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National Air and Space Museum

Archives Division

29 November 2018

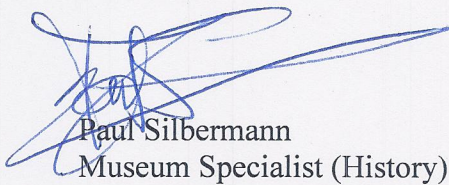
Michael Maenz
Isoldenstr 11
80804 Munich
Germany

Dear Mr. Maenz:

Enclosed with this letter are the Waco YMF and UPF-7 drawing lists from your recent order. Should you wish to obtain duplicates of any of the drawings on these lists, please see the instruction on the enclosed form "How to Order Copies of Waco Drawings." Also, please note that before we can provide duplicate engineering drawings to you we must have a signed Document Use and Indemnification Agreement on file from you. I have enclosed two copies of an appropriate form; please sign and date both copies, retain one for your files, and return the other to us with your price quote or drawing duplication request. I have also enclosed a copy of our Drawings Reference Policy for your information.

We hope this information will be of some value to you. If we can be of any further assistance please feel free to contact us.

Sincerely,



Paul Silbermann
Museum Specialist (History)
ref: 2018-2114

SMITHSONIAN INSTITUTION
P.O. Box 37012
National Air and Space Museum
Archives Division, Rm.3100, MRC 322
Washington DC 20013-7012
703.572.4045 Telephone
202.786.2835 Fax
nasmrefdesk@si.edu E-mail



Smithsonian
National Air and Space Museum



WACO AIRCRAFT COMPANY DRAWINGS

NASM Archives Accession No. XXXX-0151

HOW TO ORDER COPIES OF WACO DRAWINGS

The National Air and Space Museum holds the files of the Waco Aircraft Company (est. 1920), including original and duplicate engineering drawings and company records from the inception of the company until its demise in 1947. This material is available to aircraft restorers, researchers, model builders, and the general public. The collection contains two types of material related to engineering drawings:

- 1) Copies of Waco's original drawing lists for their various models, listing drawing numbers and titles.
- 2) Approximately 25,000 individual **ENGINEERING DRAWINGS** for Waco aircraft. **You may request a price quote for copies of individual drawings (by drawing number) using this form.**

A NOTE ON WACO DUPLICATE DRAWING FORMATS. As part of its preservation strategy, NASM has copied the drawings onto microfilm, while retaining the originals. The drawings in this collection are duplicated EITHER as a full-size photocopy of the original drawing OR as an 18" x 24" print from microfilm depending on the size and condition of the original drawing. The quote you will receive will list the price appropriate to the format in which the drawing will be reproduced.

HOW TO ORDER COPIES OF WACO DRAWINGS.

Due to the nature of the *Waco Aircraft Company Records*, there are several steps you must follow to obtain specific Waco drawings. You must:

1. Order and receive a Waco drawing list for your specific Waco model aircraft. (Please request our Waco collection brochure HOW TO ORDER DRAWING LISTS if you haven't already done this.)
2. Review the Waco drawing list carefully. **Because of the large number of orders we receive and the limited number of staff available to fill these orders, you may request a maximum of twenty-five (25) drawings per order, with a limit of one order in process per individual or organization.** We recommend that you decide your priorities for ordering individual drawings based on the status of your own restoration or reconstruction project. (What part of the aircraft are you most interested in? Where would you like to start? Nose? Tail? Landing gear?) *The NASM Archives is not able to make these decisions for you.*
3. When you have decided which drawings you would like to order, please complete the Price Quote Request form on the other side of this page. Be sure to give us your name and mailing address, and indicate which Waco model you are interested in. **Please make your request by drawing number and title, listing selected drawings in drawing number order from lowest to highest.** Please mail your completed request for *no more than 25 drawings* to the address below.
4. After the NASM Archives has reviewed your request, you will receive a customized price quote which will enable you to order copies of the drawings on your list. Why do you need to receive a price quote before you send money? Waco drawings come in a wide variety of sizes; the cost of each copy drawing is calculated at a standard rate per square foot.
5. Based on the customized price quote, decide which Waco drawings you would finally like to order and follow the instructions on the price quote form to obtain duplicates.
6. Your duplicate Waco drawings will be sent via UPS or U.S. mail.

VERY IMPORTANT!!! Do not send payment until you receive a cost estimate from us. You will be provided with a price quote for copies of the drawings which you have requested. We ask that you return a copy of the price quote with your selections noted as your final order.

YES, we know that this seems complicated, and NO, there isn't any other way you can do this. Please be advised that the NASM Archives Division is not able to hold money on account for our customers, or to carry credit from order to order, or make drawing selections for you.

NOTICE: These items are provided for historical and reference use only. The National Air and Space Museum and its donors assume no liability for any loss or damage resulting from or in any way connected to other use of this information. Not for commercial use or further dissemination.

Mail this completed form (do not send any payment) to:

**Smithsonian Institution
P.O. Box 37012
National Air and Space Museum, Rm.3100, MRC 322
Washington, DC 20013-7012**



Smithsonian
National Air and Space Museum

Agreement number: Indemn-000003569

DOCUMENT USE AND INDEMNIFICATION AGREEMENT

The National Air and Space Museum, Smithsonian Institution (hereafter Museum), agrees to provide Michael Maenz (hereafter Requestor) reproductions of drawings and/or other documents containing design data of air and space craft described below:

Waco YMF (ATC #542); Waco UPF-7 (ATC #642)

These reproductions from the Museum's archival collections will be furnished to Requestor subject to the following terms and conditions:

The reproductions are made available by the Museum solely for personal, non-commercial uses such as historical research, exhibition, model making, or non-profit restoration purposes. Permission for such uses is granted only to the extent of the Smithsonian Institution's ownership of the rights related to the request. Certain drawings and data may be subject to copyright, trademark, patent or related interests not owned by the Institution. The responsibility for ascertaining whether any such rights exist and for obtaining all necessary permissions remains with the Requestor.

The Museum makes no representation or warranties that the reproductions furnished meet current or past airworthiness standards or are in any way suitable for use in construction or repair of aviation or aerospace equipment.

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Requestor acknowledges that he/she has read and understands the terms of this agreement.

Signature of Requestor

Date

Address: Isoldenstr. 11
(please correct Munich, BY 80804
if necessary) Germany



Smithsonian
National Air and Space Museum

Agreement number: **Indemn-000003569**

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Requestor acknowledges that he/she has read and understands the terms of this agreement.

Signature of Requestor

Date

Address: Isoldenstr. 11
(please correct Munich, BY 80804
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DRAWINGS REFERENCE POLICY

1. **BACKGROUND:** The National Air and Space Museum (NASM) is a source for historical materials and data regarding air and space craft. It makes these materials available for use by students, educators, scholars, the public, and commercial users consistent with United States copyright, trademark, patent and related laws in furtherance of the Smithsonian Institution's commitment to the increase and diffusion of knowledge.
2. **POLICY:** It is the policy of NASM to make available on an equal basis to requestors drawings and other data in NASM's custody relating to air and space craft. Requestors have access to these materials and data by visiting NASM and reviewing documents in NASM's reading rooms and by requesting copies of documents in NASM's custody and paying established fees for reproduction and shipping. Documents and data are supplied in support of historical research. Historical research includes, among other endeavors, development of publishable scholarly and popular works, developing exhibitions, and building model aircraft, and historical, static non-flying restorations. NASM does not provide historical documents and data in support of construction of airworthy, human-carrying replicas of aircraft. Nor does NASM support the Approved Type Certificate process.
3. **PROCEDURE:** Requestors of air and space craft drawings must execute an agreement with NASM indicating their intent to use the drawings and data supplied by NASM only for historical research, exhibition, model making, or non-profit restoration purposes. Requestors will also agree that the documents and data are intended solely for personal and non-commercial use, that these documents and data will not be used to create a replication of any aircraft, and that copies of the documents and data will not be reproduced, distributed, or transmitted. This signed agreement must be provided to NASM before orders for copying of drawings are accepted.
4. **COMMERCIAL USE:** NASM will refer requests to support commercial publication, model building, or replication to the Smithsonian Institution's Office of Product Development and Licensing for negotiation of appropriate agreements.

Effective Date: August 11, 1997.

May 8, 1934

WACO MODEL YMF

DRAWING LIST

The following constitutes a complete list
of drawings which pertain to the subject model
airplane of which Model UMF is the basic model.

R. W. Gibson

R. W. Gibson
Chief Draftsman

THE WACO AIRCRAFT COMPANY

Troy, Ohio

Group A - Airplane
Group B - PowerplantGroup A - Airplane

Part No.	Name	Last rev'n	Sup'd by
18452	Three View Drawing	A, B C	

Group B - Power Plant

3488	Bellcrank		
8278	Throttle Lever threaded stem	A	
8279	Throttle Lever Knob	A	
9751	Filler Neck Gasket	B	
11597	Brake lock ratchet		
11598	Support, Brake Lock	B	
12038	Throttle lever terminal		
12252	Throttle lever Universal Sleeve	C	
13868	Gas Tank 6 1/2" Tie Bolt	D	
13869	Gas Tank 6" Tie Bolt	E	
14011	Control stick torque tube bearing	A	
14039	Throttle lever Universal	C	
14070	Fuel tank top support plate	A	
14072	Center Section Gas Tank Top Support	C	
14127	Bevel Washer for Gas Tank Support Bolt	C	
14401	Gas Tank Tie Bolt 1/4"	A	
15519	Ring Cowl Assembly		
15749	Throttle cable clamp	H	
15974	Throttle Cable Support Clamp	B	
18160	Fuel Tank Installation	A	
18357	Throttle Installation		
18391	Rear Throttle Rod Ass'y		
18392	Throttle Lever Ass'y - Curved		
18428	(10524) 25. gal. Fuel Tank		
18433	Fuel Line Diagram		

DRAWING LIST

Jaco Model YMF

Group B - Power Plant (Cont)

Part No.	Name	Last rev'n	Sup'd by
13434	Shut Off Cock Control Ass'y		
13435	Shut Off Cock Arm		
13436	Shut Off Cock - End Fitting		
13442	Shut Off Cock Arm Bushing		
13443	Fuel Control Support		
13444	Fuel Control Lever Ass'y		
13451	Throttle Lever Ass'y Rear		
13459	Oil Tank Ass'y		
13521	Throttle Rod Terminal, Front		
13522	Throttle Rod Terminal, Rear		
13535	Throttle Installation		
13602	Filler Neck Tube		
18550	Battery Box Ass'y (Exide 6-TS-13)		
18551	Battery Box Installation		
18552	Battery Box Support Bracket		
18553	Battery Box Bracket		
19705	Battery Box Support Bracket		
20063	Crankcase Cowling Disc		
20064	Crankcase cowling disc support		

Waco Model YMF

DRAWING LIST

Group C - Fuselage

Part No.	Name	Last rev'n	Sup'd by
91	Fitting Lug	E	
98	Clip, Front, Lower Door	A	
3207	Door Tube End Disc		
3766	Rudder Stop on Fuselage	C	
3953	Top Door Jamb		
10527	Bushings - Bearings	D	
11533	Bearing - 3/8- Pulley	C	
11599	Stop Brake Lock	B	
12409	Bottom Brake Pulley Bearing	A	
14607	Landing Gear Center Brace Fitting	B	
16734	Tail Wheel Attaching Bushing		
18080	Cabane Wire Fitting		
13031	Cabane Wire Fitting Assembly		
18109	Torque Tube Front Bearing Support	D	
18110	Torque Tube Rear Bearing Support	E	
18136	Rear Landing Gear Lug	C	
18154	Rear Seat Shock Absorber Support Lug	A	
18342	Bottom Rudder Hinge Bushing		
18343	Bottom Stabilizer Brace Bushing		
18345	Tail Wheel Shock Strut Fitting		
18347	Fuselage Frame Assembly	B G, L P	
18348	Fuselage Frame Sections	A	
18364	Auxiliary Fin Attachment Bracket		
18367	Rear Throttle Lever Attachment Fitting		
18370	Fuselage Fitting Drawing	K	
18376	Front Throttle Lever Attachment Fitting		

Waco Model YMF

DRAWING LIST

Group C - Fuselage

Part No.	Name	Last rev'n	Sup'd by
13377	Rear Seat Support Assembly		
13378	Top Front Motor Mount Patch		
13379	Side Front Motor Mount Patch		
13380	Bottom Front Motor Mount Patch		
13402	Bottom Rear Motor Mount Patch		
13403	Fuselage Center Cross Brace Patch		
13404	CenterSection Strut Bushing Patch-Front		
13405	Front Landing Gear Lug Patch - L. H.		
13406	Front Landing Gear Lug Patch - R. H.		
13407	Rear Center Section Bushing Patch		
13408	Front Wing Fitting Patch		
13409	Rear Wing Fitting Patch		
13410	Landing Gear Center Brace Tube Patch		
13411	Front Bay Top Center Patch		
13415	Flying Wire Bushings		
13440	Motor Mount Ass'y	D, F. G	
13726	Fuselage Reinforcement Installation		
19100	Motor Mount Ring Ass'y	C	
19333	Stabilizer Attachment "U" Clip		
19384	Bracket for Stabilizer Attachment "U" Clip		
19395	Stabilizer Guide Post Ass'y		
19396	Stabilizer Stop Plate		
19399	Stabilizer Adjustment Attachment Plate on Fuselage		
19511	Lift Tube Retainer on Fuselage		
19512	Lift Tube Retainer Gusset	A	
*13665	Longeron Reinforcing Tubes		

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
1041	Aileron Bellcrank Bushing	F	
3583-9	Aileron Bellcrank Bracket	J	
8459	Aileron Push Rod Threaded Bushing		
8460	Aileron Push Rod Adjustment Fork		
8470	Interplane Strut Adjustment Screw	G	
8473	Compression Strut End Cap	C	
8516	Interplane Strut Threaded Bushing	D	
10523	Sheet #1 Spar Bushing	J	
10523	Sheet #2 Spar Bushing	A	
10524	1/4" Wing Compression Tube Bolt	B	
10528	Bearing Bushing	M	
10546	Turnbuckles	A	
11619	Solid Tail Rib Ass'y	B	
11626	False Rib Ass'y	B	
11666	Nose Web		
11683	Aileron Horn	F	
11684	Aileron Strut Fitting Reinforcement	C	
11727	Nose Web for Footwalk		
11736	Upper Aileron Strut Fitting	D	
11737	Lower Aileron Strut Fitting	D	
12306	"A" 3/4 Light Rib Ass'y		
12308	"A" 1/2 Light Rib Ass'y		
12343	"A" Full Light Rib		
12347	Dural Leading Edge	C	
12355	Reinforcement Block-Leading Edge Tip-Top		
12356	Reinforcement Block-Leading Tip-Bottom		
12371	Aileron Rod Plywood Guide Block Ass'y	A	

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
12378	False Spar	A	
12380	False Spar Reinforcement Installation		
12381	False Spar Reinforcement Bracket	D	
12668	Wire Clip		
12677	Lower Wing Dural Spar Bushing	C	
12678	Washer for Dural Spar Bushing		
13506	Wing Compression Strut	M	
13713	"A" Full Light Rib		
13739	(12311) "C" Short Compression Rib Ass'y		
13746	"A" 3/4 Light Rib Ass'y		
13799	Light Tail Rib		
14072	Center Section Gas Tank Top Support		
14073	Center Section Gas Tank Bottom Support	F	
14257	Gas Tank Tie Bolt Clip		
15507	Internal Drag Wire Ass'y	K	
15526	Washer for Dural Spar Bushing		
15530	Upper Wing Double Wire Clip	A	
15532	1" Dural Spar Bushing	C	
15533	Washer For Dural Spar Bushing		
15780	Aileron Bellcrank	C	
15783	Solid Tail Rib Ass'y		
15788	False Spar Reinforcement Block at Bellcrank		
15791	Bellcrank and aileron hinge installation		
16555	Internal Drag Wires	B	
16600	Ball Seat for compression struts		
16625	Wing Compression Tube Seat		
18026	Center Section Strut Plate Blank		

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
18027	Center Section Strut "U" Plate	A	
18028	Center Section Strut Plate	A	
18087	Front Root Installation (Lower Wing)		
18088	Lower Wing Front Strut Point Installation	J	
18089	Rear Root Installation (Lower Wing)	A	
18090	Lower Rear Strut Point Installation	F	
18094	Upper Wing Front Spar	F	
18095	Upper Wing Rear Spar	C	
18096	Aileron Push Tube Ass'y		
18098	Lower Wing Rear Spar	E	
18099	Left Lower Wing Front Spar	E	
18100	Wire Clip		
18101	Lower Strut Point Wire Clip	B	
18102	Center Section Front Spar	I	
18103	Center Section Rear Spar	I	
18104	Center Section Frame Ass'y	C	
18105	Upper Front Root Installation	I, R	
18106	Upper Rear Root Installation	G, N	
18107	Upper Front Strut Installation	J	
18108	Upper Rear Root Installation	H	
18118	Lower Front Root Fitting		
18119	Lower Wing Foot Fitting Plate		
18120	Lower Rear Root Fitting		
18121+22	Aileron Assembly	A	
18123	Blank Double Wire Clip		
18124	Spar Plate Reinforcement	A	
18125	Center Section End Rib Ass'y		

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
18126	Center Section Long Tail Rib Ass'y		
18127	Center Section Short Tail Rib		
18128	Center Section Fuel Tank Support		
18129	Center Section Trailing Edge		
18130	Spar Plate (Upper Wing Strut Plate)	A	
18133	Wire Clip Blank	A	
18134	Wire Clip (external wire)	D	
18140	Upper Wing Root Plate	C	
18142	Center Section Dural Leading Edge	A	
18143	Center Section Rear Fitting	B, E	
18144	Center Section Front Fitting	B, E	
18146	Lower Front Strut Fitting Ass'y	E	
18148	Lower Front Strut Plate	A	
18149	Lower Rear Strut Point Plate	A	
18155	Lower Wing Root Wire Clip		
18157	Wire Clip		
18158	Double Wire Clip		
18163	"B" Short Compression Rib (upper wing)		
18164	"B" Short Compression Rib (lower wing)		
18167	Front Strut Point Spar Plate (upper wing)	D	
18168	Rear Strut Point Spar Plate (upper wing)	E	
18169	Wire Clip		
18170	Wire Clip		
18178	Right Lower Wing Frame Ass'y	A	
18181	Upper Wing Solid End Rib		
18183	Right Lower Wing 3rd. Root Rib		
18186	#1 Solid Tail Rib Ass'y (upper wing)		

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
18187	#2 Solid Tail Rib (upper wing)		
18188	Left Lower Wing Frame Ass'y	G, J	
18189	Upper Wing Frame Ass'y	I	
18192	#2 "A" Rib Ass'y Lower Wing		
18193	"A" 3/4 Light Rib At Strut Point (lower wing)		
18194	Lower Wing Trailing Edge		
18195	3/4 "A" Rib At Strut Point (Upper Wing)		
18197	Upper Wing Trailing Edge		
18200	Center End Rib		
18201	#1 Center Rib (Left lower wing)		
18202	#2 Center Rib (left lower wing)		
18203	#3 Center Rib (left lower wing)		
18204	#4 Center Rib (left lower wing)		
18205	Nose End Rib (left lower wing)		
18206	Nose Rib (Left lower wing)		
18207	End Rib Tail (left lower wing)		
18208	#1 Tail Rib (left lower wing)		
18209	#2 Tail Rib (left lower wing)		
18210	#3 Tail Rib (left lower wing)		
18211	#4 Tail Rib (left lower wing)		
18215	Wing Spars	A	
18223	Lower Wing False Spar		
18224	Lower Wing 4th Root Rib, Right		
18225	Double Wire Clip, Lower Wing		
18226	5/8 Diameter Pin Washer		
18227	WireClip, Lower Wing Root		
18254	C. S. Center Tail Rib		
18255	C. S. Center Nose Rib		

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
18257	Ball Seat for Compression Strut		
18258	Washer for Ball Seat		
18263	Wire Clip		
18321	#2 Tail Rib		
18349	Front Interplane Strut		
18350	Rear Interplane Strut		
18351	Diagonal Interplane Strut	A	
18353	Spar Plate Reinforcement (at strut point)		
18354	Spar Plate Weld Ass'y		
18355	Diagonal Interplane Strut Plate		
18356	Interplane Strut Plate, Front and Rear		
18358	Bushing for Interplane Strut		
18359	Bushing for Interplane Strut		
18362	Lower Rear Spar Plate Ass'y		
18381	Wire Clip Reinforcing Plate		
18383	Tapered Bushing, Wing Attachment		
18385	Front Gusset for Rear Strut Point Spar Plate		
18386	Rear Gusset for Rear Strut Point Spar Plate		
18387	Center Section Strut Ass'y		
18388	Front Gusset for Front Strut Point Spar Plate		
18389	Rear Gusset for Front Strut Point Spar Plate		
18390	Wire Clips		
18393	Spar Plate (inner) strut point, Upper Wing		
18394	Spar Plate Gusset, Lower Front Strut Point		
18395	Spar Plate Gusset, Lower Front Strut Point		
18396	Spar Plate Ass'y, Lower Front Strut Point		
18397	Rear Strut Point Plate Ass'y		

Waco Model YMF

DRAWING LIST

Group D - Wings

Part No.	Name	Last rev'n	Sup'd by
18398	Dural Spar Bushing, Upper Wing		
18399	Front Strut Point Spar Plate Ass'y		
18400	Special "A" Full Light Rib, Upper Wing		
18416	Rear Busset for Rear Strut Point Spar Plate		
18418	Aileron Strut Adjusting Screw		
18419	Aileron Strut Ass'y		
18538 + 9	Wing To Center Section Root Bushings		
18595	Center Section Reinforcing Fitting		
19017	Wire Clip		
19256	Typical Compression Strut Installation		

Waco Model YMF

DRAWING LIST

Group E - Empennage

Part No.	Name	Last rev'n	Sup'd by
8178	Elevator Control Horn Ass'y	O	
8179	Elevator Control Horn	F	
8231	Stabilizer Adj. Universal Bearing	O	
8232	Stabilizer Adj. Universal Bearing Seat	D	
8510	Elevator Frame Assembly	M	
9158	Stabilizer Adj. Top Universal Bearing Seat	B	
9159	Stabilizer Adj. Universal Threaded Bearing Ass'y	C	
9160	Stabilizer Adj. Universal Bearing Pin	B	
9258	Stabilizer Adj. Universal Shim	B	
10540-5	Stabilizer Adjustment Pulley	D	
10548	Tail Brace Wire Clip		
11531	Tail Surface Hinge Bearing	K	
11532	Tail Surface Hinge Bearing "U" Bolt	C	
11535	Installation Dwg. of Hinge on Tail Surface	G	
15173	Stabilizer Adjustment Screw	A	
16769	Elevator Frame Anchor Bolt		
16789	Bearing Anchor Bolt Forging		
17163	Fin Attachment Bolt and Support Tube Shackle Ass'y		
18015	Tab Support Bracket	A	
18021	Rudder Control Horn		
18322	Rudder Tab Ass'y		18725
18341	Bearing Mounting Bracket (Rudder)		
18372	Fin Frame Ass'y		19296
18373	Rudder Frame Assembly		19297
18427	Empennage Ass'y		19305
18466	Fin Bracket Support Tube Ass'y		
18558	Rear Elevator Horn		
18725	Rudder Tab Assembly		

DRAWING LIST

Waco Model YMF

Group E - Empennage

Part No.	Name	Last rev'n	Sup'd by
18765	Empennage Assembly		
19296-	Fin-Frame-Assembly	H	19478
19297	Rudder-Frame-Assembly-	I	19479
19395	Empennage-Assembly-	Jv-f	18765
19379	Fin Bracket Support Tube	A	
19380	Fin Attachment Bolt and Support Tube Shackle Assembly		
19415	Stabilizer Frame Assembly		
19478	Fin Frame Assembly	A	
19479	Rudder Frame Assembly	B	

Waco Model YMF

DRAWING LIST

Group F - Landing Equipment

Part No.	Name	Last rev'n	Sup'd by
8101	Tail Wheel Bronze Bushing	A	
11533-3	Piston Lower Bushing	C	
11535	Landing Gear Shock Strut Piston Cup Washer	D	
11536	Landing Gear Shock Strut Piston Cup Washer Retainer	C	
12021	Shock Strut Spring	B	
14124	Landing Gear Shock Strut Cylinder Reinforcement At Attachment Bushing		
14130	Landing Gear Shock Strut Piston Upper Bushing	B	
14131	Landing Gear Shock Strut Piston Reinforcement		
14132	Landing Gear Shock Strut Piston Lock Nut		
14133	Landing Gear Shock Strut Piston Lock Wire		
14135	Landing Gear Shock Strut Piston Retainer Bearing	D	
14136	Landing Gear Shock Strut Packing Retainer	A	
15578	Forging for Shock Strut Bracing		
15586	Landing-Gear Shock-Strut-Cylinder-Assembly		19012
15587	Splined Flange		
15588	Landing Gear Shock Strut Outer Case Flange		
15590	Landing Gear Side Strut Fitting		
15597	Landing-Gear-Shock-Strut-Cylinder		15924
15598	Landing-Gear-Shock-Strut-Cylinder-Sleeve-Assembly		15923
15599	Landing Gear Shock Strut Piston Stop		
15652	Landing Gear Streamline Bulkhead Ass'y		
15923	Landing Gear Shock Strut Cylinder Sleeve Ass'y	A	
15924	Landing Gear Shock Strut Cylinder		
15933	Landing Gear Shock Strut Cylinder and Rear Strut Assembly		
16526	Tail Wheel shock strut ass'y		
16528	Tail Wheel Shock Strut Lower Tube Ass'y		

Waco Model YMF

DRAWING LIST

Group F - Landing Equipment

Part No.	Name	Last rev'n	Sup'd by
16529	Tail Wheel Shock Strut Upper Tube Ass'y		
16531	Tail Wheel Support Ass'y		
16532	Tail Wheel Support Bushing		
16533	Tail Wheel Support Bushing (at pivot)		
16733	Tail Wheel Fork Retainer Ass'y		
16735	Tail Wheel Shock Strut Rubber Bumper		
16736	Tail Wheel Shock Strut Bumper Block		
16837	Upper Bushing Landing Gear Shock Strut Piston		
16838	Lower Bushing Piston		
18010	Tail Wheel Installation	B	
18084	Landing-Gear-Rear-Strut-Assembly-		19028
18062	Tail Wheel Fork Ass'y		
18145	Landing Gear Installation dwg.	B	18704
18365	Landing Gear Center Brace		
18366	Landing Gear Center Brace Ass'y		
18420	Landing-Gear-Shock-Strut-Ass'y		19009
18704	Landing Gear Installation		
19009	Landing Gear Shock Strut Assembly	B	
19012	Landing Gear Shock Strut Cylinder Assembly		
19028	Landing Gear Rear Strut Assembly		
19033	Landing Gear Splined Strut Assembly		
19035	Landing Gear Axle and Splined Strut Assembly	A	
19234	Landing Gear Shock Strut Piston Assembly		
19636	Landing Gear Center Brace End Fitting	B	
19637	Landing Gear Center Brace Bushing		
978	Tail Skid Shoe)		
19406	Tail Skid Installation)	A	Special as used on Model CJC
19407	Tail Skid Assembly)	A	

Group H - Furnishings

Part No.	Name	Last rev'n	Sup'd by
12542	Front Seat Frame ass'y	E	
13264	Safety Belt Female Release	C	
13265	Safety Belt Release Lever	C	
14326	Safety Belt Ass'y Front		
13042	Front Seat Installation	D	
13043	Front Seat Back Ass'y		
13044	Front Cockpit Seat Back	A	
18141	Front Seat Safety Belt Strap		
18153	Rear Seat Safety Belt Strap		
18450	Luggage Compartment Installation		
18454	Rear Seat Installation		
18455	Front Seat Installation (Special)		
18478	Safety Belt Cable		
18485	Front Cockpit Cowl and Baggage Compt.		
18884	Brace Tube at Bottom of Rear Seat Support Tubes	A	

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Waco Model Y1F

Group I - Flying Controls

Part No.	Name	Last rev'n	Sup'd by
138	Plate Control		
839	Rear Control Shaft Bearing Cap	A	
1547	Brake Pulley	B	
8173	Elevator Control Rear Horn Assembly	D	
8179	Elevator Control Rear Horn		
8235	Control Stick Rubber Grip		
8241	Rear Control Stick Socket	D	
8369	Rear Rudder Pedal Cable Clip Assembly		
8736	Rudder Pedal Assembly	E	
9120	Rudder Pedal Spring	B	
9260	Rear Rudder Pedal Bushing	A	
9359	Front Rudder Pedal Bushing	A	
9427	Torque Tube Flange		
10546	Turnbuckles Std. Sizes		
11544	Stabilizer Adjustment and Shackle	C	
11638	Aileron Strut Adj. Screw Bushing		
12533	Single Stabilizer Adjustment Pulley		
13063	Stabilizer Crank Escutcheon Plate	B	
15779	Aileron Drag Link Assembly		
18065	Elevator Torque Tube Short Bushing		
18066	Elevator Torque Tube Long Bushing		
18067	Elevator Torque Tube Short Bearing		
18068	Elevator Torque Tube Long Bearing		
18070	Front-Elevator-Tube-Bushing		Obsolete
18072	Rear Elevator Tube Rear Bushing		
18073	Rear Elevator Tube Front Bushing	A	
18074	Elevator Horn Assembly		
18075	Elevator Horn Bushing	A	

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Waco Model YMF

Group I - Flying Controls

Part No.	Name	Last rev'n	Sup'd by
18326	Control-Stick-Socket		18543
18360	Front Elevator Tube Fitting		
18361	Rear Elevator Tube Fitting		
18363	Front Elevator Tube Assembly	C	
18363	Elevator Torque Tube Assembly	A	
18371	Rear Elevator Tube Assembly	C	
18414	Aileron Torque Tube Plate		
18421	Flying Control Installation	E, J	
18422	Elevator-Cable---Upper		18423
18423	Elevator Cable - Lower		
18424	Rudder Cable - Front	A	
18425	Rudder Cable - Rear		
18442	Bushing		
18453	Rear Control Stick		
18457	Long Stabilizer Adjustment Spindel		
18458	Short Stabilizer Adjustment Spindel		
18462	Front Control Stick Assembly	A	
18464--	Rear-Control-Stick-Socket		18523
13475	Connecting Rod Fitting Assembly		
18523	Rear Control Stick Socket	B	
18533	Control Stick Socket Casting		
18536	Control Stick Socket Bushing		
18543	Front Control Stick Socket	A	
18544	Front Control Stick Ass'y (Special)		
18545	Elevator-Connecting-Rod-Fitting-Casting		18360
18546	Elevator-Connecting-Rod-Fitting--Control		18361
18547	Elevator-Control-Fitting-Bushing		
18548	Front-Elevator-Connecting-Rod		18363

Waco Model YMF

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Group I - Flying Control

Part No.	Name	Last rev'n	Sup'd by
18549	Rear-Elevator-Connecting-Rod-Ass'y		18371
18557	Front-Control-Stick-Spacer		
18559	Front-Elevator-Connecting-Rod-Bushing		
18586-	Elevator-Horn-Ass'y-	A	18074
18590	Rear-Elevator-Connecting-Rod		

List of drawings for Special 12.5 gallon fuel
tank in Right Upper Wing on Waco Model YMF

Part No.	Name	Last rev'n	Sup'd by
13870	Washer Tank Support Bracket Bolt		
14127	Bevel Washer		
15042	Gas Tank Tie Bolt		
15154	Washer Tank Support Bracket Bolt		
15155	Rib Attachment Bracket at Gas Tank Support		
15533	Washer		
18220	Auxiliary Fuel Tank	A	
18221	Wing Frame Ass'y		
18222	Fuel Tank Installation		
18463	Fuel Line Diagram		

July 5, 1940

DRAWING LIST

WACO MODEL UPF-7 - CAB SERIES

The following constitutes a complete list of drawings which pertain to the subject model airplane, of which Model CPF is the basic model.

Paul J. Westfall

Paul J. Westfall

THE WACO AIRCRAFT COMPANY

Troy - Ohio

New prints and also prints with latest revisions which are being submitted with this list are designated by an *.

Complete revised drawing list - 9/11/40

THE WACO AIRCRAFT CO.

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MODEL UPF-7 (CAB)

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B - Power Plant

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Group A - Airplane

PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGINAL USE ON MOD
22141	Three View Drawing	B, E, F		UPF-7
<u>Group B - Power Plant</u>				
15155	Gas Tank Rib Attach. Bracket			UEC
15894	Bearing for Remote Control Door Latch Lever	obs.		BIG
19707	Extension - Battery Box Slip Terminal	A		UKC
19758	Hose - Battery Box Slip Terminal Spring Ret.	A		"
19846	Bracket - Battery Box	A		YKC
20780	Fuel Tank Inst.	F, L, M		GPF
*21416	Exhaust Collector Ring	Bobs.	22927	UKS-7
21681	Filler Neck and Cap Assembly (Oil Tank)	A, E		UMF
*21759	Oil Tank Assembly	A		UPF-7
*22774	Oil Tank Assembly	D, F		
*22808	Plate - Rear Throttle Mounting	obs.	22680	"
22099	Fuel Tank Assembly	C, I		"
*22136	Aircoop Cover	B		"
22189	Front Support - Oil Tank			"
22190	Rear Support - Oil Tank			"
*22191	Fuel Cock and Throttle Inst.	obs.	22805	"
*22195	Oil Tank Inst.	B		"
*22324	Fuel Line Diagram	A, B, C		"
*22375	Throttle Draglink Assembly	C		"
22676				"
*22475	Handle Shaft - Long - Fuel Valve			"
*22478	Handle Shaft - Short - Fuel Valve			"
*22486	Plate - Front Throttle Mounting	C, E		"
*22488	End Retainer	obs.		"
*22489	End Retainer - Exhaust Collector Ring	obs.	23107	"

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MODEL UPF-7 (CAB)

GROUP B - Power Plant

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
*22689	Tube Flange - Exhaust Collector Ring	C, D	23108	UPF-7
*22692	Throttle Control Inst.	A, E		"
*22693	Push Rod - Throttle Control	A		"
*22694	Push Rod - Throttle Control	A		"
*22695	Push Rod - Throttle control	A, C		"
*22696	Bellcrank - Throttle Control			"
*22697	Bellcrank Assembly - Throttle Control			"
*22698	Bellcrank Support - Throttle Control	A		"
*22699	Spacer - Throttle Control			"
*22700	Clamp - Throttle Control	obs.		"
*22701	Clamp - Throttle Control	A obs.		"
*22702	Bolt - Throttle Control	A		"
*22703	Boot - Throttle Control			"
*22706	Support - Throttle Push Rod Boot			"
*22754	Air Cleaner Inst. -	H, I obs	23043	"
*22771	Battery Box Channel Support			UPF-7 (CA)
*22772	Battery Box Assembly			" "
*22773	Battery Box Inst,	C		" "
*22784	Engine Inst.	T, V, W, Y D', F', G', H		" "
*22801	Air Scoop Housing - Cont. R-670-5A	F, H		" "
*22802	Air Scoop Assembly	J, M, N, Q		" "
*22818	Air Scoop Control Support	obs.		" "
*22819	Air Scoop Valve Arm (Rear)	obs.		" "

THE WACO AIRCRAFT CO.

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MODEL UPF-7 (CAB)

GROUP B - Power Plant

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
*22825	Air Scoop Hot Air Duct Attachment	obs.	22711	UPF-7 (CA
*22826	Air Scoop Rear Valve Assembly	E obs.	22712	" "
*22827	Air Scoop Hinge Spacer	A obs.		" "
*22828	Air Scoop Hot Air Exhaust Collar	obs.		" "
*25396	Terminal Clip			UPF-7
*25417	Clip - Throttle Draglink	A		"
*25418	End Fitting - Throttle Draglink - Female	A		"
*25419	End Fitting - Throttle Draglink - Male			"
*25420	Cover tube - throttle draglink			"
36333	Stud - Slip Terminal Battery Box	C		YQC-6
36334	Spring - Slip Terminal Battery Box	A		"
36335	Slip Terminal Assembly Battery Box	B		"
*37759	Inner Elbow - Cabin Ventilator	A		C-7
47503	Channel - Battery Box Tray			ARE
47504	Tray - Battery Box ←	A, B obs.	22899	ARE
12429	Mixture Control Adapter	C		UBF
14401	Gas Tank Tie Bolt	B		KBA
14127	Gas Tank Tie Bolt Washer	E		"
15 042	Gas Tank Tie Bolt	C, F		UEC
22575	Gas Tank Top Support Plates	A		
22680	Rear Throttle Support			UPF-7
22805	Fuel Cock and Throttle Inst.	A		"
22853	Carburetor Hot Air Intake Deflector	obs.	23633	"
22894	Intensifier Tube Extension	B, C obs.	23634	"
22898	Mixture Control End Anchor			"

THE WACO AIRCRAFT CO.

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MODEL UPF-7 (CAB)

GROUP B - Power Plant

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGIN. USE ON M
22899	Battery Box Tray Assembly			UPF-7
22911	Airscoop Hot Air Duct Attachment-Left	BC		"
22912	Airscoop Hot Air Duct Attachment - Right	QD		"
22924	Mixture control Bolt	A		"
22927	Exhaust Collector Ring Assembly--	obs.	23165	"
23043	Air Cleaner Installation	BD		"
23110	Engine Compartment Heater Backfire Screen	obs.		"
23146	Oil Tank Preheat Chamber Assembly (Alt.)			"
23147	Cylinder - Oil Tank Preheat Chamber (Alt.)			"
23148	Tube Inlet - Oil Tank Preheat Chamber (Alt.)			"
23149	Tube Outlet - Oil Tank preheat Chamber (Alt.)			"
23150	Attach. Washer - Oil Tank Pre. Chamber (Alt.)			"
23151	Attach. Fitting- Oil Tank Pre. Chamber (Alt.)			"
23152	Top - Oil Tank preheat Chamber (Alt.)			"
23153	Bottom Spacer - Oil Tank Preheat Chamber(Alt)			"
23154	Gasket - Oil Tank Preheat Chamber (Alt.)			"
11580	Alum. 3/4" Hose Connection for Oil Tank	C		QDC
23094	Corner Plate - Gas Tank			UPF-7
22846	Cockpit Vent. Valve Assembly			"
22849	Oil Temp. Bulb Adapter			"
22869	Oil Scavenger Line			"
45647	Fuel Strainer Assembly	M,N		"
23107	Tube Flange Exhaust Collector	D		"
23108	Tube Flange Exhaust Collector	D		"
23165	Exhaust Collector Ring Assembly. Slip Joint			"
36281	Connecting Flange - Exhaust collector ring	B		C-6
23166	Support Ring - Exhaust Collector ring			UPF-7
23632	Shield - Rear - Carb. Airscoop			

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ORIGINAL DATE 1/26/42

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MODEL UPF-7

GROUP B - POWER PLANT

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
23633	Deflector - Carburetor Hot Air Intake	A		UPF-7
23634	Intensifier Tube Extension	B		

THE WACO AIRCRAFT CO.

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MODEL UPT-7 (CAB)

REVISION DATES 9/11/40

GROUP C - Fuselage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
78	Engine Mount Patch			GXE
115	Engine Mount Patch			ASO
10528	Bushings and Bearings	B,U'		KBA
10528	Bushings and Bearings	M'		"
13410	Engine Mount Ring Assembly	U		QDC
16734	Tail Wheel Attachment Bushing	B		UKC
18110	Torque tube rear bearing support	G		UMF
18377	Rear Seat Support Assembly	H		"
18379	Side Front Motor Mount Patch			"
18403	Fuselage Center Cross Brace Patch			"
18407	Rear Center Section Bushing Patch	obs.	23291	"
18409	Rear Wing Fitting Patch			"
18430	Front Seat Support	H		"
18454	Rear Seat Inst.	BH		"
18455	Front Seat Inst.	C,K		"
*18862	Front and Rear Seat	G,K,R, T,U		CPF
20453	Motor Mount Rubber Bushing			YQC
20553	Fuselage Bushing - Front - Lower Wing	B		CPF
20554	Fuselage Bushing - Rear - Lower wing	C		"
*20613	Front and Rear Rudder Pedal Support Bracket	A		"
*20628	Patch - Front Center Section Bushing Patch			"
*21381	Bushing - Brake Quad. Support			"
21885	Door Reinf. Patch			UPF
21887	Fuselage Reinf. Patch			"

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MODEL UPF-7 (CAB)

GROUP C - Fuselage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
21912	Cabane Wire Attach. Bushing	A		UPF-7
21913	Cabane Wire Plate	C		"
21914	Cabane Wire Attach. Yoke			"
21915	Cabane Wire Attach. Inst.	A,B		"
22017	L. Gear Shock Strut Front Support	A		UPF-7
22018	L. Gear Shock Strut Front Support Lug			"
22055	Flying Wire Bushing	A,D		"
*22057	Fuselage Frame Assembly	U,W		"
22058	Fuselage Frame Section	C,D		"
*22061	Fuselage Frame Fittings	T,Z,B' C',D',E',G'		"
*22082	Door Plate	A		"
22085	Rear Rudder Pedal Mounting Bushing			"
22089) 22835)	Motor Mount Assembly	E,F		"
22105	L. Gear Shock Strut Front Support Rear Lug			"
22106	L. Gear Shock Strut Support Reinf.			"
22107	L. G. Shock Strut Support Reinf.			"
22108	L. G. Center Brace Strut Strap			"
22109	L. G. Shock Strut Lug Patch -- Rear	Obs.		"
22110	L. G. Front Lug Patch			"
22115	L. G. Center Brace Washer Plate			"
22117	L. G. Center Brace "U" Plate			"
22124	L. G. Rear Brace Strut Fitting Rear Plate			"
22125	L. G. Rear Brace Strut Fitting Front Plate	A		"
22126	L. G. Rear Brace Strut Fitting Assembly	B		"

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MODEL UPF-7 (QAB)

GROUP C - Fuselage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
22127	Front Rudder Pedal Mounting Bushing	A		UPF-7
22128	L. Gear Center Brace Strut Fitting Assembly			"
22157	Torque Tube Front Bearing Support			"
*22218	Motor Mount Threaded Bushing			"
*22273	Front Leveling Lug			"
*22274	Rear Leveling Lug			"
*22371	Lower Front Wing Root Reinf. Patch			"
*22332	Gusset - Front Rudder Bushing			"
*22472	Handle Bracket - Rear Dial - Fuel Valve			"
*22474	Bracket - Fuel Shut-off valve			"
30313	Stab. Adj. Screw Support	A, C		YOC
30314	Lower Rudder Hinge Support	A, C		"
*30346b	Gusset - Fuselage (Sta. X)			"
30354	Tail-Brace Wire Bushing	obs.	23089	"
30418	Tail Wheel Shock Strut Fitting	A		"
30426	Motor Mount Threaded Bushing	obs.	22218	"
30508	Motor Mount Taper Bushing	A		"
30510	Motor Mount Patch	A		"
31262	Lower Rear Fin Fitting	A		"
31313	Elevator Control shaft bracket	A		"
31314	Elevator Control Shaft Bracket	A		"
31673	Top Longeron Patch at Sta. IX)			"
33069	Reinf. Strap			YOC-6
35608	Reinf. Strap Front Wing Fitting			YOC-7

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MODEL UPF-7 (CAB)

GROUP C - Fuselage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
22679	Safety Belt End Loop	A		UPF-7
22684	Safety Belt Link	A		"
22720	Hinge Reinf. Strip - Aileron	A		YKS-7
22803	Starter Bracket	A		"
22938	Safety Belt Assembly			"
22958	Landing Gear Shock Strut Rear Support Fitting			"
22959	Landing Gear Shock Strut Rear Support Reinf. Fitting			"
22968	Spacer - pilot seat adjustment			"
30461	Bushing - Safety Belt	A		"
36888	Landing Gear Shock Strut Rear Support Reinf. Fitting	A		YGC-7
57626	Bevel-Washer	A-		YGC-7
35528	Reinforcement Patch			
22944	Plate - Safety Belt Attachment Fitting			UPF-7(CA)
22945	Anchor Knob - Safety Belt Attachment			"
22946	Spring Clip - Safety Belt Attach. Fitting	A		"
22947	Safety Belt Attach. Fitting Assembly	B		"
22951	Reinforcement - Safety Belt Attach. Fitting	A		"
23085	Acrobatic Harness Assembly			"
23083	Safety Belt Installation			"
23082	Shoulder Protection - Rear seat			"
23084	Block - Rear Seat	B		"
23091	Shoulder Protection Inst.			"
23089	Bushing - Stab. Brace Wire			"
23170	Clip - Front Seat Guide			"
23291	Patch - Rear Center Section Strut Bushing	A		

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THE WACO AIRCRAFT CO.

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MODEL UPF-7 (CAB)

GROUP C- Fuselage

CONVERSION TO A 3 - PLACE AIRPLANE
(2 PASSENGERS IN FRONT SEAT)

PART NO.	NAME	LAST REV'N	EXP'D BY	ORIGINAL USE ON MODEL
* 18141	Strap - Front Seat Safety Belt	A		UPF-7 (CAB)
* 20342	Spring - Inspection Hole Cover	G		"
* 23324	Safety Belt End Loop	A		"
23702	Back - Front Seat	X B <i>HK</i>		"
23703	Stiffener - Front Seat Back	A		"
23704	Seat Installation - Front Seat	X B <i>HK</i>		"
* 23705	Clip - Floor Tie Down Front Section Elim.			"
x 23706	Clip - Floor Tie Down	A		"
* 23707	Clip - Floor Tie Down Aft. Section Elim.			"
* 23708	Clip - Floor Tie Down Aft. Section Center Elim.			"
* 23709	Floor - Front Cockpit Fore Section		23744	"
* 23710	Floor - Front Cockpit Aft. Section		23744	"
23711	Frame Assembly - Front Seat	X C <i>HK</i>		"
23712	Cushion - Back Front Cockpit	A		"
* 23713	Cable - Safety Belt Elim.			"
* 23714	Safety Belt Assembly - Front Cockpit Elim.			"
* 23715	Clamp - Rudder Pedal Spring Elim.			"
23716	Support - Seat	A		"
23717	Clamp - Seat Support			"
23718	Clip - Seat Support			"
* 23720	Cushion - Front Cockpit Seat			"
* 23737	Cover - Control Stick Floor Opening	<i>HK</i>	3/13/46	"
* 23738	Guard - Throttle			"
* 23739	Guard - Tail Wheel Lock			"
* 23740	Clamp - Throttle Guard Att.	A		"

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MODEL UPF-7 (CAB)

GROUP C- Fuselage

CONVERSION TO A 3 - PLACE AIRPLANE
(2 Passengers in Front Seat)

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
* 23742	Bracket - Throttle Guard Attach.	A		UPF-7 (CAB)
* 23743	Support - Front Seat Attach.			"
* 23744	Floor - Front Cockpit Center			"

APPROVED BY *[Signature]*
 AIRCRAFT APPLIANCE ENGINEERING
 DIVISION A. A. A. - REGION 3
 DATE 3/13/46

THE WACO AIRCRAFT CO.

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MODEL UPF-7 (CAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
3588	Aileron Bellcrank Bracket	J,K		ASO
8473	Wing Compression Strut End Cap	E		"
8516	Interplane Strut Threaded Bushing	D,F		"
10523	Sheet #1 - Spar Bushings	P,U		UIC
10523	Sheet #2 - Spar Bushings	H,K		YOC
10524	1/4" Wing Compression Strut Bolt	E		KBA
10528	Bushings, Sheet #1	B,U		KBA
10528	Bushings, Sheet #2	M		"
10546	Turnbuckles	A		"
10567	Spar Bushings	H,N		S3HD
11619	Solid Tail Rib Assembly	B,D		QCF
11683	Aileron Horn	F,K		QCF
11684	Aileron Strut Fitting Reinf.	C,E		"
11700	Solid End Rib Comp. Member - Upper Wing			"
11736	Upper Aileron Strut Fitting	D,E		"
11737	Lower Aileron Strut Fitting	D		"
*12265	Aileron Spar	C		UMF
12267	Aileron End Rib	D		UBF
*12270	Aileron Brace	E		"
12306	"A" 3/4 Light Rib Assembly	B		"
12343	"A" Full Light Rib	B		"
12347	Dural Leading Edge	C,D		KBA
12391	Aileron Rod Plywood Guide Block Assembly	A,C		"
12377	Aileron Hinge	C,E		"
12378	False Spar	A obs.	20721	"
12380	False Spar Reinf. Inst.	D		"
12381	False Spar Reinf. Bracket	D,C		QCF

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP D - Wings

ORIGINAL DATE 7/5/40
 REVISION DATES 8/16/40
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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
13506	Wing Compression Struts	V,X		UIC
13713	"A" Full Light Rib			QDC
14072	Center Section Gas Tank Top Support	F		KBA
14073	Center Section Gas Tank Bottom Support	G		"
14257	Gas Tank Tie Bolt Clip	D		"
15153	Washer - Plywood Reinf. Screw			UEC
15160	Reinf. - Plywood Under Gas Tank			"
15780	Aileron Bellcrank	C,I,J,K		UIC
15783	Solid Tail Rib Assembly			QDC
15791	Bellcrank and Aileron Hinge Inst.	A ,D,E		UIC
*16355	Internal Drag Wires	G		S3HD
16600	Ball Seat for Compression Struts			"
16601	Ball Seat for Compression Struts			"
16602	Ball Seat for Compression Struts			"
16625	Wing Compression Tube Seat			"
18026	Center Section Strut Plate Blank			UMF
18027	Center Section Strut "U" Plate	A,B		"
*18121-2	Aileron Assembly	G ,K,M, O		"
18124	Spar Plate Reinforcement	C		"
18133	Wire Clip Blank	C		"
18140	Upper Wing Root Plate	C,D		"
18142	Center Section Dural Leading Edge	A,B		"
18163	"B" Short Compression Rib			"
18200	Center End Rib	C		"
18204	1/4 Center Rib	B,C		"

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DRAWING LIST

MODEL UPF-7 (GAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGINAL USE ON MODEL
18226	Pin Washer	B		INT
18255	Center Section Tail Rib	B		"
18258	Washer for Ball Seat	B		"
18353	Spar-Plate-Reinforcement			"
18359	Interplane Strut Bushing	A		"
18383	Wing Attachment Tapered Bushing			"
18385	Rear-Strut-Point-Plate-Front-Gusset			"
18386	Rear-Strut-Point-Plate-Rear-Gusset			"
18388	Front-Strut-Point-Plate-Front-Gusset			"
18389	Front-Strut-Point-Plate-Rear-Gusset			"
18390	Wire Clip	C, E		"
18394	Lower-Front-Strut-Plate-Gusset			"
18395	Lower-Front-Strut-Plate-Gusset			"
18416	Rear-Strut-Point-Spar-Plate-Gusset			"
18588-9	Center Section Root Bushings	F		"
18598	Spar Plate Reinforcing Washer			"
19017	Wire Clip	B, G		UKC
19256	Typical Compression Strut Inset			"
20506	Center Section Strut End Fitting	A		CPY
20507	Blank - Plate - Center Section Strut			"
*20510	Upper Wing Frame Assembly (Std.)	U, V, X, Z, C, E		"
20511	Lower Wing Strut Point Truss			"
20512	Std. Full Rib			"
20513	Std. Rib - Aileron Root			"
20514	Upper Wing Aileron Rib			"

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
20516	Upper Wing Solid End Rib			CPF
20517	Upper Wing Outboard Compression Rib	obs.	23099	"
20518	Upper Wing Strut Point Truss			"
20521	Upper Wing Front Spar	D, E		"
20522	Upper Wing Rear Spar	B, E		"
*20523	Upper Front Strut Fitting Inst.	B-obs.	22931	"
*20524	Upper Rear Strut Fitting Inst.	B obs.	22940	"
*20525	Upper Front Wing Root Fitting Inst.	I		"
20526	Upper Front Strut Fitting Plate	obs.	22934	"
20531	Wire Clip	A		"
20532	Wire Clip Blank	A		"
20533	Wire Clip Reinforcement	A		"
20534	Upper Rear Strut Fitting Plate	obs.	22934	"
20535	Upper Rear Strut Fitting Assembly	obs.		"
20536	Center Section Landing Wire Clip	A		"
*20538	Left Lower Wing Frame Assembly	H, I, N Q, T, V		"
20539	Lower Wing Front Spar	B, C, G		"
20540	Lower Wing Rear Spar	B, C, E G		"
20541	Lower Wing Rear Root Inst.	A		"
20542	Lower Front Fitting Inst.			"
*20543	Lower Front Strut Fitting Inst.	B-obs.	22942	"
*20544	Lower Rear Strut Fitting Inst.	B-obs.	22943	"
20545	Lower Wing False Spar	G, H, K		"
20546	Lower Short Compression Rib	A-obs.	23102	"
20548	Lower Wing Drag Wire Fitting Inst.	E		"

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MODEL UPF-7 (CAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
*20562	Center Section Wire Clip			CPF
20563	Wire Clip	A		"
20564	Lower Front Root Fitting Assembly			"
*20565	Lower Front Root Fitting Plate	B		"
20566	Lower Rear Root Fitting Assembly	A		"
*20567	Lower Rear Root Fitting Plate	B,C		"
20568	Lower Front Strut Fitting Plate	obs.	22941	"
20579	Drag Wire Clip			"
20580	Drag Wire Clip	A		"
20582	Center Section Front Spar Assembly	D		"
20585	3/4" Pin Washer	A		"
20586	Spar Plate Washer	A,B		"
20588	Wing Frame Assembly (Aux. fuel tank)			"
20589	Solid Center Web (Up. wing spec. aux. tank)			"
20591	Lower Rear Strut Fitting Plate	obs.	22941	"
20592	Drag Wire Clip Plate			"
20593	Lower Wing Drag Wire Fitting Inst.	E		"
20603	Diagonal Interplane Strut Plate	A		"
20604	Front and Rear Interplane Strut Plate	A		"
20609	Aileron Push Tube Assembly (also see page 1-I)	B,C,D		"
20610	Aileron Push Rod Threaded Bushing (see page 1-I)	A		"
20611	Aileron Push Rod Clevis (also see page 1-I)			"
20626	Wire Lugs (special)			"
20627	Wire Lugs (special)			"
20630	Right Lower Wing Frame Assembly			"

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MODEL UPF-7 (CAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
20772	"U" Clip - Compression Strut End	A		CPF
20775	Center Section Reinf. Truss	A		"
21441 9	Drag Wire Extension Link - Lower wing			ZPF
21876	Center Section Front Fitting	D,F,G		UPF-7
21877	Center Section Front Fitting Plate			"
21878	Center Section Rear Fitting	B		"
21880	Center Section Strut Assembly	D,E		"
21881	Wing Attachment Taper Bushing	B		"
21884	Center Section and Upper Wing Front Spar Root Fitting Inst.	C,D,E		"
21890	Center Section and Upper Wing Rear Spar Root Fitting Inst.	C,D,E		"
21892	Center Section Frame Assembly	G,H		"
21894	Center Section Rear Spar	A		"
21897	Center Section Trailing Edge Brace			"
21898	Upper Wing Frame	A		"
21899	Center Section Trailing Edge Assembly	B		"
21906	Center Section End Rib	B		"
22004	Center Section Front Fitting Front Plate	B,E,F		"
22005	Center Section Front Fitting Assembly	A		"
22021	Interplane Strut Adj. Screw			"
22026	Diagonal Interplane Strut			"
22030	Rear Interplane Strut			"
22031	Front Interplane Strut			"
22096	Bushing - Center Section Strut - Front			"
22097	Bushing - Center Section Strut - Rear			"

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MODEL UPF-7 (CAB)

GROUP D - Wings

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
22113	Upper Rear Strut Fitting Reinf.	A,B		UPF-7
22114	Center Section Compression Strut "U" Clip	E		"
22121	Center Section Compression Strut	A		"
22138	Lower Wing Plywood Tip	B,D		"
22139	Upper Wing Plywood Tip	B		"
*22630	Pin Washer			UPF-7 (CAB)
*22631	Double Wire Clip	A		"
*22632	Double Wire Clip	A		"
*22633	Double Wire Clip	B,D		"
*22634	Double Wire Clip	B,C		"
*22635	Single Wire Clip	A		"
*22636	Single Wire Clip			"
*22637	Upper Rear Strut Point Fitting Assembly	obs.	22939	"
*22638	Upper Front Strut Point Fitting Assembly	obs.	22932 22933	"
*22640	Lower Front Strut Point Fitting Assembly			"
*22641	Lower Rear Strut Point Fitting Assembly			"
22931	Upper Wing Front Spar Strut Point Fitting Inst.	A,C		"
22932	Upper Wing Front Strut Point Fitting Ass'y Rear face of spar	obs.	23074	"
22933	Upper Wing Front Strut Point Fitting Ass'y Front face of spar	obs.	23073	"
22934	Upper Wing Strut Point Front and Rear Spar Plate	obs.	23068	"
22935	Upper Wing Strut Point Rear Spar Plate			"
22939	Upper Wing Strut Point Rear Spar Plate Ass'y	obs.	23072	"
22940	Upper Wing Rear Strut Point Fitting Inst.	C,D		"
22941	Lower Wing Rear Strut Point Fitting	obs.	23069	"

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DRAWING LIST

MODEL UPF-7 (CME)

GROUP D - Wings

ORIGINAL DATE 8/16/40

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PART NO.	NAME	LAST REV'N	CHG'D BY	ORIGINAL USE ON MOD
22942	Lower Wing Front Strut Point Fitting Inst.	A, B		UPF-7 (C)
22943	Lower Wing Rear Strut Point Fitting Inst.	A, B		"
23009	Substitute Drag Truss Wires			"
37426	Revel Washer	A		"
23029	Wire Clip Spacer Plate			"
23030	Wire Clip Rivet Assembly			"
22729	Aileron Hinge	B		"
23033	Compression Strut Rib	A		"
23064	Tip Rib #1 - Lower Wing	obs.	23101	"
23068	Upper Wing Strut Point Spar Plate	A		"
2306	Lower Wing Strut Point Spar Plate	A		"
23072	Upper Wing Rear Strut Point Spar Plate Ass'y	A, B		"
23073	Upper Wing Front Strut Point Spar Plate Ass'y - Front Face	A		"
23074	Upper Wing Front Strut Point Spar Plate Ass'y - Rear Face	A		"
23075	Upper Rear Spar Plate Spacer	A		"
23076	Upper Front Spar Plate Spacer	A		"
23086	Spacer Bushing - Front Spar Inst.			"
23087	Spacer Bushing - Rear Spar Inst.			"
23087	False Spar Bellcrank Bracket			"
23099	Tip Rib #3 - Upper wing			"
23101	Tip Rib #1 - Lower Wing			"
23102	Tip Rib #3 - Lower Wing			"
22146	Clip - Cowling Attachment	F		"
23056	Clip - Lower Wing Root Attachment	B		"
23199	Lower Wing Front Spar Repair Drawing	A		"

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MODEL UPF-7

GROUP D - WINGS

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2/23/42 11/3/41

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
23204	Birch Block - Lower Front Spar			UPF-7
23205	Spruce Block - Lower Front Spar			"
20721	False Spar - Upper Wing	E		CPF
23240	Bushing - Aileron Strut - Special (Alt.)			UPF-7
23241	Aileron Strut Assembly - Special (Alt.)	A		"
20774	Lug - Center Section End Reinf.	B		CPF
23483	Alternative - Aileron Tip Construction			UPF-7
23590	Center Section Reinf. Strut Assembly	B		"
23591	Plate - End Fitting - C.S. Reinf. Strut	A		"
23592	Plate - End Fitting - C.S. Reinf. Strut	A,B		"
23604-5	Aileron Assembly-Lower and upper (Alt.)	B,D		UPF-7
23607	Spar - Front - Aileron			"
23611	Horn Assembly - Aileron	B		"
23614	Gusset - Aileron Front Spar			"
23616	Rib - Aileron			"
23617	Rib - Aileron			"
23618	Rib - Aileron			"
23619	Rib - Aileron			"
23620	Rib - Aileron			"
23621	Rib - Aileron			"
23622	Rib - Aileron			"
23623	Gusset - Spar End - Aileron			"
23624	Gusset - Aileron Rib			"
23625	Gusset - Spar Rib			"

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DRAWING LIST

ORIGINAL DATE 2/4/42

MODEL UPF-7

GROUP D - WINGS

REVISION DATES

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
23626	Support - Upper Aileron Hinge (Alt.)			UPF-7
23627	Support - Lower Aileron Hinge "			"
23628	Reinforcement Upper Spar Aileron "			"
23629	Support - Lower Spar Aileron "			"
23630	Filler - Rear - Aileron "			"
23631	Former - Aileron "			"

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP E - Empennage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOI
17838	Front Center Fitting - Stab.	B		S3HD-A
**17871	Stabilizer End Fitting Ass'y.	G, I, J		"
17880	Stabilizer Wire Pull Assembly	D, G		"
21485	Rudder and Elevator Bearing Housing	obs.	22957	VPF
*22651	Nut - Stab. Adj. Screw	B		UPF-7 (CA
*22652	Sprocket - Stab. Adj. Nut	B		"
*22791	Roller Assembly - Stab. Adj.	A, B, D		"
30207	Rudder and Elevator Hinge Bearing	E obs.	22963	YOC
30211	Top Rudder Hinge "U" Bolt	A, C		YOC
30213	Elevator Outer Hinge "U" Bolt	A, C		"
30216	Elevator "C" Rib	A, E		"
30217	Top Rudder Rib	A, H		"
30283	Stabilizer Guide Bushing	obs.		"
30294	Stab. and Elevator Contour Dwg.			"
30320	Rudder Horn	B		"
30321	Extruded Aluminum Tubing			"
30322	Stabilizer Rear Hinge Fitting			"
30323	Rudder Top Rib Clip	A, E		"
30391	Rudder Spar -----	A obs.	22961	"
30434	Rudder Rib	A, F		"
30450	Rudder Frame Assembly	E obs.	22962	"
*30507	Empennage Inst.	R, W, Y, Z, B', D', F'		"
30569	Stabilizer Adjustment Guide	G, I		"
30894	Stabilizer Upper Brace Wire Assembly	H		"
30895	Stabilizer Lower Brace Wire Assembly	F obs.	23088	"

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MODEL UPF-7 (CAB)

GROUP E - Empennage

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
30941	Rudder and Fin Contour Dwg.	A,F		YOC
30980	Stabilizer "B" Rib	A,D,H		"
30985	Stabilizer Front Spar	D,G		"
30986	Stabilizer Rear Spar	J		"
*30990	Stabilizer Frame Assembly	V,X,A ¹ F		"
30991	Stabilizer Rear Center Hinge Fitting	D		"
31067	Elevator "B" Rib	A,DF		"
31069	Elevator "D" Rib	A,D,E		"
31070	Elevator "E" Rib	A,D,E		"
*31091	Elevator Frame Assembly	A,D	22965	"
31092	Elevator Spar Assembly	A obs.	22966	"
31099	Center Elevator Hinge "U" Bolt	A,B	31303	"
31100	Stabilizer Hinge Spacer	obs.	31235	"
31106	Stabilizer Spar Reinf. Block	B		"
31110	Stabilizer Brace Rod Clevis			"
31111	Stabilizer Brace Rod	B,D		"
31156	Stabilizer Trailing Edge	A,E,G		"
31157	Elevator Spar Hinge Bushing	obs.		"
31212	Stabilizer Rib Cap Strip			"
*31257	Fin Frame Assembly	X,B ₁ E ₁	23207	"
31258	Fin Front Spar	B	23206	"
31259	Fin Rear Spar	G		"
31261	Lower Front Fin Fitting	obs.	20837	"
31264	Fin "A" Rib	obs.	31506	"
31265	Fin "B" Rib	G, L	31507	"

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MODEL UPF-7 (CAB)

GROUP E - Empennage

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PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGINAL USE ON MC
31266	Fin "C" Rib	F,K		YOC
31267	Fin "D" Rib	L		"
31268	Fin Top Brace	C		"
31269	Fin Front Brace			"
31270	Fin Center Brace			"
31271	Fin Rear Brace			"
31272	Leading Edge Support	obs.	31508	"
31273	Fin Spar Reinf. Block			"
31274	Stabilizer End Rib Support	B,C,		"
31283	Stabilizer End Rib Brace	G,L		"
31294	Rudder Top Rib Leading Edge Former	D		"
31295	Rudder Top Bearing Leading Edge Former	G		"
31296	Rudder Bearing Leading Edge Former Top	G		"
31297	Rudder Top Bearing Leading Edge Reinf.	E		"
31298	Rudder Leading Edge Former	H		"
31299	Rudder Leading Edge Reinf.			"
31302	Rudder Center Hinge "U" Bolt	A obs.	31303	"
31303	Rudder Lower Hinge "U" Bolt	A,B		"
31311	Fin Spar Bushing	C		"
31325	Elevator Horn	B		"
32185	Top Fin Fitting - Wire Pull	B		"
32186	Upper Fin Fitting Assembly	A,C		"

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MODEL UPF-7 (CAB)

GROUP Group E - Empennage

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ORIGINAL DATE 8/26/40

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4/9/41

8/14/41

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
22957	Tail Surface Bearing	C		UPF-7
22961	Rudder Spar Assembly	A,B		"
22962	Rudder Frame Assembly	E		"
22965	Elevator Frame Assembly			"
22966	Elevator Spar Assembly	A		"
22967	Rudder and Elevator Bearing Shim	A,B		"
22973	Rudder and Elevator Bearing Shim	A,B		"
22974	Tail Surface Bearing Shim			"
22937	Fitting - Lower Front Fin	B obs.	23198	YPF
22941	Fitting - Reinf. Lower Front Fin	B obs.		"
22963	Bushing - Rudder and Elevator Hinge	A		UPF-7
31506	Rib - Bottom Front - Fin	A		YOC
31507	Rib - Bottom Rear - Fin	A		"
31508	Support - Fin Leading Edge	A		"
23088	Lower Brace Wire Assembly - Stab.			UPF-7
23090	Lower Brace Wire			"
23092	Washer - Stabilizer Wire (Service only)			"
23093	Washer - Stabilizer Wire (Service only)			"
23195	"U" Plate, Lower Front Fin Fitting			UPF-7
23196	Front plate, Lower Front Fin Fitting			"
23197	Rear Plate, Lower Front Fin Fitting			"
23198	Lower Front Fin Fitting			"
23206	Front Spar			"
23207	Fin Frame Assembly			"

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ORIGINAL DATE 5/28/41

MODEL UPF-7 (CAB)

REVISION DATES

GROUP E - EMPENNAGE

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
23230	Fitting - Inner - Rear Stabilizer Hinge			UPF-7
23231	Bearing Plate - Rear Stabilizer Hinge			"
23234	U Bolt - Rear Stabilizer Hinge			"

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MODEL UPP-7 (CAB)GROUP F - Landing GearPAGE 1-FORIGINAL DATE 7/5/40REVISION DATES 9/11/4010/8/4010/23/4011/1/401/7/411/31/41

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MODEL
8101	Tail Wheel Bronze Bushing	E, F		KNF
8116	Tail Wheel Fork Bearing Collar	A obs.	48666	"
8166	Tail Wheel Shock Strut Washer	B		"
8170	Tail Wheel Shock Strut Retainer Washer	B		"
11556	Tail Wheel Support Bracket	D, L		QCF
12472	L. G. Cylinder Bottom Lug			UBF
14132	L. G. Shock Strut Piston Lock Nut			KBA
14133	L. G. Shock Strut Piston Lock Wire			"
16533	Tail Wheel Support Bushing	E		S3HD
17831	L. G. Shock Strut Taper Bushing	A		"
20343	L. G. Axle			UKC
20749	Tail Wheel Shock Strut Assembly	A		UPP
21765	Tail Wheel Hydraulic Spring Washer	A		20C-8
21766	Tail Wheel Hydraulic Friction Plate Spring			"
21767	Tail Wheel Hydraulic Lower Friction Plate	A		"
21999	L. G. Installation	B, C		UPP-7
21990	L. G. Shock Strut Assembly	A		"
21998	L. G. Shock Strut Spring			"
22008	L. G. Shock Strut Spring Retainer			"
22009	L. G. Shock Strut Cylinder Assembly	A		"
22010	L. G. Shock Strut Piston Assembly	A		"
22011	L. G. Shock Strut Oil Gauge			"
22034	L. G. Center Brace Strut Assembly			"
22041	L. G. Rear Brace Strut Assembly	A		"

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP F - Landing Gear

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ORIGINAL DATE 7/5/41

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE OR M
22119	Tail Wheel Support Assembly	B		UPF-
22120	Tail Wheel Fork and Support Assembly	B,C		"
22122	Tail Wheel Installation	D		"
25393	L. G. Shock Strut Taper Bushing	A		JED
25394	L. G. Shock Strut Taper Bushing Plate			"
35019	L. G. Shock Strut Rear Lug	A		YQG-
35053	L. G. Rear Strut End Fitting			"
35495	L. G. Shock Strut Gland	B		"
35916	L. G. Shock Strut Aluminum Gasket	A		"
36052	Tail Wheel Shock Strut Upper Tube Assembly			"
36079	Tail Wheel Shock Strut Lower Tube Assembly	A, C		"
36556	L. G. Splined Strut Lower Bushing	A,C		ZGG-
36562	L. G. Shock Strut Piston Orifice	B		"
36563	L. G. Shock Strut Piston Lower End Fitting	C,F		"
36569	L. G. Axle and Splined Strut Assembly	I		"
36571	L. G. Shock Strut Piston Valve Lock Wire			"
36572	L. G. Strut Piston Valve	A		"
36574	L. G. Shock Strut Top Reinforcement	B		"
36579	L. G. Shock Strut Bushing Case	C,E		"
36581	L. G. Shock Strut Cylinder Side Reinf.	D		"
36582	L. G. Shock Strut Cylinder End Reinf.	B,D		"
36584	L. G. Shock Strut Lower Packing Ring	B		"
36585	L. G. Shock Strut Upper Packing Ring	B		"
36588	L. G. Shock Strut Bumper	A		"
36589	L. G. Full Bonded Coupling Joint	A,B		"

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MODEL UPT-7 (CAB)GROUP F - Landing GearPAGE 3-1ORIGINAL DATE 7/5/40REVISION DATES 9/11/4011/1/40

PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGIN USE ON M
36599	L. G. Rear Strut Eyebolt Washer	A,B		200-
36600	L. G. Rear Strut Eyebolt	A,D		"
36601	L. G. Rear Strut Bushing	B		"
36608	L. G. Center Strut End Reinf. Strap	A		"
36801	L. G. Shock Strut Spring Retainer	C		"
36802	L. G. Shock Strut Spring Retainer Assembly			"
36807	L. G. Shock Strut Cylinder End Plate	B,C		"
36840	Tail Wheel Upper Friction Plate	B		TQC-
36916	L. G. Shock Strut Shoulder Bushing			ZGC-
36937	L. G. Shock Strut Forged Socket	B		"
37356	L. G. Center Strut Attach. Bushing			"
37581	L. G. Rear Strut "U" Clip			"
37582	L. G. Rear Strut Reinf. Plate	A		"
37592	L. G. Shock Strut Rear Strut Lug	A		200-
38340	L. G. Shock Strut Splined Strut			270-
38382	L. G. Shock Strut Splined Strut Assembly	D		"
45142	L. G. Shock Strut Piston Upper Bushing	B		200-
45143	L. G. Splined Strut Retainer			"
45210	L. G. Shock Strut Splined Bearing			"
45220	L. G. Shock Strut Brace Strut Fitting			"
45356	L. G. Shock Strut Spring Retainer Washer			"
45357	L. G. Shock Strut Spring Retainer Washer			"
45358	Tail Wheel Hydraulic Support Bushing			"
45375	L. G. Splined Strut Socket Seat	A		"
45387	Tail Wheel Friction Disc			"
45388	Tail Wheel Fork Assembly	G-30	45395	200-
45388	Tail Wheel Fork Reinf. Patch			200-

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DRAWING LIST

ORIGINAL DATE 9/11/40REVISION DATES 12/2/401/31/41MODEL UPF-7 (CAB)GROUP F - Landing Gear

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
19292	Bushing - Tail Wheel Fork	B		UKC
22969	Bushing - Tail Wheel Fork			UPF-7
45295	Fork - Tail Wheel	C,D,F		ZGC-8
47863	Bushing - Tail Wheel Support	A		ARE
48666	collar - Tail Wheel Fork	B		ARE

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MODEL UPF-7 (CAB)GROUP G - CowlingPAGE 1-GORIGINAL DATE 7/5/40REVISION DATES 9/11/4011/8/4012/2/401/7/41

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
22147	Inner Cowl Spinning	A		UPF-7
22793	Inner Cowl Reinf. Bracket	B		
22857	Inner Cowl Installation			
19051	Retainer Spring	E		
22997	Winter Front Cowling Assembly and Inst.	A,F		
22998	Winter Front Inner Plate	B,C		
22999	Winter Front Shutter	A,C		
23000	Winter Front Shutter Guide Pulley			
23004	Winter Front Shutter Stud	A		
23005	Winter Front Guide Pulley Bushing			
23006	Winter Front Large Cowl Spinning	A,C,D		
23037	Winter Front Shutter Adjustment Flange			
23051	Winter Front Inner Plate Retainer	A		
23052	Winter Front Small Inner Spinning			
23058	Winter Front Inner Spinner Adapter	obs.	23053	
23053	Winter Front Inner Spinner Adapter	A		

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ORIGINAL DATE 10/16/41

MODEL UPT-7

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GROUP H - FURNISHINGS

PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGINAL USE ON MODEL
29769	Instrument Flying Hood Inst.	obs.	23649	CPF
29770	Instrument Flying Hood Frame	A obs.		"
29771	Instrument Flying Hood Spacer	obs.		"
23649	Installation - Blind Flying Hood - Rear			UPT-7
23650	Wood Spacer - Blind Flying Hood			"
20642	Spacer Bushing - Blind Flying Hood (Inner Bushing - Rudder Pedal)			"

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP I - Flying Controls

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
1041	Aileron Bellcrank Bushing	G,H		ATO
1132	Torque Tube Center Bearing Assembly	A		"
8460	Aileron Push Rod Clevis	I,J		ENF
9120	Rudder Pedal Spring	B		"
10570	Steel Clamp			WHD-
13390	1 5/16" Pulley Assembly	C		QDC
15779	Aileron Drag Link Assembly			"
17443	Stabilizer Bearing Grease Retaining Felt	A		S3HD
17444	Stabilizer Bearing Grease Retaining Flange	B		"
17445	Hex Nut for Stab. Adj. Pulley	A		"
18072	Rear Elevator Tube Rear Bushing	C		KBA
18074	Elevator Horn Assembly	A		"
18075	Elevator Horn Bushing	C,D		UMF
18360	Elevator-Torque-Tube-Assembly-	Dobs.	22158	"
18419	Aileron Strut Assembly	A,B		"
18475-1	Connecting Rod Fitting Assembly) See Dwg.			"
18475-2	Connecting Rod Fitting Bushing) #22874			"
18528	Rear Control Stick Socket	RC		"
18533	Control Stick Socket Casting			"
18543	Front Control Stick Socket	A		"
20607	Elevator Push Tube Rear Fitting			"
20608	Elevator Push Tube Front Fitting			CPF
20609	Aileron Push Tube Assembly	B,C,D		"
20610	Aileron Push Rod Threaded Bushing	A		"
20611	Aileron Push Rod Clevis	A		"
20642	Inside Bushing - Rudder Pedals			"

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MODEL UPF-7 (CAB)

GROUP I - Flying Controls

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REVISION DATES	7/17/40
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	8/26/40
	9/11/40
	9/20/40

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
20644	Front Rudder Pedal Cable Clip	A,B		CPT
20646	Insert - Rear Control Stick	B,C		"
20649	Elevator Cable - Long	A,D,F	23273	"
20752	Rear Control Stick	B,E,F		"
20753	Elevator Cable - Short	B,D,E	23273	"
21385	Rudder Pedal Brake Pad Assembly	B obs.		"
22028	Front Control Stick	obs.	22843	UPF-7
22029	Rear Elevator Tube Assembly	obs.	22850	"
22033	Insert - Front Control Stick	A,B		"
*22052	Hydraulic Brake System	G,O,T		UPF-7 (CA)
*22064	Flying Controls Inst.	H,I,J,K,L,S		UPF-7
22069	Tie Plate Brake Pedal	W,Y,C,H,J,K,N,S,U,X	obs. C111, D111	
22090	Rudder Cable - Rear	B obs	23275	UPF-7
22090	Rear Rudder Cable (alt.	C		
22092	Rudder Cable - Front	C,EH	23276	"
22092	Front Rudder Cable (alt.	J		
22135	Elevator Push Tube Assembly	obs.	22874	"
22158	Elevator Torque Tube Assembly	A,D		"
*22254	Auxl Rudder Cable	B,D	23013	UPF-7 (CA)
*22255				
*22646	Bearing - Rear Stab. Adj.	B		"
*22647	Flange - Stab. Adj. Brank Support	A		"
*22748	Front Rudder Pedal Assembly	A,B,C		"
*22749	Rear Rudder Pedal Assembly	D		"
		A,B		"
*22752	Facing Support - Rear Rudder Pedal	B		"
*22763	Facing Support - Front Rudder Pedal	B		"
*22764	Facing Support - Front Brake Pad	B		"

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MODEL UPF-7 (CAB)

GROUP I - Flying Controls

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PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MO
*22765	Facing Support - Rear Brake Pad	B		UPF-7(CA
*22766	Front Rudder Pedal Brake Pad Assembly	C		"
*22767	Rear Rudder Pedal Brake Pad Assembly	A		"
*22775	Master Brake Cylinder Plug	-		"
*22785	Idler Pulley	A,D		"
*22789	Bearing - Front Stab. Adj. Crank	B		"
*22795	Stabilizer Indicator Assembly	A,B		"
*22796	Stabilizer Indicator Front Plug			"
*22797	Stabilizer Indicator Rear Plug			"
*22798	Stabilizer Indicator Tube	C		"
*22799	Stabilizer Indicator Connecting Rod			"
*22811	Sprocket - Rear Stab. Adj. Crank	C,D		"
*22812	Sprocket - Rear Stab. Adj. Crank	C,D		"
*22813	Shaft - Rear Stab. Adj. Crank	A		"
*22814	Collar - Front and Rear Stab. Adj. Crank	B,C		"
*22815	Bushing---Front-and-Rear-Stab.-Adj.-Crank-	B obs.	22984 22985	"
*22816	Shaft - Front Stab. Adj. Crank	A		"
*22817	Sprocket---Front-Stab.-Adj.-Crank-	obs.	22812	"
*22822	Stabilizer Adj. Crank Assembly - Front and Rear	H,J		"
22850	Rear - Elevator Channel Fitting Assembly			"
22851	Rear - Elevator Control - Channel Fitting			"
22855	Reinf. Plate - Rear - Elevator Fitting			"
30179	Stabilizer-Adj.-Screw-Pulley-	A obs.	22651 22652	YOC
30182	Stabilizer Adj. Screw Assembly	A,D		"

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DRAWING LIST

MODEL UPF-7 (CAB)

GROUP I - Flying Controls

ORIGINAL DATE 7/5/40

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10/23/40 9/11/40

11/8/40 9/20/40

12/2/40 9/27/40

1/31/41

PART NO.	NAME	LAST REV'D	SUP'D BY	ORIGINAL USE ON MODEL
31304	Bearing Retainer - Stabilizer Adjustment	B		YOC
31312	Elevator Rear Push Rod	A, I		YOC
31317	Elevator Control Bellcrank	E, G		"
31318	Elevator Control Shaft Arm	F		"
31319	Elevator Control Shaft Bearing Spacer	obs.		"
31320	Elevator Control Shaft End Washer			"
31381	Elevator Control Shaft	obs.		"
31322	Elevator Control Shaft Assembly	C		"
31385	Elevator Horn	B		"
22843	Front Control Stick Assembly	A, B, D		"
22864	Handle - Front Control Stick			"
22874	Elevator Push tube ass'y (connecting control sticks)			"
31402	Outer Bushing - Elevator Control	E		YOC
23013	Cable - Auxiliary Rudder Mechanism	obs.		UPF-7
23014	Clamp - Auxiliary Rudder Mechanism			"
22994	Sprocket Hub - Rear Stabilizer Adj. Crank	A		"
22985	Sprocket Hub - Front Stabilizer Adj. Crank	A		"
22651	Nut - Stabilizer Adj. Screw	B		F-7 (CAB)
22652	11 Tooth Sprocket - Stab. Adj.	B		"
38746	Collar - Torque Tube	B		ZVN-8
23064	Bolt - Elevator Torque Tube			UPF-7 (C)
23065	Bolt - Aileron Bellcrank			"
226155	Clip - Front Rudder Pedal Cable	A		"
23192	Elevator Stop and Installation			"
23236	Stop - Adjustable - Aileron Control			"
23256	Bushing - Lower Aileron Bellcrank (Service only)			"
23274	Elevator Cable Stop - Test (light add-on)			"

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DRAWING LIST

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ORIGINAL DATE 7/29/41

REVISION DATES 10/1/41

MODEL UPF-7 (CAB)

GROUP I - FLYING CONTROLS

PART NO.	NAME	LAST REV'N	SUP'D BY	ORIGINAL USE ON MOD
23275	Rear Rudder Cable Assembly (Alt.)			UPF-7
23276	Front Rudder Cable Assembly (Alt.)			"
23307	Bushing - Elevator Push Tube			"
23308	Bushings - Aileron Torque Tube			"
23309	Bushings - Aileron Bellcrank			"