

KOKU-KU-KI-129

No. TCD-6850B-2015

Date of Issue: May 14, 2015

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 August 6, 2013 (the effective date of TCD-6850A-2013) or the next 50 flight-hours inspection after August 6, 2013 (the effective date of TCD-6850A-2013), whichever occurs later, carry out visual inspection of terminal lugs connected with terminal E of starter generators and measurement of resistance of electrical wires between the starter-generators and the generator control units in accordance with the instructions of Kawasaki Service Bulletin No.KSB-117-272B dated July 10, 2013 or later JCAB-approved revision.

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

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

2.4 If, during any inspection as required by paragraph 2.1, any discrepancy is found, replace the terminal lug before the next flight in accordance with the instructions of Kawasaki Service Bulletin No.KSB-117-272B dated July 10, 2013 or later JCAB-approved revision.

2.5 Before the next flight after the effective date of this AD, revise the Section 3 "EMERGENCY AND MALFUNCTION PROCEDURES" by incorporating the content of an applicable attachment of this AD. This may be done by

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<p>inserting a copy of an applicable attachment of TCD-6850A-2013 or this AD in front of the corresponding page of the flight manual.</p> <p>2.6 For BK117 C-2 helicopters with serial No. 4001 to 4027, the generator control units must be replaced with improved generator control units (P/N: 51530-021EI (Mod.C)) which prevents the starter generators from overvoltage by July 31, 2014 in accordance with the instructions of Kawasaki Service Bulletin No. KSB-117-359 dated July 10, 2013 or later JCAB-approved revision.</p> <p>2.7 For BK117 C-2 helicopters replaced with the improved generator control units, inspection and measurement as required by paragraph 2.1 to 2.3 are not required.</p> <p>2.8 For BK117, BK117 A-3, BK117 A-4, BK117 B-1, BK117 B-2 and BK117 C-1 helicopters, within 1 year after the effective date of this AD, change the connection destination and duplication of the generator control units ground wire in accordance with the instructions of Kawasaki Service Bulletin No. KSB-117-348 dated May 7, 2015 or later JCAB-approved revision.</p> <p>2.9 For BK117, BK117 A-3, BK117 A-4, BK117 B-1, BK117 B-2 and BK117 C-1 helicopters accomplished the actions as required by paragraph 2.8, inspection and measurement as required by paragraph 2.1 to 2.3 are not required.</p> <p>2.10 An alternative means of compliance with this AD may be used, if approved by the Director-General of JCAB.</p>		
<p>3. Remarks</p> <p>3.1 This AD becomes effective on May 28, 2015.</p> <p>3.2 This AD supersedes the AD No. TCD-6850A-2013 dated July 23, 2013.</p> <p>3.3 Kawasaki Service Bulletin No. KSB-117-272B dated July 10, 2013, No. KSB-117-359 dated July 10, 2013, and No. KSB-117-348 dated May 7, 2015, and later JCAB approved revisions pertain to this subject.</p>		

This is the English translation. In case of any difficulty, refer to the Japanese original text.

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.

Fault condition	Corrective action
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 2px solid black; padding: 5px; text-align: center;"><b>GEN I</b></div> <span>or</span> <div style="border: 2px solid black; padding: 5px; text-align: center;"><b>GEN II</b></div> </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span>(amber)</span> <span>(amber)</span> </div>	
<p>• Overvoltage condition                      caused by wire                      broken</p>	<p>(1) Voltmeter — Check  <u>If voltmeter indication exceeds 30V :</u>  <b>NOTE</b> : In case of overvoltage failure, the <span style="border: 1px solid black; padding: 2px;">GEN</span>                      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 <span style="border: 1px solid black; padding: 2px;">GEN</span> 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;"><b><u>LAND AS SOON AS PRACTICABLE</u></b></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;"><b>GEN I</b></div> <span>or</span> <div style="border: 1px solid black; padding: 5px; text-align: center;"><b>GEN II</b></div> </div> <div style="display: flex; justify-content: center; align-items: center; gap: 20px; margin-top: 5px;"> <span>(amber)</span> <span>(amber)</span> </div>	
Fault condition	Corrective action
• Overvoltage condition  caused by wire  broken	(1) Voltmeter — Check  <u>If voltmeter indication exceeds 30V :</u>  <b>NOTE</b> : In case of overvoltage failure, the <span style="border: 1px solid black; padding: 2px;">GEN</span> 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 <span style="border: 1px solid black; padding: 2px;">GEN</span> caution if necessary light which turned on first)  (5) If generator load exceeds 150A, cut off unnecessary electrical load.  <p style="text-align: center;"><b><u>LAND AS SOON AS PRACTICABLE</u></b></p> <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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<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;"><b>GEN I</b></div> <span>or</span> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;"><b>GEN II</b></div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <span>(amber)</span> <span>(amber)</span> </div>	
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><b>NOTE</b> : In case of overvoltage failure, the <span style="border: 1px solid black; padding: 0 2px;">GEN</span> 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 <span style="border: 1px solid black; padding: 0 2px;">GEN</span> caution if necessary light which turned on first)</p> <p>(5) If generator load exceeds 150A, cut off unnecessary electrical load.</p> <p style="text-align: center;"><b><u>LAND AS SOON AS PRACTICABLE</u></b></p> <p><u>If voltmeter indication NOT exceeds 30V :</u></p> <p>Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform</p>

Applies to : Type BK117C-1

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: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;"><b>GEN I</b></div> <span>or</span> <div style="border: 1px solid black; padding: 2px 10px; text-align: center;"><b>GEN II</b></div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <span>(amber)</span> <span>(amber)</span> </div>	
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><b>NOTE</b> : In case of overvoltage failure, the <span style="border: 1px solid black; padding: 0 2px;">GEN</span> 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 <span style="border: 1px solid black; padding: 0 2px;">GEN</span> caution if necessary light which turned on first)</p> <p>(5) If generator load exceeds 200A, cut off unnecessary electrical load.</p> <p style="text-align: center;"><b><u>LAND AS SOON AS PRACTICABLE</u></b></p> <p><u>If voltmeter indication NOT exceeds 30V :</u> Original EMERGENCY AND MALFUNCTION PROCEDURES — Perform</p>

Applies to : Type BK117C-2
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### CAUTION INDICATIONS

_____	<b>GEN DISCON</b>	or	<b>GEN DISCON</b>	_____
	(SYSTEM I)		(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<br>(relevant to the caution indication<br>which turned on first) | — RESET then NORM<br>if necessary |
| 4. DC Voltage indication, GEN and BAT<br>current indications                          | — Monitor                         |

If electrical power from battery is supplied:

- |                         |                                 |
|-------------------------|---------------------------------|
| 5. Electrical consumers | — Reduce as much as<br>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 |
|--|-----------|