

KOKU-KU-KI-408

No. TCD-6850A-2013

Date of Issue: July 23, 2013

Japan Civil Aviation Bureau

TAIKUSEI-KAIZEN-TSUHO

Airworthiness Directive

The undermentioned examinations or modifications are mandatory.

1. Applies to : Kawasaki BK117 series helicopters

2. Compliance is required as indicated, unless already accomplished.

To prevent damage to several electronic equipments by the over-voltage condition occurred in the electrical power system, accomplish the following.

2.1 Within 50 flight hours after the effective date of this AD or the next 50 flight-hours inspection after the effective date of this AD, whichever occurs later, carry out visual inspection of terminal lug connected with terminal E of starter generator and measurement of resistance of electrical wires between starter-generator and GCU in accordance with Kawasaki Service Bulletin No.KSB-117-272B dated July 10, 2013 and later JCAB approved revisions.

2.2 Repeat the same inspection and measurement as paragraph 2.1 at the time of 300 hour inspection.

2.3 Do the same inspection and measurement as paragraph 2.1 when the starter-generator or the wires connected to the starter-generator are removed/installed.

2.4 If necessary, replace the terminal lug before the next flight in accordance with SB No.KSB-117-272B dated July 10, 2013 and later JCAB approved revisions.

2.5 Before the next flight after the effective date of this AD, insert the copy of applicable Appendix attached, into the "EMERGENCY AND MALFUNCTION PROCEDURES" section of the Flight Manual.

2.6 For BK117 C-2 helicopters with serial No. 4001 to 4027, the generator

control units must be replaced with improved generator control unit (P/N: 51530-021EI (Mod.C)) which prevents the starter generator from overvoltage by July 31, 2014 in accordance with Kawasaki Service Bulletin No. KSB-117-359 dated July 10, 2013 and later JCAB approved revisions.

2.7 For BK117 C-2 helicopters replaced with improved generator control unit, inspection and measurement as paragraph 2.1 to 2.3, and inserting a copy of applicable Appendix into the Flight Manual as this AD or TCD-6850-2006 (effective on May 11, 2006) are not required. Remove the Appendix from the Flight Manual if attached in accordance with this AD or TCD-6850-2006.

2.8 An alternative means of compliance with this AD may be used, if approved by the Director-General of JCAB.

3. Remarks

3.1 This AD becomes effective on August 6, 2013.

3.2 TCD-6850-2006 (effective on May 11, 2006) is cancelled.

3.3 Kawasaki Service Bulletin No.KSB-117-272B dated July 10, 2013 and No.KSB-117-359 dated July 10, 2013 and later JCAB approved revisions pertain to this subject.

Applies to : Rotorcraft Serial number 1001~1003 and 1005
 ,and NOT accomplished KSB-117-012

This insert page indicates the temporary revision of flight manual.

Insert this page in front of an applicable page of flight manual without removing the applicable page.

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">GEN I</div> or <div style="border: 1px solid black; padding: 2px 10px; text-align: center;">GEN II</div> </div>	
Fault condition	Corrective action
<p>• Overvoltage condition caused by wire broken</p>	<p>(1) Voltmeter — Check <u>If voltmeter indication exceeds 30V :</u> NOTE : In case of overvoltage failure, the GEN caution light of normal generator side turns on.</p> <p>(2) GEN TRIP switch — I and II (3) Both GENERATOR switch — OFF (4) Normal GENERATOR switch — RESET, then ON, (relevant to GEN caution if necessary light which turned on first)</p> <p>(5) If generator load exceeds 110A, cut off unnecessary electrical load.</p> <p style="text-align: center;"><u>LAND AS SOON AS PRACTICABLE</u></p> <p><u>If voltmeter indication NOT exceeds 30V :</u> Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform</p>

Applies to : Rotorcraft Serial number 1001 ~ 1003 and 1005 and KSB-117-012
 accomplished
 Rotorcraft Serial number 1004, 1006~1008 and 1010~1024

This insert page shows the temporary revision of the flight manual.

Insert this page in front of a corresponding page of flight manual without removing an applicable page.

<div style="display: flex; justify-content: center; align-items: center; gap: 20px;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">GEN I</div> or <div style="border: 1px solid black; padding: 5px; text-align: center;">GEN II</div> </div> <div style="display: flex; justify-content: center; align-items: center; gap: 20px;"> (amber) (amber) </div>	
Fault condition	Corrective action
<ul style="list-style-type: none"> • Overvoltage condition caused by wire broken 	<ul style="list-style-type: none"> (1) Voltmeter — Check <u>If voltmeter indication exceeds 30V :</u> NOTE : In case of overvoltage failure, the GEN caution light of normal generator side turns on. (2) GEN TRIP switch — I and II (3) Both GENERATOR switch — OFF (4) Normal GENERATOR switch — RESET, then ON, (relevant to GEN caution light which turned on first) if necessary (5) If generator load exceeds 150A, cut off unnecessary electrical load. <li style="text-align: center;"><u>LAND AS SOON AS PRACTICABLE</u> <u>If voltmeter indication NOT exceeds 30V :</u> Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform

Applies to : Rotorcraft Serial number 1009 and 1025~1109

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Fault condition	Corrective action
<p>• Overvoltage condition caused by wire broken</p>	<p>(1) Voltmeter — Check</p> <p><u>If voltmeter indication exceeds 30V :</u></p> <p>NOTE : In case of overvoltage failure, the GEN caution light of normal generator side turns on.</p> <p>(2) GEN TRIP switch — I and II</p> <p>(3) Both GENERATOR switch — OFF</p> <p>(4) Normal GENERATOR switch — RESET, then ON, (relevant to GEN caution light which turned on first) if necessary</p> <p>(5) If generator load exceeds 150A, cut off unnecessary electrical load.</p> <p style="text-align: center;"><u>LAND AS SOON AS PRACTICABLE</u></p> <p><u>If voltmeter indication NOT exceeds 30V :</u></p> <p>Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform</p>

Applies to : Type BK117C-1

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Fault condition	Corrective action
<p>• Overvoltage condition caused by wire broken</p>	<p>(1) Voltmeter — Check</p> <p><u>If voltmeter indication exceeds 30V :</u></p> <p>NOTE : In case of overvoltage failure, the GEN caution light of normal generator side turns on.</p> <p>(2) GEN TRIP switch — I and II</p> <p>(3) Both GENERATOR switch — OFF</p> <p>(4) Normal GENERATOR switch — RESET, then ON, (relevant to GEN caution light which turned on first) if necessary</p> <p>(5) If generator load exceeds 200A, cut off unnecessary electrical load.</p> <p style="text-align: center;"><u>LAND AS SOON AS PRACTICABLE</u></p> <p><u>If voltmeter indication NOT exceeds 30V :</u> Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform</p>

Applies to : Type BK117C-2

This insert page shows the temporary revision of the flight manual.

Insert this page in front of a corresponding page of flight manual without removing an applicable page.

CAUTION INDICATIONS	
GEN DISCON (SYSTEM I)	GEN DISCON (SYSTEM II)
Conditions / Indications	
Overvoltage condition caused by wire broken	
Procedure	
1. DC voltage indication	— Check
If voltage indication exceeds 30V :	
NOTE : In this condition, normal generator is disconnected first from the power distribution system then relevant caution light turns on	
2. Both GEN switch	— OFF
3. Normal GEN switch (relevant to the caution indication which turned on first)	— RESET then NORM if necessary
4. DC Voltage indication, GEN and BAT current indications	— Monitor
If electrical power from battery is supplied:	
5. Electrical consumers	— Reduce as much as possible
6. LAND AS SOON AS PRACTICABLE	
NOTE : One generator alone will provide sufficient power for normal services.	
If voltage indication NOT exceeds 30V :	
2. Original EMERGENCY AND MALFUNCTION PROCEDURES	— Perform