



COMCO IKARUS

Maintenance Manual C42 Series

4.2.1 Periodic inspections

Aircraft type: _____

Date of inspection: _____

Call-sign: _____

Serial no.: _____

No. of flight hours _____

No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
1	Clean the aircraft	x	x	3	
2					
3	Engine cowling				
4	Check condition of engine cowling and its attachments; repair damage as required	x	x		
5	Engine Maintenance in accordance with Rotax manual	in accordance with Rotax manual			
6	Engine compartment				
7	Visual inspection of integrity of fire protection mats: - at the fire wall - at the push-rods for the nose wheel steering	x	x		
8	Engine mount				
9	Check condition of engine mount, particularly the rivet connections and attachment screws; check security of screws	x	x		
10	Visual inspection of integrity of heat-resistant silicon sealings at the transitions: - engine mount - fuselage tube - engine mount - nose wheel spar - nose wheel spar - fuselage tube - fuselage tube - A column	x	x		
11	Visual inspection of engine damper blocks for porosity, excessive deformation, cracks, etc.; if necessary, replace affected blocks (the engine must not be removed)		x		
12	Carburettor				
13	Visual inspection of carburettors, especially: - air filter connections - fuel line connections - equalising line connections - attachment of throttle cables - attachment of choke cables - check carburettor supports for cracks	x	x x		
14	Check Bowden cables at their exit at the adjustment screws for wear and grease them; adjust if necessary (synchronisation)	x	x	4.3.1.1	
15	Check condition and attachment of air tubes between carburettor and induction system (pressure sensors in the air filters)	x	x	4.3.1.2	



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
16	Induction system				
17	Check condition and attachment of the induction system hoses (C42 B / E only) and air filter attachment (C42 A), respectively	x	x		
18	Check condition of air filters and clean as required <i>Note:</i> The air filters in the C42 B / E are located in the induction system hoses between the air plenum and the carburettor. The induction system hoses must be dismantled in order that the air filters may be inspected and serviced.		x		
19	Check carburettor heating air flap (C42 B / E only) for freedom of movement	x	x		
20	Fuel system				
21	Visual inspection of connections and hoses for integrity, condition (porosity), leaking and secure attachment	x	x		
22	Visual inspection of tank for leaking	x	x		
23	Check tank for inner cleanliness; clean as required		x	4.3.2.1	
24	Check tank ventilation is free of obstacles (blow through)	x	x		
25	Check fuel filter for dirt; replace, if necessary	x	x		
26	Check electrical fuel pump for - secure fitting of the cable connections - secure fitting/leaking of line connections - every 300 hours, check flow capacity	x	x	4.3.2.2	
27	Check fuel valve for freedom of movement	x	x		
28	Cooling system				
29	Visual inspection of cooler condition and check for leaks	x	x		
30	Visual inspection of condition of heat exchanger and check for leaks (C42 B / E only)	x	x		
31	Check cooling system for leaks	x	x		
32	Visual inspection of condition, porosity and secure attachment of hoses; if necessary, replace damaged hoses and attachments and loose clamps	x	x		
33	Check that the correct amount of coolant is in the reservoir; if necessary, fill up with coolant	x	x		
34	Check coolant for oil; if applicable, find out and eliminate the cause	x	x		
35	Coolant change in accordance with Rotax maintenance manual	in accordance with Rotax manual			
36	Oil system				
37	Check condition of oil cooler and for leaks (C42 A only)	x	x		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
38	Visual inspection of condition of heat exchanger and check for leaks (C42 B / E only)	x	x		
39	Check oil tank for amount of oil, condition, leaks and attachment	x	x		
40	Construction year 2005 and younger - visual inspection of condition and attachment of overflow container (on the firewall); empty, if necessary	x	x		
41	Oil and oil filter change	in accordance with Rotax manual			
42	Exhaust system				
43	Check condition of attachment springs and that none are missing	x	x		
44	Check mufflers and manifold for damage, in particular for cracks in the weld seams; if necessary, repair at a specialist workshop	x	x		
45	Check exhaust shroud for secure fitting; if necessary, tighten straps	x	x		
<p>PLEASE NOTE: Every 500 hours the exhaust pipes connected to the silencer on the right side have to be dismantled and the condition of the pipe inside the silencer has to be checked concerning any deformations using a lamp.</p>					
46	Heating				
47	Visual inspection of heating tube in the engine compartment (red tube) and in the cockpit (silver aluminium tube under the instrument panel) for deformation, proper attachment and condition	x	x		
48	Check condition and functionality of heating valve	x	x		
49					
50	Propeller				
51	Service according to the relevant instructions from COMCO IKARUS GmbH	in accordance with COMCO IKARUS GmbH instructions			
52	Check torque moment of propeller screws in accordance with propeller manual		x		
53	Propeller blades				
54	Check for abrasion and damage, check condition of propeller tips and leading edges; repair in accordance with COMCO IKARUS GmbH instructions	x	x		
55	Spinner				
56	Visual inspection for damage	x	x		
57	Check secure fitting of all attachment screws and that none are missing	x	x		
58	Hub				
59	Check hub for damage, in particular for cracks and check condition and secure fitting of attachment screws (spinner must be removed)		x		
60	Check spinner plate for cracks near the adapter	x	x		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
61	Check propeller clearance (ground, cowling)	x	x		
62	Check propeller pitch control mechanism in accordance with COMCO IKARUS GmbH instructions (only if a variable pitch propeller is installed)	in accordance with COMCO IKARUS GmbH instructions			
63					
64	Nose wheel landing gear				
65	Check nose gear fairing for secure fitting and damage; repair or replace as required	x	x		
66	Check wheel pant and wheel pant bracket for secure fitting and damage; repair or replace as required	x	x		
67	Check attachment of nose wheel spar to fuselage tube; check screws in and under the engine mount for secure fitting		x		
68	Check nose wheel fork for deformation and other damage		x		
69	Check suspension rubber boots for damage, porosity, etc. (year of construction before 2003)	x	x		
70	Check functionality and condition of damping spring (year of construction before 2003)	x	x		
71	Check functionality and condition of rubber spring elements above and below nose wheel spar (year of construction 2003 and younger); check particularly for cracks, porosity, deformation; replace as required		x		
72	Check nose wheel fork for play and freedom of movement in direction of rotation and compression	x	x		
73	Check steering rods, joints, push-rods and links of the floor pedals of the nose wheel steering for secure fitting, damage and abrasion	x	x		
74	Clean, grease and secure rod ends of the pedal controls at the pedals and steering rods		x		
75	Check axial attachment screw of the nose wheel fork for secure fitting		x		
76	Grease both journal bearings in the nose wheel spar with a grease press via upper and lower grease nipples		x	4.3.3.1	
77	Tyres				
78	Check tyre for damage, uneven wear, age and tread; replace as required	x	x		
79	Check tyre pressure; adjust appropriately	x	x		
80	Wheel rim				
81	Check for damage, deformation, cracks; replace if necessary	x	x		
82	Check condition of valve	x	x		
83	Check wheel bearings for play and freedom of movement	x	x		
84					



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
85	Main landing gear				
86	Check main landing gear fairing for secure fitting and damage; repair or replace as required	x	x		
87	Check wheel pants and wheel pant brackets for secure fitting and damage; repair or replace as required	x	x		
88	Check cross beam for damage and deformation (visual inspection of beam); check screw connections between fuselage fittings and cross beam for secure fitting (visual inspection under the seats)		x		
89	Check rivet connections between cross beam and joists		x		
90	Check axle tubes (swing axles) for damage and secure fitting; check connections and bearings, in particular plastic spacers between the joists on the cross beam	x	x		
91	Check condition of trailing arm for damage, secure fitting and freedom of movement of the rod ends	x	x		
92	Check condition of spar struts for damage and secure fitting (inspection through baggage bin)	x	x		
93	Check shock absorber rubber boots for damage and porosity; replace as required	x	x		
94	Check functionality, condition and attachment of shock absorbers; pressure check		x	4.3.3.2	
95	Tyres				
96	Check tyres for damage, uneven wear, age and tread; replace as required	x	x		
97	Check tyre pressure, adjust appropriately	x	x		
98	Wheel rims				
99	Check for damage, deformation and cracks; replace if necessary	x	x		
100	Check condition of valves	x	x		
101	Check wheel bearings for play and freedom of movement	x	x		
102	Brakes				
103	Check braking function	x	x		
104	Check attachments of lines to main landing gear	x	x		
105	Check brake system in its entirety for damage and leaks; repair leaks, fill up with brake fluid and ventilate system as required		x	4.3.4.1	
106	Check proper attachment of lines to the brake lever and the brakes	x	x		
107	Visual inspection of brake pads, check for uneven, asymmetrical wear or reaching wear limit; replace pads if necessary	x	x	4.3.4.2	



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
108	Check brake discs for wear and true running; replace as required		X		
109					
110	Wing				
111	Check wing tips/winglets for damage; repair or replace as required	X	X		
112	Visual inspection of covering for any kind of damage and integrity of seams; repair if necessary	X	X		
113	Check wing attachments for play. Move the wing tips up and down and back and forward; if necessary, tighten the M8 attachment screws on the U fittings of the wing attachment (25 Nm)	X	X		
114	Check wing struts and auxiliary struts for damage and secure attachment	X	X		
115	Check wing battens; repair or replace any damage battens	X	X	4.3.5.1	
116	Check the diagonal cables for correct tension Note: This inspection can be done through the open zips of the wing covering and from the cockpit through the wing-fuselage junction	X	X		
117	Ailerons				
118	Visual inspection of the condition of the ailerons	X	X		
119	Check ailerons for freedom of movement	X	X		
120	Check condition, secure fitting, play and security of the aileron hinges (fork joints), in particular wear of the eye-bolts and bolts	X	X		
121	Clean, grease and secure fork joints		X		
122	Check aileron control horn for damage, secure fitting and security	X	X		
123	Check attachment of aileron rod: - control stick - torsion tube - axial screws on the front and rear bearings of the stick-torsion tube for secure fitting of the screws and their safety pins - pulleys: condition, attachment and bearings - aileron quadrant at canopy roof frame: attachment and bearings - pulleys in the wings: attachment and bearings		X		
124	Check condition of aileron rod ends: - torsion tube front and rear - aileron quadrant - aileron control rod, long - bellcrank - bellcrank - aileron control rod, short - control horn	X	X		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
125	Clean, grease and secure rod ends and check for play		x		
126	Check security of aileron push-rods short/long	x	x	4.3.5.2	
127	Check quick-release fittings of the aileron push-rods at the aileron quadrant for freedom of movement and secure closure	x	x		
128	Check aileron cables, thimbles and swaged grommets for damage and secure attachment		x		
129	Check cable tension of the aileron quadrant; if necessary, adjust using eccentric wheel	x	x	4.3.6.1	
130	Check aileron quadrant and bellcranks in the wing for freedom of movement and security; if necessary, wash out the journal bearings and grease		x		
131	Wing flaps				
132	Visual inspection of the condition of wing flaps	x	x		
133	Check condition, secure fitting, play and security of wing flap hinges (fork joints), in particular wear of the eye-bolts and bolts	x	x		
134	Clean, grease and secure fork joints		x		
135	Check functionality, freedom of movement and play in the controls	x	x		
136	Check fitting of sliding sleeves on the flap spar; sliding sleeves and spars must fit exactly into each other	x	x	4.3.6.2	
137	Loosen the sliding sleeves and check for wear; clean and grease as required		x		
138	Check the spring-loaded locks at the sliding sleeves for proper form fit (they must positively lock at the front and rear end of the tubes)	x	x		
139	Check spring-loaded locks freedom of movement		x		
140	Check the wing flap steering rod for damage and secure fitting	x	x		
141	Check condition of swivel heads of connections: steering lever - wing flap push-rods - actuator lever	x	x		
142	Clean, grease and secure swivel heads and check for play		x		
143	Check secure fitting and functionality of wing flap link and actuator lever Note: The detents in the flap track tend to enlarge with time; if the flap lever shows significant play in one of the detents the flap track must be replaced	x	x		
144	Grease the flap tracks		x		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
145					
146	Fuselage				
147	Frame				
148	Check metal frame (fuselage tube, A/B/C columns, canopy roof frame, struts, fittings, etc.): - screw connections - rivet connections - welded connections - joints - deformations	x	x		
149	Skin				
150	Check condition of all glass-fibre and carbon-fibre shells, fairings and cowlings for damage, cracks, deformation, etc.; repair or replace any damaged elements	x	x		
151	Check functionality of fuselage shell attachments and that none are missing	x	x		
152	Check proper attachment of mounted parts such as antennas, etc.	x	x		
153	Check rubber sealing around the opening of the ballistic recovery system	x	x		
154	Check proper functioning of the Camloc locks in the baggage bin cover	x	x		
155	Towing mechanism (if installed)				
156	Maintenance in accordance with the appropriate documents (tow hook E85)	in accordance with COMCO IKARUS GmbH instructions		operating manual	
157	Check Bowden cable for freedom of movement and damage near the release lever and near tow hook; this check should be carried out before every flight	x	x		
158	Check release force at the release lever when the tow hook is unloaded (< 13 daN); this check should also be carried out every 200 tows		x		
159	Clean and grease Bowden cable at the adjustment screws near the release lever and the tow hook; this check should also be carried out every 200 tows		x		
160					
161	Doors and windscreen				
162	Check the front door attachment bolts for cracks near the attachment screws	x	x		
163	Check seals for damage and porosity	x	x		
164	Check glass for cracks, scratches; repair or replace damage elements as required	x	x		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
165	Check condition and functionality of cabin locks	x	x		
166	Check condition and functionality of ventilation window	x	x		
167					
168	Empennage				
169	Horizontal tail				
170	Check condition of horizontal tail struts and for secure fitting	x	x		
171	Visual inspection of the condition of the horizontal tail fin and of the elevator	x	x		
172	Check horizontal tail fin for secure fitting	x	x		
173	Visual inspection of safety screws in the horizontal tail fin attachment	x	x		
174	Check condition, secure fitting, play and security of elevator hinges (fork joints), in particular wear of the eye-bolts and bolts	x	x		
175	Clean, grease and secure fork joints		x		
176	Check elevator control horn for damage, in particular for cracks in the welded connection, and for secure fitting	x	x		
177	Check freedom of movement of the elevator	x	x		
178	Check condition and freedom of movement of the elevator push-rod rod ends; with the elevator in full deflection, check counter nuts for secure fitting	x	x		
179	Check counter nuts for proper torque and that they are properly installed	x	x		
180	Clean, grease and secure rod ends and check for play; tighten and secure the counter nuts with Loctite; secure rod end with counter nut		x		
181	Check condition, security and attachment of elevator reversal bellcrank (on top of fuselage tube); in particular, check screws in the bearing block, fittings and rivets; observe service bulletin	x	x	4.3.6.3	
182	Check elevator reversal bellcrank for security, wear and freedom of movement; wash out and grease journal bearings		x		
183	Check attachment of push-rod to control stick	x	x		
184	Trim tab				
185	Check trim tab functionality and deflection (cf. setting data)	x	x		
186	Visual inspection of condition and attachment of tab, control horn and control rods Note: The bearing "rod-control horn" used in the design prior to 2004 can wear out. Retro-fit new construction as required	x	x		



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
187	Electrical trim tab				
188	Check functionality and the connections for secure fitting (insofar as they are accessible, cf. circuit diagram)	x	x		
189	Mechanical trim tab				
190	Check function, condition and attachment of the Bowden cable; if stiff, oil using an injection syringe or replace	x	x		
191	Check counter nuts of the Bowden cable adjusting screws	x	x		
192	Vertical tail				
193	Visual inspection of the condition of vertical tail fin and rudder	x	x		
194	Check vertical tail fin for secure fitting	x	x		
195	Check guide bushing of forward and aft vertical tail attachment in fuselage tube for play; replace, if necessary		x		
196	Check condition of rudder hinges (fork joints)	x	x		
197	Clean, grease and secure fork joints and check for play		x		
198	Check freedom of movement of rudders	x	x		
199	Check cables and Bowden cables for secure attachment, correct routing, damage, wear and tension; adjust and grease as required	x	x		
200	Check counter nuts of the Bowden cable adjusting screws	x	x		
201					
202	Interior / Cockpit				
203	Battery				
204	Visual inspection of wires, connections and wire routing for integrity and security insofar as accessible	x	x		
205	Visual inspection of attachment	x	x		
206	Check that battery is charged, recharge if necessary	x	x		
207	Instrument panel				
208	Check condition and attachment of instrument panel (attachment clips)	x	x		
209	Check attachment of each individual instrument	x	x		
210	Check functionality of control elements: - choke - cabin heating - carburettor heating	x	x		
211	Pitot-static pressure system				
212	Visual inspection of condition and attachment of pitot tube on the left wing	x	x		
213	Check system for leaks	x	x	4.3.8	



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No.	Description	Inspection		Ref. Chapter	Signature
		every 50 hours	very 100 hours		
214	Flight controls				
215	Check control stick attachment	x	x		
216	Check control stick for freedom of movement	x	x		
217	Check throttle for freedom of movement and sufficient friction	x	x	4.3.6.4	
218	Check Bowden cables for freedom of movement; grease if necessary	x	x		
219	Pedal assembly				
220	Check condition and attachment of pedals (in particular, check for deformation and the condition of the welded connections)	x	x		
221	Check attachment and security of push-rods and control cables				
222	Check pedals for freedom of movement				
223	Seats				
224	Check seats for damage	x	x		
225	Check condition and attachment of safety belts, check functionality of belt locks	x	x		
226	Miscellaneous				
227	Check attachment of the side panelling of the centre console (thread-forming self-tapping screws, M3 screws and attachment clips)	x	x		
228	Check that placards are legible and none are missing	x	x		
229					
230	Engine test run in accordance with Rotax operating handbook				
231					
232	Test flight				