

Beech Aircraft Corporation

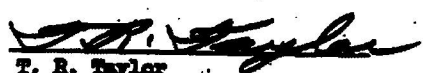
OVERHAUL SPECIFICATION


TRIM TAB SYSTEMS - MODEL C-45G, C-45H, AND SNB-5

Overhaul Specification 5211

ISSUED March 25, 1953

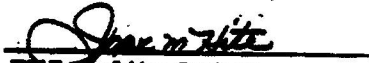
REVISED November 3, 1953


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I. SCOPE

1.1 Purpose. - The purpose of this specification is to authorize the use of reconditioned parts and provide reconditioning instructions for component parts of the complete trim tab system as installed in T-7, T-7C, UC-45B, C-45F, and T-11 aircraft and instructions for modifications required to adapt them for use in C-45G, C-45H, and BMB-5 aircraft in accordance with Drawings 894-187002, 694-187000, 694-187003, 186250, 186200, 900-186100, 18130, and B18120.

1.2 Application. - All reconditioning operations and repairs covered by this specification may be accomplished where required without further authorization. Repairs not authorized by this specification cannot be performed without further authorization.

1.3 List of Pages and Revisions. - This specification consists of the pages listed below. An asterisk (*) denotes the pages revised by the current revisions.

<u>Page</u>	<u>Date</u>	<u>Description of Revision</u>	<u>Serial Effectivity</u>
1*	11-3-53	Record Revision	Record Change
2	9-9-53		
3	9-9-53		
4	9-9-53		
5	9-9-53		
6	9-9-53		
7	9-9-53		
8*	11-3-53	Change Paragraph 3.3.1.6, Page 8, to authorize new taper pin hole drilled 90° to old hole in 187732 pulley.	Record Change
9	9-9-53		
10	9-9-53		
11	9-9-53		
12	9-9-53		
13	9-9-53		

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2. APPLICABLE PUBLICATIONS

2.1 Specifications:

2.1.1 Federal.-

QQ-P-416 Cadmium Plating

2.1.2 Beech.-

FS 302 Finish Specification for Overhauled Navy SNB/JRB Aircraft

FS 370A Finish Specification - Model C-45G and C-45H

OS 7002 Cleaning Procedures for Reconditioned Aircraft

OS 7003 Air Frame and Control Antifriction Bearings

OS 7008 General Acceptable Quality Standards

OS 7010 Removing Corrosion from Aluminum Parts

3. REQUIREMENTS

3.1 Parts Involved:

3.1.1 Parts Not Used.- Component parts of the trim tab systems listed on Drawings 84-187000, 814-187000, 824-187010, 804-187000 flight controls installations; 186250 rudder assembly; 186200 fin assembly; 186050A stabilizer assembly; 84-186175 elevator assembly; 18130 aileron assembly; and B18120 wing assembly, which are not listed in Paragraph 3.1.2 of this specification, will not be reused and will be disposed of at the direction of the customer.

3.1.2 Parts to be Reconditioned.- The following parts are to be reconditioned in accordance with the instructions contained herein. "Reconditioned" means the disassembly, cleaning, inspection and correction of discrepancies, repair and/or replacement of components, and modifications to incorporate changes in accordance with applicable engineering drawings to assure an operationally safe and serviceable aircraft.

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3.1.2.1 Flight Controls Installation 84-187000, 814-187000, 824-187010, and 804-187000.

- | | |
|------------|------------------|
| 18405-29 | Reinforcement |
| 187106B | Cable assembly |
| 43-187106 | Cable assembly |
| 187156 | Cable assembly |
| 804-187104 | Cable assembly |
| 187111-18 | Cable assembly |
| 187111-16 | Cable assembly |
| 187111-14 | Cable assembly |
| 187735-2 | Sprocket |
| 187600 | Control assembly |
| 187713-1 | Chain guard |
| 187713-2 | Chain guard |
| 187730 | Crank assembly |
| AN155-168 | Barrel |
| AN210-1A | Pulley |
| AN210-2A | Pulley |
| AN170-1688 | Eye |

3.1.2.2 Rudder Assembly 186250.-

- | | |
|--------|---------------------------------|
| 187705 | Rudder tab control installation |
|--------|---------------------------------|

3.1.2.3 Fin Assembly 186200.-

- | | |
|--------|---------------------------------------|
| 187748 | Rudder tab shaft assembly |
| 187704 | Nut |
| 187715 | Tab mechanism drive |
| 187716 | Rudder tab flexible shaft end fitting |

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3.1.2.4 Horizontal Stabilizer Assembly 186050A.-

186050A-26 Shaft assembly
4707-2-10 Drive assembly

3.1.2.5 Elevator Assembly 84-186175.-

187725 Elevator tab control installation

3.1.2.6 Aileron Assembly 18130 Left-Hand.-

187745 Aileron tab control installation

3.1.2.7 Wing Assembly B18120 Left-Hand.-

4707-2-10 Drive assembly

3.1.3 Parts to be Supplied New.- Component parts of the trim tab systems listed on Drawings 694-187000, 694-187003, and 894-187002 flight controls installations, 186250 rudder assembly, 186200 fin assembly, 694-186050 and 404-186050 stabilizer assembly, 900-186100 elevator assembly, 18130 left-hand aileron assembly, and B18120 left-hand wing assembly will be installed new as indicated in Paragraphs 3.1.3.1 through 3.1.3.7 of this specification.

3.1.3.1 Flight Controls Installation 694-187000, 694-187003, and 894-187002.-

694-187729 Indicator installation
187002 Spacer
187002-2 Spacer
187737-1 Guard
187736-1 Bushing
187736-2 Bushing

3.1.3.1.1 Cable Assembly 187156.-

187156-2 Cable assembly

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3.1.3.1.2 Cable Assembly 187111-18.-

187111-2 Cable assembly

106201-R-43002 Cable assembly

3.1.3.1.3 Cable Assembly 407-187106 (C-45G and C-45H Only).-

407-187106-6 Cable assembly

AN155-88 Turnbuckle barrels

3.1.3.1.4 Rudder Tab Control Installation 694-187730 (C-45G and C-45H Only).-

694-187731 Shaft

404-180107 Placard

694-187732 Spacer

No. 1 Escutcheon

3.1.3.2 Rudder Assembly 186250.- None

3.1.3.3 Fin Assembly 186200.- None

3.1.3.4 Horizontal Stabilizer Assembly 404-186050 and 694-186050.- None

3.1.3.5 Elevator Assembly 900-186100:

3.1.3.5.1 Elevator Tab Control Installation 404-186110.-

404-186111 Bracket assembly

404-186112 Pinion assembly

404-186113 Rack assembly

404-186114 Spring

3.1.3.6 Aileron Assembly 18130 Left-Hand.- None

3.1.3.7 Wing Assembly B18120 Left-Hand.- None

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3.2 Cause for Rejection.- Damage or wear which cannot be corrected by one or more of the authorized repairs listed in Paragraph 3.4 of this specification is cause for rejection.

3.3 Reconditioning Operations:

3.3.1 Flight Controls Installations 84-187000, 814-187000, 824-187010, and 804-187000.- Components of these installations will be reconditioned as indicated in Paragraphs 3.3.1.1 through 3.3.1.10 of this specification and installed in Model C-450 aircraft in accordance with Drawing 694-187000, C-45H aircraft in accordance with Drawing 694-1870003, and Model SNB-5 aircraft in accordance with Drawing 894-187002.

3.3.1.1 Cable Assemblies 187156 and 804-187104.-

- (a) Scrap the 804-187104-2 and 187156-2 cable assemblies.
- (b) Inspect the 804-187104-4 chain, 187156-4 chain, 187108 link, AN161-16RS fork, and AN155-16S barrel for nonrepairable conditions.
- (c) Clean in accordance with OS 7002.
- (d) Remove corrosion from the 187108 link and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating.
- (e) Remove corrosion from the AN161-16RS forks and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating in accordance with Specification QQ-P-416. Corrosion-resistant steel forks or nickel-plated forks do not require further corrosion protection.
- (f) Assemble parts in accordance with Drawing 187156. Install new 187156-2 cable assemblies. This will make the 804-187104 cable assembly conform to Drawing 187156.

3.3.1.2 Cable Assemblies 187111-14, 187111-16, and 187111-18.-

- (a) Scrap the 187111-2 and 106201 cable assemblies.
- (b) Inspect the 187111-6 chain and AN155-16S barrel for non-repairable conditions.
- (c) Clean the 187111-6 chain and AN155-16S barrel in accordance with OS 7002.

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3.3.1.2 Cable Assemblies 187111-14, 187111-16, and 187111-18.-
(Continued)

- (d) Install new 187111-2 and 106201-R-43002 cable assemblies in accordance with Drawings 187111. This will make the 187111-14 and 187111-16 cable assemblies identical to the 187111-18 cable assembly.

3.3.1.3 Cable Assemblies 43-187106 and 187106B.-

- (a) Scrap all parts of these cable assemblies except the AN155-88 turnbuckle barrels, 187661 stops, and the 187106B-1 and 43-187106-1 chain assemblies.
- (b) Inspect for nonrepairable conditions.
- (c) Clean in accordance with OS 7002.
- (d) For Model C-45G and C-45H aircraft, modify the 43-187106 and 187106B cable assemblies to conform to Drawing 407-187106 by installing new 407-187106-6 cable assemblies.
- (e) For Model SNB-5 aircraft, install new 187666 cable assemblies.

3.3.1.4 Sprocket 187713-2, and Chain Guards 187713-1 and 187713-2.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion from the 187108 link and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating.

3.3.1.5 Control Assembly 187600.-

- (a) Inspect all parts for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Recondition the bearings in accordance with OS 7003.
- (d) Finish in accordance with FS 302 and FS 370A as applicable.

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3.3.1.6 Crank Assembly 187730.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Recondition the bearings in accordance with OS 7003.
- (d) For Model C-45G and C-45H aircraft, modify the 187730 crank assembly to conform to Drawing 694-187730 by replacing the 187770 shaft with a 694-187731 shaft and installing a 404-180107 placard, 694-187732 spacer, and No. 1 escutcheon in accordance with Drawing 694-187730. It is permissible to drill the taper hole for the 187827 pin at 90° to the original taper hole in the 187732 pulley.
- (e) Finish in accordance with FS 302 or FS 370A as applicable.

3.3.1.7 Eye AN170-1688.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion from the AN170-1688 eyes and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating in accordance with Specification QQ-P-416. Corrosion-resistant steel eyes or nickel-plated eyes will not be cadmium plated.

3.3.1.8 Barrel AN155-168.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.

3.3.1.9 Reinforcement 18405-29.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion in accordance with OS 7010.
- (d) Finish in accordance with FS 302 or FS 370A as applicable.

OVERHAUL SPECIFICATION 5211PAGE 9 OF 13TITLE TRIM TAB SYSTEMS - MODEL C-45G, C-45H, AND SNB-5ISSUED March 25, 1953WRITTEN BY T. R. TaylorREVISED September 9, 1953**3.3.1.10 Pulleys AN210-1A and AN210-2A.-**

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Recondition bearings in accordance with OS 7003.

3.3.2 Rudder Assembly 186250:**3.3.2.1 Rudder Tab Control Installation 187705.-**

- (a) Inspect all parts for nonrepairable conditions.
- (b) Clean all parts in accordance with OS 7002.
- (c) Remove corrosion from 187727 torque tube, 187710 drive and 187707 rod and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating. Worn cadmium plating on rubbing surfaces that occurs in normal service need not be replaced.
- (d) Lubricate 4576-36-10 actuator assembly and 187712 universal with grease conforming to Specification MLL-G-3278.
- (e) Finish 4576-36-10 actuator assembly in accordance with FS 302 or FS 370A as applicable.

3.3.3 Fin Assembly 186200:**3.3.3.1 Shaft Assembly 187748.-**

- (a) Inspect for nonrepairable conditions.
- (b) Disassemble and clean in accordance with OS 7002.
- (c) Lubricate the shaft and inside of the casing with graphite grease conforming to Specification VV-G-671B.

3.3.3.2 Nut 187704.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.

3.3.3.3 Tab Mechanism Drive 187715.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.

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3.3.3.3 Tab Mechanism Drive 187715.- (Continued)

- (c) Repair as necessary as authorized herein.
- (d) Lubricate using grease conforming to Specification MIL-G-3278.
- (e) Adjust to remove excessive end play.

3.3.3.4 End Fitting 187716.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion and replace corrosion protection using zinc chromate primer, aluminum lacquer or cadmium plating.

3.3.4 Horizontal Stabilizer Assembly 186050A:

3.3.4.1 Shaft Assembly 186050A-26:

3.3.4.1.1 Tube Assemblies 187719-6, 187719-4, and 187719-1.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion and replace corrosion protection using zinc chromate primer, aluminum lacquer or cadmium plating.

3.3.4.1.2 Torque Drive 187960 Right- and Left-Hand.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Remove corrosion from the 187691 shaft and 187692 end fitting and replace corrosion protection by using zinc chromate primer, aluminum lacquer or cadmium plating. Worn cadmium plating that occurs on rubbing surfaces in normal service need not be replaced.
- (d) Pack the drive assemblies 4584-11-10 and 4584-11-60 with grease conforming to Specification MIL-G-3278.
- (e) Recondition 187715 drive in accordance with Paragraph 3.3.3.3 of this specification.
- (f) Install a new 187783 reinforcement.

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3.3.4.2 Drive Assembly 4707-2-10.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Pack with grease conforming to Specification MIL-G-3278.

3.3.5 Elevator Assembly 84-186175:

3.3.5.1 Elevator Tab Control Installation 187725.- Recondition and modify this installation to conform to Drawing 404-186110 as follows:

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Pack the 4576-36-10 actuator with grease conforming to Specification MIL-G-3278.
- (d) Finish the 4576-36-10 actuator in accordance with FS 370A.
- (e) Modify the 187726-3 rod assembly into an 187726-4 rod assembly by grinding off the 187726-2 eye. Strip and cadmium plate the modified rod assembly in accordance with Specification QQ-P-416.
- (f) Strip and cadmium plate the 187726-4 rod in accordance with Specification QQ-P-416.
- (g) Modify the shaft on the G-106337 rheostat to conform to Drawing 404-186117.
- (h) Install a 404-186111 bracket assembly, 404-186112 pinion assembly, 404-186113 rack assembly, and 404-186114 spring in accordance with Drawing 404-186110.
- (i) Scrap the 186133 sheave, 187725-2 cable, and 8-143 spring.

3.3.6 Aileron Assembly 18130 Left-Hand:

3.3.6.1 Aileron Tab Control Installation 187745.-

- (a) Inspect all parts for nonrepairable conditions.
- (b) Clean all parts in accordance with OS 7002.

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3.3.6.1 Aileron Tab Control Installation 187745.- (Continued)

- (c) Lubricate the 187747 flex shaft and case assembly with graphite grease conforming to Specification VV-G-671B.
- (d) Pack the 4584-11-20 90° drive assembly and the 4576-36-10 actuator assembly with grease conforming to Specification MIL-G-3278.
- (e) Finish the 4576-36-10 actuator assembly in accordance with FS 302 or FS 370A as applicable.
- (f) Remove corrosion from the 187746 rod and replace corrosion protection by using zinc chromate primer, aluminum lacquer, or cadmium plating.

3.3.7 Wing Assembly 318120 Left-Hand:

3.3.7.1 Drive Assembly 4707-2-10.-

- (a) Inspect for nonrepairable conditions.
- (b) Clean in accordance with OS 7002.
- (c) Pack with grease conforming to Specification MIL-G-3278.

3.4. Authorized Repairs:

3.4.1 Fin Assembly 186200:

3.4.1.1 Tab Mechanism Drive 187715.-

- (a) Replace excessively worn universals.
- (b) Mill the key slot in accordance with Drawing 187715 in cases where the key slot is missing or when new universals are used.

4. INSPECTION

4.1 General.- The parts will be inspected to the general acceptable quality standards of Overhaul Specification 7008 and the specific quality standards listed below.

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4.1 General. - (Continued)

(a) Reconditioned universal joints will be acceptable for use if:

- (1) End play is within .010.
- (2) Torsional play is within .015.
- (3) Side play is within .010.