

## **Chilton Material Listing**

### Approximate Quantities & Main Applications

<u><b>Birch Ply Sheets</b></u>	No. off	
5mm	1	Trailing edge, elevators & rudder
3mm	1	Centre section spar web, instrument panel, footrests
2.5mm	1	Front floor, main joint gussets
2mm	2	Spar webs, former No.3, walkway on centre section
1.5mm	2	Spar webs, formers 1 & 11
1mm	-	All ply covering, most rib diaphragms
1mm	7	Fuselage
1mm	6	Wings
1mm	4	Centre section
1mm	3	Tailplane assembly

### **Main Spruce Sections**

1/4" x 1/4"	Wing & tailplane ribs
1/4" x 3/8"	Centre section ribs various
1/4" x 1/2"	Centre section ribs, fuselage frames
3/8" x 3/8"	Centre section ribs
1/2" x 3/4"	Fuselage structure
5/8" x 5/8"	Longerons
3/8" Sheet	Decking former profiles
1/4" sheet	Leading edge rib profiles & flap ribs

### **Hardwood**

Ash	Tank support blocks, tailskid mounting block
Ash	Spar attachment facings, tailskid spring mounting block
Ash	Main joints, spar to fuselage packing
Ash	Rudder pedal mounting blocks
Ash	Wing attachment fittings - alignment blocks
Ash	Wing to aileron hinge attachment blocks
Ash	Rear upper torso restraint harness attachment blocks

### **T45 Steel Tubing**

1 3/4" x 16 S.W.G.	Axle attachment tubes
1 5/8" x 16 S.W.G.	Axle
1 3/8" x 16 S.W.G.	Undercarriage attachment fittings
1 1/4" x 21 S.W.G.*	Main Undercarriage legs (use 20 S.W.G.)
1 3/16" x 20 S.W.G.*	Inner Undercarriage legs (use 1 1/4" x 14 S.W.G. turned down)
1 1/8" x 16 S.W.G.	Rudder pedal bearing tube
1 1/16" x 22 S.W.G.*	Flap bearing housing (use 1 1/8" x 16 S.W.G. turned down)
1" x 16 S.W.G.	Various to sleeve 7/8" tube
7/8" x 16 S.W.G.	Tailskid
7/8" x 20 S.W.G.	Control cross tube
7/8" x 22 S.W.G.	Control column, rudder pedal fulcrum tube, wing flap torque tubes, flap lever
5/8" x 22 S.W.G.	Undercarriage stay tubes, ruder pedals, flap actuating tube
3/8" x 16 S.W.G.	Aileron push rods & various
5/16" x 16 S.W.G.	Various, welding in as cross tubes for bolts

\* Sizes no longer available

### **Various Items**

3/16" Steel rod (no spec. available)	Undercarriage inner leg retaining rods
S514 Steel sheet	In 14, 16, 18 & 20 S.W.G. various fittings
Stainless steel	26 S.W.G. flap to torque tube retaining straps
Stainless steel	24 S.W.G. firewall
Tinned steel	26 S.W.G. petrol tank
L72 Dural plate	1/4" & 3/16" wing attachment plates (spec. now L163)
Aluminium sheet	24 S.W.G. undercarriage trousers
S80 or S154 bar	Wing attachment pins

**Chilton Material Listing - cont.**  
Approximate Quantities & Main Applications

**Various Items - cont.**

"Oilite" bearings	7/8" bore for flap torque tube bearings
Compressed red fibre sheet	1/8", 1/4" & 3/8" cable fairleads & wing attachment plate packing pieces
Tufnol fibre bar	1 1/4" x 7/8" bore control column cross tube & rudder pedal fulcrum tube spacers
Fabric	Spec. 7F8 for unsupported surfaces
Fabric	Madapolam for covering plywood
Fabric strap	1" Wide for petrol tank supports
Springs	4 off compression for undercarriage
Spring	1 off tension - tailskid suspension
1/4" soft aluminium tube	Pitot & static lines
Rubber grommets 1/4" bore	For above tubing

**Units referred to in the Chilton drawings:-**

S.W.G.= Standard Wire Gauge (British Spec.)		Wood Screws (British Spec.)		Bolt Size	Dia.
S.W.G.	Thickness	Gauge No.	Shank Dia.	3/8"	0.375"
14	0.080"	2	0.080"	5/16"	0.312"
16	0.064"	3	0.095"	1/4"	0.250"
18	0.048"	4	0.108"	2BA	0.185"
20	0.036"	6	0.135"	4BA	0.141"
21	0.032"	8	0.164"	6BA	0.110"
22	0.028"				
24	0.022"				
26	0.018"				

Control system - British A.G.S. parts spec. (as fitted in G-AFSV)

**Turnbuckles**

AGS 490 - 5/32" pin	
Fork end/cable eye	4 off - elevator control levers to elevator cables
Cable eye/cable eye	2 off - fuel tank support strap adjustment
Fork end/cable eye	1 off - end of rudder pedal balance cable
AGS 491 - 3/16" pin	
Fork end/cable eye	4 off - control column fittings to aileron cables
Fork end/cable eye	2 off - rudder pedals to rudder cables

**Shackles**

SP1-690A - 5/32" pin	
4 off - upper & lower rear elevator cables to 'Y' shaped connector to elevator control lever	
2 off - rear rudder cables to rudder control arm	
1 off - end of rudder pedal balance cable	
SP1-690B - 3/16" pin	
4 off - connects each length of safety harness to stranded cable to attachment fitting	
4 off - 2 off each wing connecting aileron cable to aileron differential mechanism	

**Control Cable Specs.**

10 Cwt. (0.110" dia x 1,120 lbs. breaking strain)		
2 off - rudder cables (now replaced with 3/32" as below)	approx. length	14 feet each
4 off - harness attachment cable to spar fitting	" "	8 inches each
5 Cwt. (0.080" dia. x 560 lbs. breaking strain)		
4 off - elevator cables	" "	12 feet each
4 off - aileron cables	" "	8 feet each
1 off - rudder pedal balance cable	" "	4 feet
1 off - tailskid limiting cable	" "	1 foot

All cables will be replaced on G-AFSV when required with U.S. spec. 3/32" (0.094" dia.) 7x19 strand galvanised, 1,000 lbs. breaking strain. The only proprietary items in the control circuit are the rod end bearings that connect the aileron push rods to the aileron differential mechanism.