Power recovery)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Hydraulic failure (*if applicable)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

TR malfunctions / failures / (NO GND CONTACT)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

OEI operations (*if applicable)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Fuel control / governor failure (*if applicable)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Electrical failures (see RFM)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

EMERGENCY PROCEDURES

Simulated engine failures / Autorotations / Go around at 200ft/AGL min. (Known terrain / Unlighted surface)

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Other Emergency / specify: ....

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Other Emergency / specify: ....

	1	2	3	4	5	6	7	8	9	10	RMK
Ops. environment:											
Grade:											

Acknowledgement of training   Date: ....Trainee visa: ....

NIGHT FLYING THEORETICAL KNOWLEDGE
Detailed examples of subjects to be instructed in a night flying course are included below.

General Anatomy and Characteristics of the Eye

Anatomy
Overall structure of the eye
Cones
Rodes

Physiology
Types of vision (photopic, mesopic, scotopic)
Day versus night vision
Dark adaption process

Night Vision Human Factors
Night blind spot
Field of view and peripheral vision
Distance estimation and depth perception
Aerial perspective
Binocular cues
Night vision techniques
Vestibular / Somatogravic / Proprioceptive illusions
Visual illusions
Dealing with Spatial Disorientation

Aircraft Design Limitations
Windshield condition
Aircraft instrument design
Aircraft structural obstruction
interior / exterior lights

Human Performance
24 hours diagram

Self-imposed stresses
Drugs, Alcohol, Tabacco
Exhaustion
Hypoglycaemia
Injuries
Physical fitness
Stress & Fatigue (acute vs. chronic, prevention)

Hypoxia
Issues and night vision

Weather / Environmental conditions
Snow, Dust
Haze, Fog
Rain

Light Level
Astronomical lights (moon, star)
Effects of cloud cover
Illumination, luminance, contrast

Flight
Explain the use and adjustment of landing light
Explain night hovering:
- higher and slower than by day;
- avoidance of unintended sideways or backwards movements.
Explain night take-off techniques