

PITCAIRN PA-4, 3 POLB, 2-21

Engine Curtiss OX5 90 hp or OX6 102 hp
 Fuel 35 gals.
 Oil 3-3/4 gals.
 No. pass. 2
 Baggage —
 Standard weight 1880 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 1 to 7 eligible

PITCAIRN PA-4M, 3 POLB, 2-19S

Engine Warner Scareab 125 hp
 Fuel 31 gals.
 Oil 4 gals.
 No. pass. 2
 Baggage 13 lbs.
 Standard weight 1920 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 1 only eligible

PITCAIRN PA-5, 1 or 3 POLB, ATC 18

Engine Wright J-5 220 hp (See NOTE 3)
 Fuel 60 gals. (See NOTE 2)
 Oil 5 gals.
 No. pass. None or 2 (See NOTE 1)
 Baggage 600 lbs. as 1-place (See NOTE 1)
 Standard weight 2810 lbs.
 Spec. basis Approved Type Certificate No. 18
 Serial Nos. 1 to 30 eligible
 Class I equipment: Flares, Battery, Landing lights, Fire extinguisher; Starter (hand inertia).
 Class III equipment: Radio 46 lbs.
 NOTE 1. Eligible as 3-place airplane when passenger seats installed in place of mail compt. by manufacturer. The remaining payload may be carried as baggage if space is provided. Inspector should specify baggage capacity.
 NOTE 2. Serial Nos. 3, 4 and 5 eligible with the fuselage fuel tank of 60 gals. removed and one 35 gal. tank installed in center section and one 20 gal. tank installed in each lower wing. Total fuel 75 gals.
 NOTE 3. Serial 30 is also eligible with Wright R-760 250 hp engine.

PITCAIRN PA-6, 1 or 3 POLB, ATC 92

Engine Wright J-5 220 hp
 Fuel 62½, 71½ or 80 gals.
 Oil 8½ or 10½ gals.
 No. pass. None or 2
 Baggage 549 lbs. (1-place)
 209 lbs. (3-place)
 Standard weight 3050 lbs. (Serials 1, 2, 8 and up)
 2812 lbs. (Serials 3, 4, 5, 6, 7)
 Spec. basis Approved Type Certificate No. 92
 Serial Nos. 1 to 146, 153 and 159 eligible.
 Class I equipment: Battery; Landing lights; Engine ring cowl (JACA); 2 parachute flares.
 Class III equipment: Radio 46 lbs.
 NOTE 1. Eligible with either round or square type wings or tail surfaces.

PITCAIRN PA-7M (1 POLB) and PA-7S (3 POLB), ATC 196

Engine Wright R-760 250 hp
 Fuel 63 gals.
 Oil 8 gals.
 No. pass. None or 2
 Baggage 636 lbs. (Model PA-7M)
 196 lbs. (Model PA-7S)
 Standard weight 3050 lbs. (Model PA-7M)
 2960 lbs. (Model PA-7S)
 Spec. basis Approved Type Certificate No. 196
 Serial Nos. 46, 50 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.
 Class I equipment: Battery; Engine ring cowl; Hand starter; Adj. metal propeller.
 Class III equipment: 71½ gal. fuel and 10½ gal. oil capacities, net increase 4 lbs.; Wheel streamlines 38 lbs.
 NOTE 1. Eligible with either square or round tipped wings or tail surfaces and with or without engine mount lengthened three inches.
 NOTE 2. All model PA-6 airplanes eligible as model PA-7 when changed to conform

PITCAIRN PA-18, 2 PO-CLAg, ATC 478

Engine Kinner R-5 160 hp
 Fuel 30 gals.
 Oil 3-1/2 gals.
 No. pass. 1
 Baggage 10 lbs.
 Standard weight 1950 lbs.
 Spec. basis Approved Type Certificate No. 478
 Serial Nos. G-62 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.
 Class I equipment: Fixed metal propeller; Dual controls; Seat cushions 9 lbs.; Battery 10 lbs.; Heywood starter 32 lbs.; 10 lbs. ballast in tail.
 Class III equipment: Safety wheel installation 12 lbs.; Adj. metal propeller, 5 lbs. net increase; Coupe top 3 lbs. net increase.

PITCAIRN PA-19, 4 POLAg, ATC 509

Engine Wright R-975E-2 420 hp
 Fuel 90 gals.
 Oil 8 gals.
 No. pass. 3
 Baggage 80 lbs.
 Standard weight 4129 lbs. (See NOTE 1)
 Spec. basis Approved Type Certificate No. 509
 Serial Nos. H-84 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date. (See NOTE 2)
 Class I equipment: Battery 39 lbs.; Starter 30 lbs.; Generator 13 lbs.; Heater 5 lbs.; Propeller - adj. metal.
 Class III equipment: Landing lights 15 lbs.; Flares (three 1 minute) 11 lbs.; Extra door 17 lbs.; Extra walk-way 15 lbs.; Elevator tab control 12 lbs.; Larger oil cooler 10 lbs.; Increase in weight of upholstery 8 lbs.; "Y" type control column, no change in weight; Propeller - controllable metal (Hem. Std. hub 2D30, blades 6101-6, low pitch setting 16°), net increase 60 lbs.
 NOTE 1. Serial No. H-84 is same as production model except shock absorbers, fixed wing, pylon structure, ailerons, and rear section of fuselage. Maximum standard weight 4097 lbs.

PITCAIRN PA-20 (or PAA-1), 2 POLAg, ATC 433

Engine Kinner B-5 125 hp
 Fuel 27 gals.
 Oil 3-1/2 gals.
 No. pass. 1
 Baggage 44 lbs. (Includes 2 parachutes 20 lbs. each or seat cushions, used when parachutes are not worn, 12 lbs. each)
 Standard weight 1800 lbs.
 Spec. basis Approved Type Certificate No. 433
 Serial Nos. 19, 22 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.
 Class I equipment: Lead ballast 16 lbs.; Auxiliary fins 4 lbs.; Battery 10 lbs.; Starter 27 lbs.; Propeller - adj. metal.
 Class III equipment: Propeller - fixed metal, net increase 20 lbs.; Safety wheel installation 12 lbs.; Three 1-Min. flares 9 lbs.; 10x3 tail wheel, no change in weight as 6 lbs. ballast must be removed from rear of fuselage for this installation.
 NOTE 1. Serial Nos. 19, 32 to 41, incl., 52 to 56, incl., and 72 have manufacturer's name-plates with the model designation PAA-1. Certificates should be issued accordingly as manufacturer desires these autogyros to remain as PAA-1.

PITCAIRN PCA-2 and PA-21, 3 POLAg, ATC 410

(Models PCA-2 and PA-21 identical except engine installation)
 Engine Wright R-975 330 hp (Model PCA-2)
 Wright R-975E-2 420 hp (Model PA-21)
 Fuel 52 gals. (One 39 gal. tank under passenger seat and one 13 gal. tank rear of firewall)
 Oil 6-1/2 gals.
 No. pass. 2
 Baggage 36 lbs.
 Standard weight 3000 lbs.
 Spec. basis Approved Type Certificate No. 410

PITCAIRN PCA-2 and PA-21 (Continued)

Serial Nos. B-5 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.

Class I equipment: Starter (Heywood); Propeller - adj. metal; Low pressure tires; Cleveland A-5519 shock absorber struts.

Class III equipment: Flares 45 lbs.; Aux. 20 gal. fuel tank 14 lbs.; Bendix R-119-04d shock absorber struts, no change in weight; Replacement or repair of rotor blades to include metal trailing edge section and wooden stringer in leading edge running entire length of blade, net increase 16 lbs. (4 lbs. per blade).

PITCAIRN PA-24, 2 POLAg, ATC 507

Engine Kinner R-5 180 hp
 Fuel 27 gals. (One in fuselage)
 Oil 3-1/2 gals.
 No. pass. 1
 Baggage 13 lbs.
 Standard weight 1800 lbs.
 Spec. basis Approved Type Certificate No. 507
 Serial Nos. 57 to 61 eligible. (See NOTE 1)
 Class I equipment: Starter (Heywood) 32 lbs.; Ballast 16 lbs.; Auxiliary fins 4 lbs.; Safety wheel 12 lbs.; Propeller - adj. metal.
 NOTE 1. Serial Nos. 19, 32 to 41, incl., 52 to 56, incl., and 72 (formerly model PAA-1 or PA-20) eligible upon conversion in accordance with approved technical data.

PITCAIRN PCA-3, 3 POLAg, ATC 446

Engine P & W Wasp Jr. 300 hp
 Propeller Adj. metal (See NOTE 1)
 Fuel 52 gals.
 Oil 6 gals.
 No. pass. 2
 Baggage 15 lbs. (Pay load includes 3 parachutes 20 lbs. each)
 Standard weight 3065 lbs.
 Spec. basis Approved Type Certificate No. 446
 Serial Nos. E-43 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.

Class III equipment: Extra 20 gal. fuel tank 14 lbs., Bendix R-119-04d shock struts; Flares 45 lbs.

NOTE 1. Serial No. E-45 eligible with controllable metal propeller, 42 lbs. net increase incl. 12 lbs. of ballast.

NORTHWESTERN AERONAUTICAL CORPORATIONPORTERFIELD 35 AND 35-70, 2 PCLM, ATC 567

Engine Rearwin LeBlond 60 5D (Model 36)
Rearwin LeBlond 70 5DE or 5E
(Model 36-70)

Engine limits For all operations,
(Model 36) 1950 rpm. (65 hp)
(Model 35-70) 1950 rpm (70 hp)

Propeller limits Maximum permissible diameter 80 in.

Airspeed limits Glide or dive 160 mph True Ind.

Fuel capacity 17 gals. (One tank in fuselage)
(See NOTE 3) (-10)

Oil capacity 2½ gals. (-25)

No. pass. 1 (+1) or (+41)

Baggage 30 lbs. (+73)

Standard weight 1310 lbs. (See NOTE 1)
(+6.0) and (+15.7)

C.G. limits Approved Type Certificate No. 567

Spec. basis

Serial Nos. 132, 135 thru 138 and 140 and up mfrd.
prior to 1-25-41 eligible. Approval
expired as of that date. (See NOTE 1)

EQUIPMENT: (Datum is wing leading edge)

Class I.

101. 18x8-3 wheels with brakes
and 4-ply tires 41 lbs.
102. Tail wheel (4 in. dia. with solid
rubber tire or 5½ in. solid rub-
ber, castoring) or tail skid 3 lbs.
103. Propeller - wood 12 lbs.

Class II.

200. Miscellaneous items as noted in approved
weight and balance report.

Class III.

301. Eigin instrument board 8 lbs.
302. Frame for radio 1 lb.
303. Radio bonding 2 lbs.
304. 6x2.00 tail wheel assembly 4 lbs. (+89)
305. Landing gear fairing 2 lbs.
306. Miscellaneous instruments
307. 7.00-4 wheels (Serial Nos.
below 140) - no brakes
308. 18x8-3 wheels with or without brakes
309. 18 gal. fuel tank
310. Emergency door No change in weight
311. Wheel pants 14 lbs. (-3)
312. Engine ring cowl 8 lbs.
313. 6.00-6 wheels (Shinn 6C4HB)
with brakes and 4-ply tires 30 lbs.

NOTE 1. (a) Serial No. 101 eligible with standard weight
of 1235 lbs.

(b) Serial Nos. 102 thru 131, 133, 134 and 139
eligible with standard weight of 1235 lbs. (maximum
1270 lbs. provided mfrs. affidavit of conformity with
serial No. 128 is received.)

NOTE 2. Firewall must be at least .028 in. terne plate.
(Serial No. 102 eligible with aluminum firewall.)

NOTE 3. Serial No. 101 eligible with fuel capacity of
15½ gals.

NOTE 4. Landing gear: (a) 7.00-4 wheels on gear with
66 in. tread and 6 shock rings of 5/8 in. diameter;
(b) 18x8-3 or 6.00-6 wheels on gear with 69-5/16 in.
tread and 4 shock rings of 5/8 in. diameter and 4
rings 9/16 in. diameter. This type gear has center
line of wheel 5 in. fwd. of front attachment strut
fitting whereas old type gear had center line of wheel
in line with front attachment strut fitting.

NOTE 5. All airplanes of these models except serial No.
102 eligible for export as follows, subject to inspec-
tion for equipment specified in Chapter XII of Inspec-
tion Handbook: (5-3-38)

- (a) Canada - Landplane
Skiplane - not eligible.
- (b) All other countries.

PORTERFIELD 35V, 2 PCLM, ATC 606

Engine Velle M-5

Engine limits For all operations, 1900 rpm (65 hp)

Airspeed limits Level flight or climb 105 mph True Ind.
Glide or dive 180 mph True Ind.

Fuel capacity 18 gals. (One tank in fuselage)

Oil capacity 2½ gals.

No. pass. 1

Baggage 30 lbs. (Compt. aft of rear cockpit)

Standard weight 1310 lbs.

C.G. limits (+7.4) and (+16.2)

Spec. basis Approved Type Certificate No. 606

Serial Nos. 200 and up mfrd. prior to 5-5-41 eligible.
Approval expired as of that date.

EQUIPMENT: (Datum is wing leading edge) (* Means net
increase)

Class I.

101. 18x8-3 wheels (Goodyear), no brakes
102. Tail skid
103. Propeller - wood 20 lbs.

Class II.

200. Miscellaneous items as noted in approved weight
and balance report.

Class III.

301. Engine ring cowl 9 lbs.
302. Position lights (no battery) 2 lbs.
303. 18x8-3 wheels (Goodyear) with
brakes 6 lbs.*
304. 4 in. solid rubber tail wheel 1 lb.

NOTE 1. Eligible for export as follows, subject to inspec-
tion for equipment specified in Chapter XII of Inspection
Handbook: (5-18-36)

- (a) Canada - Landplane
Skiplane - not eligible.
- (b) All other countries.

PORTERFIELD 35W AND 75-C, 2 PCLM, TC 6111 - SPECIFICATIONS PERTINENT TO ALL MODELS:

No. pass. 1 (+1) or (+41) (See NOTE 3)

Standard weight 1326 lbs.

Spec. basis Type Certificate No. 611 (Aero. Bulletin
7A requirements)

EQUIPMENT: (Datum is wing leading edge) (* Means net
increase)

Class I.

- | | 35W | 75-C |
|--|---------|----------------|
| 101. Engine speed ring (See NOTE 2) | 9 lbs. | — |
| 102. Wheels | | |
| (a) 18x8-3 (Goodyear 31MRH) with brakes and tires 33 lbs. (-8) | | — |
| (b) 6.00-6 (Shinn 6C5HB) with brakes and 4-ply tires (Wheels must be placarded for these tires) | | 32 lbs. (-7) |
| 103. Tail skid | 3 lbs. | — |
| 104. Propeller - fixed pitch wood (with hub) | 20 lbs. | 15 lbs. (-55) |
| 106. Two exhaust manifolds and carburetor heater | — | 11 lbs. (-42) |
| 106. 6x2.00 steerable tail wheel with special spring | — | 10 lbs. (+176) |
| 107. Oil radiator (Continental) | — | 6 lbs. (-46) |

Class II.

200. Miscellaneous items as noted in approved weight and
balance report.
201. Combined exhaust collector and
speed ring (See NOTE 2) X —
202. Propeller, fixed or adj.
metal (See NOTE 2) 29 lbs. —
203. Wheel streamlines
- (a) For 18x8-3 wheels 14 lbs. (-7) —
- (b) For 6.00-6 wheels 12 lbs. (-7) —
204. 6.00-6 wheels (Shinn 6C5HB)
with brakes and 6.00-6
4-ply tires Net decrease 3 lbs. (-8) —
(Wheels must be placarded for these tires)
205. Battery installation in
engine compt. — 31 lbs. (-30)
206. Generator, wind-driven under
fuselage (Air Assoc. GE-20) — 7 lbs. (-8)

NORTHWESTERN AERONAUTICAL CORPORATION

PORTERFIELD 35W AND 75-C (Continued)

| Class III. | 35W | 75-C |
|---|---------------|--------------|
| 301. Emergency exit | No wt. change | 2 lbs. (+19) |
| 302. Outside baggage door | No wt. change | — |
| 303. Misc. extra instruments | — | 7 lbs. (+1) |
| 304. Tail wheels | | |
| (a) 4 in. dia. solid rubber | No wt. change | — |
| (b) 5½ in. dia. solid rubber, castoring | No wt. change | — |
| (c) 6x2.00 wheel assy., castoring | 1 lb. (+189) | — |
| 305. Carpet | — | 2 lbs. (+7) |
| 306. Engine primer | — | 1 lb. (-8) |
| 307. Cabin heater | — | 2 lbs. (-39) |
| 308. Wheel streamlines | — | 10 lbs. (-5) |
| 309. Landing light (left wing) | — | 4 lbs. (+17) |
| 310. Dash light | — | 1 lb. (+1) |
| 311. Parking brake | — | 1 lb. (0) |

NOTE A. Each aircraft manufactured after April 20, 1942, must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

NOTE 1. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

- (a) Canada- Landplane
 Skiplane - not eligible
- (b) All other countries except New Zealand.

NOTE 2. Model 35W eligible without engine speed ring provided C.G. check is made. Item 202 cannot be installed with engine speed ring (item 101 or part of item 201).

NOTE 3. On serials 650, 1661 and up, Model 75-C, the following placard is required unless otherwise substantiated by weight and balance report: "Solo from front seat only."

II - MODEL 35:

| | |
|-----------------|--|
| Engine | Warner Scarab Jr. |
| Engine limits | For all operations, 2025 rpm (90 hp) |
| Propeller | Maximum permissible diameter 80 in. |
| Airspeed limits | Level flight or climb 105 mph True Ind. Glide or dive 160 mph True Ind. |
| Fuel capacity | 18 gals. (One tank in fuselage)(-10) |
| Oil capacity | 3 gals. (-23) |
| Baggage | 30 lbs. (Aft of rear seat)(+73) |
| C.G. limits | (+6.3)(10.6% MAC) and (+13.9)(24.7% MAC) |
| MAC | 53.9 in. L.E. MAC (+0.6) |
| Serial Nos. | 301 and up eligible (See NOTE A) |

III - MODEL 75-C:

| | |
|-----------------|--|
| Engine | Continental A-75-8 |
| Engine limits | For all operations, 2600 rpm (75 hp) |
| Propeller | Static rpm at maximum permissible throttle setting - not more than 2350 not less than 2350 Diameter - not more than 83 in. not less than 68 in. |
| Airspeed limits | Level flight or climb 105 mph True Ind. Glide or dive 160 mph True Ind. |
| Fuel capacity | 18 gals. (-15) |
| Oil capacity | 1 gal. (-37) |
| Baggage | 40 lbs. (+73) |
| C.G. limits | (+8.1)(14.0% MAC) and (+16.8)(30.1% MAC) |
| MAC | 53.9 in. L.E. MAC (+0.6) |
| Leveling means | Use lower side of center section cross tube at rear spar and special 1/4 in. tube at left front bulkhead |
| Serial Nos. | 660, 1661 and up eligible (See NOTE A) |

PORTERFIELD CP-40 AND CP-40A, 2 PCLM, 2-530

I - SPECIFICATIONS PERTINENT TO ALL MODELS:

| | |
|-----------------|--|
| Propeller | Maximum permissible diameter 80 in. |
| Airspeed limits | Level flight or climb 83 mph True Ind. Glide or dive 112 mph True Ind. |
| Fuel capacity | 9 gals. (-10) |
| Oil capacity | 1 gal. (-35) |
| No. pass. | 1 (+8) or (+37) |
| Baggage | 10 lbs. (+63) |
| Standard weight | 1040 lbs. |
| C.G. limits | (+13.5) and (+21.1) |
| Spec. basis | Aero. Bulletin 7A, Section 3 |
| Serial Nos. | 250 and up mfrd. prior to 7-1-40 eligible. Approval expired as of that date. |

EQUIPMENT: (Datum is wing leading edge)(* Means net increase)

Class I.

| | |
|---|---------------|
| 101. 6.00-6 wheels (Shinn 6C2) with 2-ply tires | 21 lbs. (+3) |
| 102. Tail skid | |
| 103. Cabin enclosure | 20 lbs. (+28) |
| 104. Propeller - wood | 9 lbs. |

Class II.

200. Miscellaneous items as noted in approved weight and balance report.

Class III.

| | |
|---|--------------|
| 301. 6.00-6 wheels (Shinn 6C2B) with brakes and 2-ply tires | 6 lbs. (+3) |
| 302. 16x7-3 wheels (Goodyear 3LMBM) and tires | 2 lbs. (+3) |
| 303. 16x7-3 wheels (Goodyear 3LMBM) and tires with brakes | 13 lbs. (+5) |
| 304. Carburetor air heater (Dwg. B-804) | 2 lbs. (-36) |
| 305. Emergency exit (Large window on left side) | 2 lbs. (+28) |
| 306. Navigation lights | 2 lbs. |
| 307. Miscellaneous extra instruments | 4 lbs. |

NOTE 1. Following placard is required, "When flying solo, pilot must fly from front seat," unless an actual C.G. check is made substantiating the rear seat position.

NOTE 2. Eligible for export as follows, subject to inspection for equipment specified in Chapter XIII of Inspection Handbook: (10-12-38)

- (a) Canada - Landplane provided item 305 is installed and the following engine limits use for model CP-40:
 For all operations, 2500 rpm (59 hp)
 Skiplane - not eligible.

- (b) All other countries except Australia and Great Britain.

II - MODEL CP-40:

| | |
|---------------|--------------------------------------|
| Engine | Continental A-40-4 |
| Engine limits | For all operations, 2575 rpm (40 hp) |

III - MODEL CP-40A:

| | |
|---------------|--------------------------------------|
| Engine | Continental A-40-5 |
| Engine limits | For all operations, 2575 rpm (40 hp) |

NORTHWESTERN AERONAUTICAL CORPORATION

PORTERFIELD CP-50, 2 PCLM, TC 690

Engine Continental A-50-4 (See items 201 and 306) (See also NOTE 4)
 Engine limits For all operations, 1900 rpm (50 hp)
 Propeller Maximum permissible diameter 86 in.
 Airspeed limits Level flight or climb 91 mph True Ind.
 Glide or dive 123 mph True Ind.
 Fuel capacity 10 gals. (-15)
 Oil capacity 1 gal. (in engine) (-30)
 No. pass. 1 (+9) or (+35) (See NOTE 2)
 Baggage 30 lbs. (+52) (See NOTE 2)
 Standard weight 1108 lbs.
 C.G. limits (+11.7) and (+18.7)
 Spec. basis Type Certificate No. 690
 Serial Nos. 550 and up eligible (See NOTE A)
 EQUIPMENT: (Datum is wing leading edge) (* Means net increase)

Class I.

101. Propeller - wood (fixed or adj. pitch) 15 lbs. (-47)
 102. 6.00-6 wheels (Shinn 6C2 and 6C4) with 2-ply tires 23 lbs. (+3)
 103. Carburetor heater 2 lbs. (-38)
 104. Tail skid spring and shoe 5 lbs. (+195)
 105. Engine cowl
 106. Firewall (Ternplate) 10 lbs. (-20)

Class II.

200. Miscellaneous items as noted in approved weight and balance report.
 201. Dual ignition engine
 (a) Continental A-50-5 10 lbs.* (-25)
 (b) Continental A-50-8 7 lbs.* (-25)
 202. Wheel streamlines 9 lbs. (+6)
 203. Tail wheel (+195)
 (a) 6x2.00 full swivel with special spring 3 lbs.*
 (b) 3-3/8 solid rubber 2 lbs.*
 (c) 6x2.00 steerable with special spring 5 lbs.*
 204. Brakes
 (a) Shinn 6C2HB 7 lbs.* (+3)
 (b) Shinn 6C4HB 7 lbs.* (+3)
 205. Special upholstery 2 lbs.* (+40)
 206. Battery installation in engine compt. (Exide 3-AC-7 or 4-AC-7) 13 lbs. (-27)
 207. Cabin heater 3 lbs. (-28)
 208. Firewall (stainless steel)
 Net decrease 5 lbs. (-20)
 209. Stainless metal stripping 3 lbs. (+45)
 Class III.
 301. Miscellaneous instruments Max. 6 lbs. (-4)
 302. Carpet 2 lbs. (+9)
 303. Emergency exit 2 lbs. (+21)
 304. Skylight Neglect wt. increase
 305. Revised engine mount (for rubber bushed engines) Neglect wt. increase
 306. Continental A-50-7 engine
 Net decrease 3 lbs. (-25)
 307. Engine primer 1 lb. (-10)
 308. Skis Use actual wt. change
 (a) Air Transport 1460-580
 (b) Federal SC-1

NOTE A. Each aircraft manufactured after April 20, 1942, must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

5-20700

PORTERFIELD CP-50 (Continued)

NOTE 1. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

(a) Canada - Landplane

Skiplane - not eligible. However, structure complies with Canadian requirements for ski installation with a maximum ski height of 8 1/2 in., and a maximum overhang of 1-15/16 in. to outer face of brake plate.

(b) All other countries except Great Britain, Australia and New Zealand.

NOTE 2. For airplanes serial Nos. 550 to 559 inclusive, and 561 to 564 inclusive: passenger is at (+10.5) or (+39); baggage (+66). For above noted serial Nos. and also numbers 585 and up, following placard required unless otherwise substantiated by weight and balance report: "Solo from front seat only."

NOTE 3. The top fuselage cross tubes on the left-hand side of the airplane just aft of the rear seat and just forward of the instrument panel may be used for leveling means.

NOTE 4. No aircraft of this model shall be eligible for original certification with single ignition engine after Aug. 1, 1941.

NORTHWESTERN AERONAUTICAL CORPORATION

PORTERFIELD CP-55, CP-65, LP-65, FP-65, CS-65; TC 720

I - SPECIFICATIONS PERTINENT TO ALL MODELS:

| | | |
|-----------------|--|--|
| Airspeed limits | | Level flight or climb 102 mph True Ind. |
| Landplane | | Glide or dive 138 mph True Ind. |
| Seaplane | | Level flight or climb 97 mph True Ind. |
| | | Glide or dive 135 mph True Ind. |
| Fuel capacity | | 13½ gals. (-16) |
| No. pass. | | 1 (+8) and (+36) |
| C.G. limits | | |
| Landplane | | (+10.5)(17.4% MAC) and (+19.9)(33.3% MAC) |
| Seaplane | | (+11.0)(18.2% MAC) and (+18.7)(31.3% MAC) |
| MAC | | 59.04 in. L.E. MAC (+0.24) |
| Leveling means | | Top fuselage cross tubes on left hand side of airplane just aft of rear seat and just fwd. of instrument panel |
| Spec. basis | | Type Certificate No. 720 |
| Serial Nos. | | |
| Landplane | | 651 and up eligible (See NOTE A) |
| Seaplane | | 918 and up eligible (See NOTE A) |

EQUIPMENT: (Datum is wing leading edge)(+ Means net increase) (See NOTE 3)

Class I.

A. Landplane

| | |
|---|----------------|
| 101. Propeller - wood (fixed or adj. pitch) with hub | |
| FP Series | 11 lbs. (-51) |
| LP Series | 12 lbs. (-50) |
| CP Series | 16 lbs. (-49) |
| 102. Engine cowling | |
| FP and LP Series | 10 lbs. (-36) |
| CP Series | 9 lbs. (-40) |
| 103. Two exhaust manifolds | |
| FP and LP Series | 4 lbs. (-36) |
| CP Series | 5 lbs. (-37) |
| 104. Carburetor heater | |
| FP and LP Series | 3 lbs. (-35) |
| CP Series | 3 lbs. (-40) |
| 106. Firewall (Template) | 10 lbs. (-22) |
| 106. 6.00-6 wheels | |
| (a) Shinn 6C2 or 6C4 (Type I gear) | 7 lbs. (+3) |
| (b) Shinn 6C5 (Type II gear) | 7 lbs. (-1) |
| 107. 2-ply tires and tubes | |
| (a) Type I gear | 16 lbs. (+3) |
| (b) Type II gear | 16 lbs. (-1) |
| 108. Tail skid spring and shoe | 5 lbs. (+193) |
| B. Seaplane (Model CS-65); Items 101, 102, 103, 104, 105 for CP-65 Series PLUS | |
| 151. Edo model 60-1320 floats and struts | 172 lbs. (+16) |
| 152. Auxiliary seaplane fin (Dwg. 1510) | 3 lbs. (+169) |
| 153. Water rudder control system | 3 lbs. (+55) |
| 154. Structural changes noted in Change D, Dwg. A-658; Change A, Dwg. 1201; Note 7, Dwg. 1200; Change J, Dwg. 1506; and Dwg. 1712 | |

Class II.

| | |
|--|---------------|
| 200. Miscellaneous items as noted in approved weight and balance report. | |
| 201. Engines (-27) | |
| (a) Model CP-55 | |
| (1) Continental A-50-7 Net decr. 10 lbs. | |
| (b) Models CP-65 and CS-65 | |
| (1) Continental A-65-7 Net decr. 10 lbs. | |
| (2) Continental A-65-9 | 3 lbs.* |
| (c) Model LP-65 | |
| (1) Lycoming O-146-B1 Net decr. 11 lbs. | |
| (d) Model FP-65 | |
| (1) Franklin 4AC-176-B1 Net decr. 7 lbs. | |
| (2) Franklin 4AC-176-B3 Neglect wt. change | |
| 202. Firewall (Stainless steel) Net decr. 5 lbs. (-22) | |
| 203. Tail wheel | |
| (a) 6x2.00 full swivel with special spring | 4 lbs.*(+195) |
| (b) 6x2.00 steerable with special spring | 5 lbs.*(+196) |
| (c) 3-3/8 solid rubber | 2 lbs.*(+195) |

PORTERFIELD CP-55, ETC. (Continued)

| | |
|---|--------------------------|
| 204. Battery installation in engine compartment. (Reading 324L or 333L) | 16 lbs. (-29) |
| 205. Stainless metal striping | 3 lbs. (+45) |
| 206. Rear instrument case with instruments | 9 lbs. (+22) |
| 207. Cabin heater | 1 lb. (-28) |
| 208. Miscellaneous instruments | 7 lbs. (-4) |
| 209. 4-ply tires and tubes | |
| (a) Type I gear | 2 lbs.* (+3) |
| (b) Type II gear | 2 lbs.* (-1) |
| 210. Engine primer | 1 lb. (-11) |
| 211. Wheel streamlines | |
| (a) Type I gear | 10 lbs. (+6) |
| (b) Type II gear | 10 lbs. (+2) |
| 212. Carpet | 2 lbs. (+9) |
| 213. Skylight | Neglect wt. increase |
| 214. Emergency exit | 2 lbs. (+21) |
| 215. Shielding | 3 lbs. (-15) |
| 216. Bonding | 2 lbs. (+60) |
| 217. Parking brake | 1 lb. (0) |
| 218. 6.00-6 wheels with brakes | |
| (a) Shinn 6C2HB or 6C4HB (Type I gear) | 7 lbs.*(+3) |
| (b) Shinn 6C5HB (Type II gear) | 7 lbs.*(-1) |
| 219. Landing light (L.E.) one or two | 2 lbs. ea. (+5) |
| 220. Cowl flaps | 2 lbs. (-23) |
| 221. Skis | Use actual weight change |
| (a) Federal SC-1 | |
| (b) Richards 1A | |
| (c) Escanaba EAS-100 | |

Class III.

None. (All items formerly included under Class III on this specification now included under Class II.)

NOTE A. Each aircraft manufactured after April 20, 1942, must, prior to original certification, satisfactorily pass:

(a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.

(b) A final inspection of the completed aircraft.

(c) Check of flight characteristics.

NOTE 1. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

(a) Canada - Landplane

Skiplane - not eligible. However, structure complies with Canadian requirements for ski installation with a maximum ski height of 8½ in., and a maximum overhang of 1-15/16 in. to outer face of brake plate.

Seaplane - maximum standard weight 1320 lbs.

(b) All other countries except Great Britain, Australia and New Zealand.

NOTE 2. Deleted - March 10, 1943.

NOTE 3. Weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be submitted for each aircraft with original inspector's report and each subsequent report covering changes in equipment.

NOTE 4. No aircraft of these models shall be eligible for original certification with single ignition engine after August 1, 1941.

II - MODEL PORTERFIELD CP-55 2 PCLM:

| | |
|-----------------|---|
| Engine | Continental A-50-8 (See also item 201a) |
| Engine limits | For all operations, 1900 rpm (60 hp) |
| Propeller | Static rpm at maximum permissible throttle setting - not more than 1825 not less than 1720 |
| | Diameter - not more than 85½ in. not less than 70 in. |
| Oil capacity | 1 gal. (-31) |
| Baggage | 40 lbs. (+52) |
| Standard weight | 1160 lbs. |

NORTHWESTERN AERONAUTICAL CORPORATION

PORTERFIELD CP-66, ETC. (Continued)

III - PORTERFIELD CP-66 2 PCLM:

(Same as model CP-66 except engine installation)

Engine Continental A-66-8 (See also item 201b)
Engine limits For all operations, 2300 rpm (66 hp)
Propeller Static rpm at maximum permissible
throttle setting - not more than 2115
not less than 1910
Diameter - not more than 85 in.
not less than 68 in.

Oil capacity 1 gal. (-31)
Baggage 40 lbs. (+52)
Standard weight 1200 lbs.

IV - PORTERFIELD LP-66 2 PCLM:

(Same as model CP-66 except engine installation. Item 203 (a) or (b) required unless substantiated by weight and balance report)

Engine Lycoming O-145-B2 (See also item 201c)
Engine limits For all operations, 2550 rpm (66 hp)
Propeller Static rpm at maximum permissible
throttle setting - not more than 2375
not less than 2275
Diameter - not more than 87.6 in.
not less than 67 in.

Oil capacity 1 gal. (-37)
Baggage 40 lbs. (+52)
Standard weight 1200 lbs.

V - PORTERFIELD FP-66 2 PCLM:

Engine Franklin 4AC-176-B2 (See also item 201d)
Engine limits For all operations, 2200 rpm (66 hp)
Propeller Static rpm at maximum permissible
throttle setting - not more than 2140
not less than 2125
Diameter - not more than 72 in.
not less than 69 in.

Oil capacity 5 qts. (-37)
Baggage Compt. must be placarded for capacity
as determined in the pertinent weight
and balance report. 40 lbs. maximum
(+52)
Standard weight 1200 lbs.

VI - MODEL PORTERFIELD CS-66 2 PCSM:

Engine Continental A-66-8 (See also item 201b)
Engine limits For all operations, 2300 rpm (66 hp)
Propeller Static rpm at maximum permissible
throttle setting - not more than 1925
not less than 1800
Diameter - not more than 76 in.
not less than 73-3/4 in.

Oil capacity 1 gal. (-31)
Baggage 40 lbs. (+52)
Standard weight 1326 lbs.

NOTE: Following placard required unless substantiated by weight and balance report: "Solo from front seat only."

WILEY POST A, 2 POLB, ATC 561

| | |
|-----------------|---|
| Engine | Stearns A-11000 40 hp |
| Fuel | 7 gals. (One in fuselage) |
| Oil | 1-1/4 gals. |
| No. pass. | 1 |
| Baggage | None |
| Standard weight | 998 lbs. |
| Spec. basis | Approved Type Certificate No. 561 |
| Serial Nos. | 2 and up mtd. prior to 9-30-39 eligible. Approval expired as of that date. |

Class I equipment: 16x7-3 tires; Tail skid; Propeller - wood.



COMMONWEALTH AIRCRAFT, INCORPORATEDREARWIN 2000-C, 3 POLE, ATC 232

Engine Challenger R-600 185 hp (See NOTE 1)
 Fuel 55 gals.
 Oil 4 gals.
 No. pass. 2
 Baggage 15 lbs.
 Standard weight 2380 lbs. (See NOTE 1)
 Spec. basis Approved Type Certificate No. 232
 Serial Nos. 101 and up mfrd. prior to 11-5-36 eligible. Approval expired as of that date.

Class III equipment; 7.50-10 tires; Battery - under front seat (Reading 3BRL-9) 19 lbs.

NOTE 1. Eligible with Challenger R-600 engine rated 170 hp at 1800 rpm with maximum standard weight 2359 lbs.

REARWIN 2000-CO, 3 POLE, ATC 314

Engine Continental A-70 166 hp
 Fuel 55 gals.
 Oil 5½ gals.
 No. pass. 2
 Baggage 30 lbs.
 Standard weight 2359 lbs.
 Spec. basis Approved Type Certificate No. 314
 Serial Nos. 104 and up mfrd. prior to 11-5-36 eligible. Approval expired as of that date.

REARWIN JUNIOR 3000, 2 PO-CLM, ATC 434

Engine Szekely SR-3-45 45 hp
 Fuel 12 gals.
 Oil 1½ gals.
 No. pass. 1
 Baggage 15 lbs.
 Standard weight 1040 lbs.
 Spec. basis Approved Type Certificate No. 434
 Serial Nos. 203 and up mfrd. prior to 11-5-36 eligible. Approval expired as of that date. (See NOTE 1)

Class I equipment; Turtle deck fairing; Revised fuel tank mounting; Windshield on rear cockpit; Propeller - wood.

Class III equipment; Pyralin winter enclosure 12 lbs.
 NOTE 1. Serial Nos. 201 and 202 eligible when changed to conform. Serial Nos. below 216 must have diagonals in bay immediately behind rear wing spar of fuselage upper truss reinforced.

REARWIN JUNIOR 5100, 2 PO-CLM, ATC 481

Engine Szekely SR-3-55 50 hp
 Propeller Wood
 Fuel 12 gals.
 Oil 1½ gals.
 No. pass. 1
 Baggage 15 lbs.
 Standard weight 1071 lbs.
 Spec. basis Approved Type Certificate No. 481
 Serial Nos. 219 and up mfrd. prior to 11-5-36 eligible. Approval expired as of that date.
 Class III equipment; Winter enclosure 28 lbs.

5-20700

REARWIN JUNIOR 4000, 2 PO-CLM, ATC 469

Engine Lenape Aeromarine AR-3-160 50 hp
 Fuel 12 gals.
 Oil 1½ gals.
 No. pass. 1
 Baggage 10 lbs. (See NOTE 1)
 Standard weight 1038 lbs.
 Spec. basis Approved Type Certificate No. 469
 Serial Nos. 202A and up mfrd. prior to 11-5-36 eligible. Approval expired as of that date.

Class I equipment; Rear windshield 3½ lbs.; Propeller - wood; 7.00-4 wheels.

NOTE 1. (a) Serial Nos. 202A to 218, incl., also eligible with winter enclosure 12 lbs. with standard weight of 1040 lbs. and no baggage.

(b) Serial Nos. 219 and up also eligible with 12 lb. or 28 lb. winter enclosure. Maximum standard weight 1066 lbs.

REARWIN 6000, 2 PCLM, ATC 653

Engine Cirrus Hi-Drive Mark III
 Placard limits Maximum, except take-off
 -- in. Hg., 2100 rpm (95 hp)
 Take-off (one minute)
 -- in. Hg., 2100 rpm (95 hp)
 Placard speeds Level flight or climb 144 mph True Ind.
 Glide or dive 173 mph True Ind.
 Fuel 34 gals. (Two 17 gals. tanks in wing)
 (+22)
 Oil 2 gals. (-14)
 No. pass. 1 (Rear seat +43)
 Baggage 50 lbs. (40 lbs. under rear seat)(+48)
 (10 lbs. aft rear seat)(+72)
 Standard weight 1700 lbs.
 C.G. limits (+10.6) and (+17.2)
 Spec. basis Approved Type Certificate No. 653
 Serial Nos. 302 and up mfrd. prior to 2-3-43 eligible. approval expired as of that date.
 Equipment: (Datum is wing leading edge) (* Means net increase)

Class I.
 101. 7.00-5 wheels (Hayes 701) (-6)
 102. 8 in. streamline tail wheel
 (Goodyear 80-A) (+189)
 103. Propeller - wood
 including hub 22 lbs. (-60)

Class II.
 200. Miscellaneous items as noted in approved weight and balance report.
 201. Wheel pants (Hill) 12 lbs. (-5)
 202. Extra instruments 5 lbs. (-4)
 203. Battery and box (Exide 3TS-13-1) 23 lbs. (-18)
 (Installed at firewall)
 204. Starter (Eclipse V-150) 22 lbs. (-22)
 205. Propeller - adj. metal (Ham. Std., hub 7020, blades 25V2) 11 lbs. (+60)
 206. Brake controls - rear seat 3 lbs. (+16)

NOTE 1. Rudder travel must be limited to 17° either direction from the neutral position.

NOTE 2. Eligible for export to all countries except Great Britain, Canada and Australia. (9-28-37)

COMMONWEALTH AIRCRAFT, INCORPORATED

REARWIN 6000M, 2 PCLM, TC 661

Engine Menasco C-4
Placard limits Maximum, except take-off
-- in. Hg., 2175 rpm (125 hp)
Take-off (one minute)
-- in. Hg., 2175 rpm (125 hp)
Propeller Maximum permissible diameter 94 in.
Placard speeds Level flight or climb 141 mph True Ind.
Glide or dive 170 mph True Ind.
Fuel capacity 34 gals. (Two 17 gal. tanks in wing)(+19)
Oil capacity 3 gals. (-13) (See item 301)
No. pass. 1 (Rear seat +43)(Crew at +13)
(See NOTE 3)
Baggage 50 lbs. (30 lbs. under rear seat)(+48)
(20 lbs. aft rear seat)(+72)
Standard weight 1700 lbs.
C.G. limits (+10.5) and (+17.2)
Spec. basis Type Certificate No. 661 (Aero. Bulletin 7A requirements)
Serial Nos. 303 and up eligible (See NOTE A and NOTE 1)

EQUIPMENT: (Datum is wing leading edge) (See NOTE 5)
(* Means net increase)

Class I.

- 101. 18x8-3 wheels (Goodyear 3LMBM) with brakes and H.D. tires (Wheels must be placarded for these tires)
- 102. 8 in. streamline tail wheel (Goodyear 80-A) (+189)
- 103. Propeller - wood (fixed pitch) 23 lbs. (-60)

Class II.

- 200. Miscellaneous items as noted in approved weight and balance report.
- 201. Landing lights 10 lbs. (+12)
- 202. Instrument lights 1 lb. (-4)
- 203. Starter (Eclipse Type 80) 22 lbs. (-17)
- 204. (a) Battery and box (Exide 3-TS-13-1 or Gould A-12) 23 lbs. (-32)
- (b) Battery and box (Exide 6-AC-17-1) 22 lbs. (-32)
- 205. 6.00-6 wheels (Shinn 6C5HB) with brakes and 4-ply tires (Wheels must be placarded for these tires) 14 lbs.*(-5)
- 206. Extra instruments 5 lbs. (-4)
- 207. Wheel pants (Hill) 12 lbs. (-6)
- 208. Generator (Type 100W Elec. Develop. Co.) 16 lbs. (-17)
- 209. Fixed metal propeller (Curtiss Reed) 24 lbs.*(-60)
- 210. Carburetor air heater 6 lbs. (-38)
- 211. Steerable tail wheel mechanism 1 lb.* (+172)
- 212. Skiplane landing gear (Dwg. 64-004)

Class III.

- 301. 2-3/4 gal. oil tank (serial Nos. 303 and 304 only) Neglect weight change

NOTE A. Each aircraft manufactured after Jan. 7, 1945, must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

NOTE 1. Airplane serial No. 304 is limited to 1668 lbs. standard weight. If model 6000M landing gear is installed, standard weight may be increased to 1700 lbs.

NOTE 2. Rudder travel must be limited to 17° in either direction from neutral position. Elevator travel must be limited to not more than 19° in the up position, with the stabilizer parallel to the thrust line.

NOTE 3. Placard airplane to be flown solo from front seat only.

REARWIN 6000M (Continued)

NOTE 4. Eligible for export to all countries except Great Britain, Canada, Australia and New Zealand.

NOTE 5. Actual weight and balance report investigating the most forward C.G. condition with 170 lb. pilot and the most rearward C.G. condition with 120 lb. pilot and 220 lb. passenger must be submitted (through Mid-West Branch Office) with inspector's original report and all subsequent reports covering changes in equipment.

COMMONWEALTH AIRCRAFT, INCORPORATED

REARWIN 7000 & DELUXE 7000, 2 PCLM, TC 574

| | |
|-----------------|---|
| Engine | Rearwin LeBlond 5DE or 5E |
| Placard limits | Maximum, except take-off -- in. Hg., 1950 rpm (70 hp) Take-off (one minute) -- in. Hg., 1950 rpm (70 hp) |
| Placard speeds | Level flight or climb 105 mph True Ind. Glide or dive 142 mph True Ind. |
| Fuel capacity | 24 gals. (Two tanks - one in each wing at 12 gals.)(+23) |
| Oil capacity | 2 gals. (-26) |
| No. pass. | 1 (Front +8, or rear +40) |
| Baggage | 20 lbs. (+73) (See NOTES 1, 4 and 7) |
| Standard weight | 1460 lbs. (See NOTE 2) |
| C.G. limits | (+7.85) and (+18.4) |
| Spec. basis | Type Certificate No. 574 (Aero. Bulletin 7A requirements) |
| Serial Nos. | 414 and up eligible (See NOTE A and NOTE 1) |

EQUIPMENT: (Datum is wing leading edge) (See NOTE 6)
(* Means net increase)

Class I.

| | |
|--|---------------|
| 101. Exhaust collector ring | 7 lbs. (-40) |
| 102. 7.00-4 wheels (Warner) and 4-ply tires | 21 lbs. (-6) |
| 103. Tail skid | 5 lbs. (-186) |
| 104. Propeller - wood | 16 lbs. (-63) |

Class II.

| | |
|---|----------------|
| 200. Miscellaneous items as noted in approved weight and balance report. | |
| 201. Engine ring cowl | 10 lbs. (-46) |
| 202. Battery and box | (-24) |
| (a) Reading 6ARL-9 or 6-ARL-11 | 33 lbs. |
| (b) Exide 3TS-13-1 or 6-AC-7-1 | 23 lbs. |
| (c) Reading 3-BRL-9 | 10 lbs. |
| (d) Exide 6-TS-7-1 | 31 lbs. |
| (e) Exide 6-TS-13-1 | 41 lbs. |
| (f) Exide 3-AC-7-1 | 13 lbs. |
| (g) 12 volt - Willard 5YR-7-6 | 20 lbs. |
| 203. Carburetor intake air heater | 2 lbs. (-46) |
| 204. 18x8-3 wheels (Goodyear) with 4-ply tires | 6 lbs.* (-6) |
| 205. 18 in. streamline wheels (Bendix) with brakes | 13 lbs.* (-6) |
| 206. 18x8-3 wheels (Goodyear) with brakes | 20 lbs.* (-6) |
| 207. Tail wheel | |
| (a) Castor installation on tail skid spring No. 315 | 2 lbs.* (+192) |
| (b) Aero Activities steerable on tail skid spring No. 315 | 3 lbs.* (+192) |
| (c) Aircraft Assoc. steerable on tail skid spring No. 315 | 3 lbs.* (+192) |
| (d) Bungee type assembly with 6x2.00 (1) pneumatic tire | 7 lbs. (+171) |
| (2) solid rubber tire | 8 lbs. (+171) |

208. Baggage compartments (See NOTES 1, 4 and 7)

| | |
|---|--------------|
| (a) 30 lb. auxiliary (aluminum) (Standard model) | 4 lbs. (+63) |
| (b) 30 lb. auxiliary (wooden) (Deluxe model) | 4 lbs. (+52) |

209. Two seat back cushions 4 lbs. (+18), (+60)

| | |
|-----------------------------|---------------|
| 210. Additional instruments | |
| (a) Front | 7 lbs. (-9) |
| (b) Rear | 10 lbs. (+25) |

211. Starter (Eclipse Y-150) (16 lbs.)
incl. wiring 22 lbs. (-26)

212. Cabin heater 5 lbs. (-25)

213. Protective covering 6 lbs. (+100)

(Silver foil on longerons, exposed metal
parts and control system cadmium plated
and extra dope, priming and finish)

214. Landing lights (Grimes ST-250) 8 lbs. (+12)

| | |
|--|--------------|
| 216. Generator | |
| (a) Engine-driven (Hodges H-12-V) | 9 lbs. (-26) |
| (b) Wind-driven (Hodges H-12-V) | 9 lbs. (-4) |
| (c) 12 volt, wind-driven (Lear 1030A and voltage regulator) | 11 lbs. (-6) |

REARWIN 7000 & DELUXE 7000 (Continued)

| | |
|--|--------------------------|
| 216. Air cleaner - Air Maze No. 562 | 2 lbs. (-46) |
| 217. Lagged oil tank and lines | 2 lbs. (-28) |
| 218. Parking brake (Dwg. 712-010 or 712-011) | 1 lb. (-13) |
| 219. Rear seat brakes (Dwg. 712-011) | 1 lb. (+10) |
| 220. 6.00-8 wheels (Shinn) with hyd. brakes and 4-ply tires | 15 lbs.* (-6) |
| 221. Emergency exit | 7 lbs. (+22) |
| 222. Skis | Use actual weight change |
| (a) Richards 1A | |
| (b) Curtiss-Wright Moth | |
| (c) Federal SA-3 | |
| (d) Federal SC-2 | |
| 223. Rear instrument panel and truss | 5 lbs. (+25) |
| 224. Antenna | |
| (a) Fixed | 2 lbs. (+80) |
| (b) Trailing | 3 lbs. (+80) |
| 225. Blind flying curtain | 1 lb. (+30) |
| 226. Radio, variable. Weight and location of items should be shown in weight and balance report. The structure has been substantiated for equipment as follows: | |
| (a) 15 lbs. in roof | (+34) |
| (b) 8 lbs. under front seat | (+2) |
| (c) 6 lbs. in baggage compt. (See NOTE 7) | (+74) |
| (d) 6 lbs. | (+24) |

Class III.

None.

NOTE A. Each aircraft manufactured after Jan. 7, 1943,
must, prior to original certification, satisfactorily
pass:

(a) An inspection for workmanship, materials and con-
formity before any covering, metal priming or
final finish is applied. All woodwork may be
varnished.

(b) A final inspection of the completed aircraft.

(c) Check of flight characteristics.

NOTE 1. Baggage capacity may be increased to a maximum
of 50 lbs. when auxiliary compartment (item 208a) is
installed and properly placarded. It has been re-
ported that an additional (unapproved) baggage compt.
has been installed in certain airplanes of model 7000
consisting of a canvas sack approximately 9x16x10 in.
hung over the back of the rear seat. All such com-
partments must be removed.

NOTE 2. Serial Nos. 401 to 413 inclusive, eligible at
1365 lbs. standard weight. (Item 101 is optional
Class II equipment for these serial Nos.)

NOTE 3. Eligible also with modified tail surface brac-
ing including brace wire fittings bolted to the fin
and stabilizer spars replacing the welded lug.
Rearwin Dwg. 418 together with bushings, lugs and
bolts forwarded to all owners.

NOTE 4. Eligible as Deluxe model with ball bearings in
control system, hinged rear seat and baggage box in-
stallation (item 208b) under rear seat replacing
aluminum compartment in cabin.

NOTE 5. Eligible for export as follows, subject to in-
spection for equipment specified in Chapter XII of
Inspection Handbook:

(a) Canada - Landplane

Skiplane - not eligible. However, struc-
ture complies with Canadian requirements
for ski installation with maximum ski
height of 13-5/8 in.

(b) All other countries except Australia and New
Zealand.

NOTE 6. Weight and balance report including list of
equipment included in certificated weight empty, and
loading instructions when necessary, must be submitted
with original inspector's report and each subsequent
report showing change in such equipment.

NOTE 7. When radio equipment, item 226(a), is installed,
reduce baggage capacity accordingly.

COMMONWEALTH AIRCRAFT, INCORPORATED

REARWIN 8500 & DELUXE 8500, 9000-L & DELUXE 9000-L,
9000-KR & DELUXE 9000-KR; 2 PCL-SH; TC 591

I - SPECIFICATIONS PERTINENT TO ALL MODELS:

| | |
|----------------|--|
| Placard speeds | Landplane Level flight or climb 105 mph Ind. Glide or dive 142 mph Ind. |
| | Seaplane Level flight or climb 100 mph Ind. Glide or dive 135 mph Ind. |
| Fuel capacity | 24 gals. (Two tanks - one at 12 gals. in each wing)(+23) |
| Oil capacity | 2 gals. (-26) (See item 230) |
| No. pass. | 1 (Front +8, or rear +40) |
| Baggage | 20 lbs. (+73) (See NOTES 1, 4 and 9) |
| Spec. basis | Type Certificate No. 591 (Aero. Bulletin 7A requirements) |
| Serial Nos. | Landplane - 427, 436 and up eligible (See NOTE A and NOTE 2) Seaplane - 471 eligible. (Other serial Nos. eligible upon receipt of mfr's. affidavit of conformity with approved seaplane data) |

EQUIPMENT: (Datum is wing leading edge)(* Means net increase) (See NOTE 8)

Class I.

A. Landplane

| | |
|---|---------------|
| 101. Exhaust collector ring | 7 lbs. (-40) |
| 102. 7.00-4 wheels (Warner) and 4-ply tires | 21 lbs. (-6) |
| 103. Tail skid | 6 lbs. (+186) |
| 104. Propeller - wood (incl. hub, 8 lbs.) | 24 lbs. (-53) |

B. Seaplane: Items 101, 104 and 208 PLUS.

| | |
|---|----------------|
| 151. Edo H-1525 or 46-1620 floats | |
| 152. Seaplane type fin; rudder and aux. fin | 16 lbs.*(+185) |

Class II.

A. Landplane

| | |
|--|---------------------|
| 200. Miscellaneous items as noted in approved weight and balance report. | |
| 201. Engine ring cowl | 10 lbs. (-46) |
| 202. Battery and box | (-24) |
| (a) Reading 6ARL-9 or 6-ARL-11 | 33 lbs. |
| (b) Exide 3TS-13-1 or 6-AC-7-1 | 23 lbs. |
| (c) Reading 3-BRL-9 | 10 lbs. |
| (d) Exide 6-TS-7-1 | 31 lbs. |
| (e) Exide 6-TS-13-1 | 41 lbs. |
| (f) Exide 3-AC-7-1 | 13 lbs. |
| (g) 12 volt - Willard SYR-7-6 | 20 lbs. |
| 203. Carburetor air heater | 2 lbs. (-46) |
| 204. 18x8-3 wheels (Goodyear) with 4-ply tires | 8 lbs.*(-6) |
| 205. 18 in. streamline wheels (Bendix) with brakes | 13 lbs.*(-6) |
| 206. 18x8-3 wheels (Goodyear) with brakes | 20 lbs.*(-6) |
| 207. Tail wheel | |
| (a) Castor installation on tail skid spring No. 315 | 2 lbs.*(+192) |
| (b) Aero Activities steerable on tail skid spring No. 315 | 3 lbs.*(+192) |
| (c) Aircraft Assoc. steerable on tail skid spring No. 315 | 3 lbs.*(+192) |
| (d) Bungee type assembly with 6x2.00 | |
| (1) pneumatic tire | 7 lbs. (+171) |
| (2) solid rubber tire | 8 lbs. (+171) |
| 208. Baggage compartments (See NOTES 1, 4 and 9) | |
| (a) 30 lb. auxiliary (aluminum) (Std. models) | 4 lbs. (+63) |
| (b) 30 lb. auxiliary (wooden) (DeLuxe models) | 4 lbs. (+52) |
| 209. Two seat back cushions | 4 lbs. (+18), (+50) |
| 210. Additional instruments | |
| (a) Front | 7 lbs. (-9) |
| (b) Rear | 10 lbs. (+25) |
| 211. Starter (Eclipse -150) (16 lbs.) incl. wiring | 22 lbs. (-26) |
| 212. Cabin heater | 3 lbs. (-25) |

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REARWIN 8500, etc. (Continued)

| | |
|--|---------------|
| 213. Protective covering (Silver foil on longerons, exposed metal parts and control system cadmium plated and extra dope, priming and finish) | 5 lbs. (+100) |
| 214. Landing lights (Grimes ST-250) | 8 lbs. (+12) |
| 215. Generator | |
| (a) Engine-driven (Hodges H-12-V) | 9 lbs. (-26) |
| (b) Wind-driven (Hodges H-12-V) | 9 lbs. (-4) |
| (c) 12 volt, wind-driven (Lear 1030A and voltage regulator) | 11 lbs. (-6) |
| 216. Air cleaner (Air Maze No. 562) | 2 lbs. (-46) |
| 217. Lagged oil tank and lines | 2 lbs. (-28) |
| 218. Parking brake (Dwg. 712-010 or 712-011) | 1 lb. (-15) |
| 219. Rear seat brakes (Dwg. 712-016) | 1 lb. (+10) |
| 220. 6.00-6 wheels (Shinn) with hyd. brakes and 4-ply tires | 16 lbs.*(-6) |
| 221. Emergency exit | 7 lbs. (+22) |
| 222. Oil cooler | 8 lbs. (-28) |
| 223. Radio, variable, weight and location of items should be shown in weight and balance report. The structure has been substantiated for the following equipment: | |
| (a) 19 lbs. at | (-15) |
| (b) 15 lbs. at | (+34) |
| (c) Antenna reel | 3 lbs. (+28) |
| (d) 8 lbs. under front seat | (+2) |
| (e) 6 lbs. in baggage compt. (See NOTE 9) | (+74) |
| (f) 6 lbs. | (+24) |
| 224. Skis Use actual weight change | |
| (a) Washington Aircraft 1625 | |
| (b) Federal SA-3 | |
| 225. Engine - Rearwin LeBlond 90 5G (replacing 5F - placard limits same as for 5F) | 4 lbs.* (-44) |
| 226. Antenna | |
| (a) Fixed | 2 lbs. (+80) |
| (b) Trailing | 3 lbs. (+80) |
| 227. Rear instrument panel and truss | 6 lbs. (+25) |
| 228. Blind flying curtain | 1 lb. (+30) |
| 229. Vacuum pump (engine-driven) | |
| (a) Pump - Pesco 207D | 5 lbs. (-32) |
| (b) Vacuum pump adapter | 1 lb. (-37) |
| (c) Vacuum lines and fittings | 11 lbs. (-11) |
| 230. 1-3/4 gal. oil tank - Dwg. S-107 (replacing 2 gal. tank) | No wt. change |

B. Seaplane: Items 200 thru 203, 209 thru 217 and 221 thru 223.

Class III.

None.

NOTE A. Each aircraft manufactured after Jan. 7, 1943, must, prior to original certification, satisfactorily pass:

- An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- A final inspection of the completed aircraft.
- Check of flight characteristics.

NOTE 1. Baggage capacity of landplane may be increased to a maximum of 50 lbs. when auxiliary compartment (item 208a) is installed and properly placarded.

NOTE 2. Serial Nos. 414 thru 426 and 428 thru 435 are

- eligible as landplanes at standard weight of 1565 lbs.
- not approved with auxiliary baggage compartment (item 208);
- eligible at standard weight of 1410 lbs. and with item 208 provided that stabilizer up travel is increased 1/4 in. (Mfr's. affidavit must accompany inspection report.)

COMMONWEALTH AIRCRAFT, INCORPORATED

REARWIN 8500, etc. (Continued)

NOTE 3. Eligible also with modified tail surface bracing including brace wire fittings bolted to the fin and stabilizer spars replacing the welded lugs. Rearwin Dwg. No. 418 together with bushings, lugs and bolts forwarded to all owners.

NOTE 4. Eligible as DeLuxe model with ball bearings in control system, hinged rear seat and baggage box installation (item 208b) under rear seat replacing aluminum compartment in cabin.

NOTE 5. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

(a) Canada - Landplane

Skiplane - not eligible. However, structure complies with Canadian requirements for ski installation with maximum ski height of 13-5/8 in.

Seaplane - maximum standard weight 1615 lbs.

(b) All other countries except New Zealand.

NOTE 6. Model 8500 same as model 9000-L except engine. Certain serial Nos. equipped with 90 hp engines were certificated as model 8500 with placard limits of 2125 rpm (85 hp). These serial Nos. are also eligible with 9000-L nameplates and placard limits of 2250 rpm (90 hp).

NOTE 7. Model 9000-KR same as models 8500 and 9000-L except for full NACA cowl, modified forward fuselage fairing and modified windshield contour. Weight empty of 9000-KR is approximately 40 lbs. more than 9000-L.

NOTE 8. Weight and balance report including list of equipment included in certificated weight empty and loading instructions when necessary, must be submitted with original inspector's report and each subsequent report showing change in such equipment.

NOTE 9. When radio equipment, item 223(e), is installed, reduce baggage capacity accordingly.

II - MODEL 8500 AND DELUXE 8500 (See NOTES 4 AND 6)

Engine Rearwin LeBlond 85, 5F or 5DF

Placard limits Maximum, except take-off
-- in. Hg., 2125 rpm (85 hp)
Take-off (one minute)
-- in. Hg., 2125 rpm (85 hp)

Standard weight Landplane - 1460 lbs. (See NOTE 2)
Seaplane - 1615 lbs.

C.G. limits Landplane - (+7.8) and (+18.4)
Seaplane - (+10.7) and (+18.2)

III - MODEL 9000-L AND DELUXE 9000-L (See NOTES 4 and 6)

Engine Rearwin LeBlond 90 5F (See item 225)

Placard limits Maximum, except take-off
-- in. Hg., 2250 rpm (90 hp)
Take-off (one minute)
-- in. Hg., 2250 rpm (90 hp)

Standard weight Landplane - 1480 lbs.
Seaplane - 1615 lbs.

C.G. limits Landplane - (+7.8) and (+17.9)
Seaplane - (+10.7) and (+18.2)

IV - MODEL 9000-KR AND DELUXE 9000-KR (See NOTES 4, 6 AND 7)

COMMONWEALTH AIRCRAFT, INCORPORATED

| <u>REARWIN 9000 & DELUXE 9000, 2 PCL-SM, TC 624</u> | |
|---|--|
| Engine | Warner Scarab Jr. |
| Placard limits | Maximum, except take-off -- in. Hg., 2025 rpm (90 hp) Take-off (one minute) -- in. Hg., 2025 rpm (90 hp) |
| Placard speeds | Landplane Level flight or climb 105 mph Ind. Glide or dive 142 mph Ind. Seaplane Level flight or climb 100 mph Ind. Glide or dive 135 mph Ind. |
| Fuel capacity | 24 gals. (Two tanks - one in each wing at 12 gals.) (+23) |
| Oil capacity | 2 gals. (-26) |
| No. pass. | 1 (+40) |
| Baggage | Aluminum compt. in cabin (+63) Maximum - Landplane 30 lbs. Seaplane 20 lbs. Wooden compt. aft of cabin (+73) Maximum - Landplane 20 lbs. Seaplane 15 lbs. |
| Standard weight | Landplane - 1460 lbs. Seaplane - 1615 lbs. |
| C.G. limits | Landplane - (+7.2) and (+17.8) Seaplane - (+8.7) and (+17.5) |
| Spec. basis | Type Certificate No. 624 (Aero. Bulletin 7A requirements) |
| Serial Nos. | 490 and up eligible (See NOTE A) |
| EQUIPMENT: | (Datum is wing leading edge) (* Means net increase) (See NOTE 4) |

Class I.

A. Landplane

| | |
|--|---------------|
| 101. Exhaust collector ring | 7 lbs. (-37) |
| 102. 7.00-4 wheels (Warner 1105 or Shinn AV) and 4-ply tires | 21 lbs. (-6) |
| 103. Tail skid | 6 lbs. (+186) |
| 104. Seat back cushions | |
| 105. Propeller - wood (incl. hub, 9 lbs.) | 25 lbs. (-53) |

B. Seaplane: Items 101, 104 and 105 PLUS

| | |
|--|----------|
| 151. Edo H-1525 or 46-1620 floats | |
| 152. Seaplane type fin, rudder and auxiliary fin | 16 lbs.* |

Class II.

A. Landplane

| | |
|--|----------------|
| 200. Miscellaneous items as noted in approved weight and balance report. | |
| 201. Engine ring cowl | 12 lbs. (-47) |
| 202. Battery and box | (-24) |
| (a) Reading 6-ARL-9 or 6-ARL-11 | 33 lbs. |
| (b) Exide 3TS-13-1 or 6-AC-7-1 | 23 lbs. |
| (c) Reading 3-BRL-9 | 10 lbs. |
| (d) Exide 6-TS-7-1 | 31 lbs. |
| (e) Exide 6-TS-13-1 | 41 lbs. |
| (f) Exide 3-AC-7-1 | 13 lbs. |
| 203. Carburetor air heater | 2 lbs. (-50) |
| 204. 18x8-3 wheels (Goodyear) with brakes and 4-ply tires | 20 lbs.* (-6) |
| 205. 18 in. streamline wheels (Bendix) with brakes | 13 lbs.* (-6) |
| 206. 18x8-3 wheels (Goodyear) with 4-ply tires | 8 lbs.* (-6) |
| 207. Tail wheel | |
| (a) Castor installation on tail skid spring No. 315 | 2 lbs.* (+192) |
| (b) Aero Activities steerable on tail skid spring No. 315 | 3 lbs.* (+192) |
| (c) Aircraft Assoc. steerable on tail skid spring No. 315 | 3 lbs.* (+192) |
| (d) Bungee type assembly with | 6x2.00 |
| (1) pneumatic tire | 7 lbs. (+171) |
| (2) solid rubber tire | 8 lbs. (+171) |

REARWIN 9000 & DELUXE 9000 (Continued)

| | |
|---|--------------------------------|
| 208. Additional instruments | 5 lbs. (-9) |
| 209. Starter (Eclipse Y-150)(16 lbs.) incl. wiring | 22 lbs. (-26) |
| 210. Cabin heater | 2 lbs. (-30) |
| 211. Lagged oil tank and lines | 2 lbs. (-28) |
| 212. Heywood starter and tank | 10 lbs. (-36) 15 lbs. (+74) |
| 213. Protective covering (Silver foil on longerons, exposed metal parts and control system cadmium plated and extra dope, priming and finish) | 5 lbs. (+100) |
| 214. Landing lights (Grimes ST-250) | 8 lbs. (+12) |
| 215. Generator | |
| (a) Engine-driven - Hodges H-12-V | 9 lbs. (-26) |
| (b) Wind-driven - Hodges H-12-V | 9 lbs. (-4) |
| 216. Air cleaner - Air Maze No. 562 | 2 lbs. (-46) |
| 217. Exhaust collector and speed ring (Engle) | 25 lbs. (-37) |
| 218. Parking brake (Dwg. 712-010 or 712-011) | 1 lb. (-13) 1 lb. (+10) |
| 219. Rear seat brakes (Dwg. 712-016) | 1 lb. (+10) |
| 220. 6.00-6 wheels (Shinn) with hyd. brakes and 4-ply tires | 15 lbs.* (-6) |
| 221. Emergency exit | 7 lbs. (+22) |
| 222. Skis | Use actual weight change |
| (a) Washington Aircraft 1625 | |
| (b) Federal SA-3 | |

B. Seaplane: Items 200 thru 203, 208 thru 217, 221.

Class III.

None.

NOTE A. Each aircraft manufactured after Jan. 7, 1943, must, prior to original certification, satisfactorily pass:

- An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- A final inspection of the completed aircraft.
- Check of flight characteristics.

NOTE 1. Eligible also with modified tail surface bracing including brace wire fittings bolted to the fin and stabilizer spars replacing the welded lugs. Rearwin Dwg. No. 418 together with bushings, lugs and bolts forwarded to all owners.

NOTE 2. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

- Canada - Landplane
Skiplane - not eligible. However, structure complies with Canadian requirements for ski installation with maximum ski height of 13-5/8 in.
Seaplane - maximum standard weight 1615 lbs.

(b) All other countries except Australia and New Zealand.

NOTE 3. Eligible as DeLuxe model with ball bearings in control system, hinged rear seat and baggage box installation (capacity 30 lbs.) under rear seat replacing aluminum compartment in cabin.

NOTE 4. Weight and balance report including list of equipment included in certificated weight empty and loading instructions when necessary, must be submitted with original inspector's report and each subsequent report showing change in such equipment.

5-20700

OE, AVRO AVIAN, 2 POLB, 2-39

Engine Cirrus Mark III 85 hp or Mark II 80 hp
 Fuel 23 gals.
 Oil 2 gals.
 No. pass. 1
 Baggage 16 lbs.
 Standard weight 1460 lbs.
 Spec. basis British Certificate of Airworthiness
 Serial Nos. 135 to 145, 147, 148, 157, 166, 169, 186
 to 190, 194 to 197, 242 to 281 eligible.

NOTE 1. Eligible with or without wing stubs. If equipped with wing stubs, the original I section stub spar must be replaced by a solid spruce spar $1\frac{1}{2}$ inch thick, reinforced with $1/16$ inch steel straps. (Inspector should denote that change has been made.)

NOTE 2. Serial No. 249 is eligible with 7.50-10 wheels and brakes.

ROE, AVRO AVIAN SPECIAL, 2 POLB, 2-307

(Remodeler Menasco Manufacturing Co.)

Engine Menasco Pirate A-4 90 hp
 Fuel 26 gals.
 Oil 3 gals.
 No. pass. 1
 Baggage None
 Standard weight 1525 lbs.
 Spec. basis British Airworthiness Certificate and
 Aero. Bulletin 7A, Section 7
 Serial Nos. See NOTE 1

NOTE 1. All aircraft eligible under Approval 2-39 eligible under this approval provided conversion is made in accordance with approved data by Menasco Mfg. Co. or by an approved repair station furnished approved data by Menasco. Proper affidavit must be submitted.

ROSE PARAKEET A-1, 1 POLB, 2-514

Engine Continental A-40, A-40-2, A-40-3 or
 A-40-4

Placard limits Maximum, except take-off.
 -- in. Hg., 2575 rpm (40 hp)
 Take-off (one minute)
 -- in. Hg., 2575 rpm (40 hp)
 Fuel 10 gals. (One tank in fuselage)
 Oil 1 gal.
 No. pass. None
 Baggage None (Pay load includes parachute 20 lbs.)
 Standard weight 728 lbs.
 C.G. limits (+0.5) and (+0.75)
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 101 and up eligible (See NOTE A)

EQUIPMENT: (Datum is lower wing leading edge) (* Means net increase)

Class I:

- 101. 14x3 wheels (Rose model D) with 16x4 tires
- 102. 10 strands of 5/8 inch shock cord on shock strut
- 103. Tail skid
- 104. Propeller - wood

Class III:

- 301. 3 in. wheels (Goodyear 3TW) 3 lbs.*

NOTE A. Each aircraft certificated must satisfactorily pass --

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

ROSS RS-1, 2 POLM, TC 732

Engine Continental A-40-4 (See Item 301 and NOTE 4)
Placard limits: For all operations, 2575 rpm (40 hp)
Propeller Static rpm at maximum permissible throttle setting - not more than 2400 rpm
not less than 2325 rpm
Diameter - not more than 71 in.
not less than 67 in.
Placard speeds: Level flight or climb 90 mph True Ind.
Glide or dive 122 mph True Ind.
Fuel capacity 9 gals. (-8)
Oil capacity 1 gal. (-35)
No. pass. 1 (+17) or (+47) (See NOTE 2)
Baggage 16 lbs. (-20)
Standard weight 940 lbs.
C.G. limits (+20.2)(35.7% MAC) and (+24.8)(41.5% MAC)
MAC 60 in. L.E. MAC is at L.E. wing.
Leveling means Level top longerons between cockpits
Spec. basis Type Certificate No. 732
Serial Nos. 1 and up eligible (See NOTE A)
EQUIPMENT: (Datum is wing leading edge)(+Denotes net increase)

Class I.

- 101. Propeller - wood (fixed or adjustable pitch) less hub 8 lbs. (-44)
- 102. 7.00-4 wheels (Shinn 2-AV or 2-AVT) with 7.00-4 4-ply tires (See NOTE 3) 21 lbs. (+9)
- 103. Tail skid 5 lbs. (+133)
- 104. Carburetor air heater 2 lbs. (-32)

Class II.

200. Miscellaneous items as noted in approved weight and balance report.

Class III.

- 301. Continental A-40-5 engine 12 lbs. (-24)
- 302. 16x7-3 wheels (Goodyear 3-LRBA) 3 lbs. (+9)
- 303. Steerable Tail wheel (Ort-Lancaster) 2 lbs. (+189)
(Dwgs. 10066 and 10067)

NOTE A. Each aircraft certificated must satisfactorily pass: (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.

- (b) A final inspection of the completed aircraft.
- (c) Check of flight characteristics.

NOTE 1. Eligible for export as follows, subject to inspection for equipment specified in Chapter XII of Inspection Handbook:

- (a) Canada - Landplane
Skiplane - not eligible
- (b) All other countries except Australia, Great Britain and New Zealand.

NOTE 2. Placard front cockpit,
"Solo flying from rear seat only."

NOTE 3. Placard front cockpit,
"4-Ply Tires - 15 lbs. Pressure Required."

NOTE 4. No aircraft of this model shall be eligible for original certification with single ignition engine after August 1, 1941.

RYAN B-1, 5 PCLM, ATC 25

| | |
|-----------------|--|
| Engine | Wright J-5 220 hp |
| Fuel | 84 gals. |
| Oil | 4-1/2 gals. |
| No. pass. | 4 |
| Baggage | 42 lbs. |
| Standard weight | 3300 lbs. |
| Spec. basis | Approved Type Certificate No. 25 |
| Serial Nos. | 1 to 178 mfrd. prior to 7-1-32, except 51, eligible. Approval expired as of that date. |

Class I equipment: Hand inertia starter and brakes.
Class III equipment: Skis; Bacon 3300 or McGee Jr. 8.
NOTE 1. Serial No. 52 eligible with Aircraft Products
Model J oilhydraulic shock struts.

RYAN C-1, 4 PCLM, ATC 346

| | |
|-----------------|------------------------------|
| Engine | Wright R-760 250 hp |
| Fuel | 71 gals. |
| Oil | 7 gals. |
| No. pass. | 3 |
| Baggage | 58 lbs. |
| Standard weight | 3350 lbs. |
| Spec. basis | Aero. Bulletin 7A, Section 3 |
| Serial Nos. | 400, 401 and 402 eligible |

RYAN B-3, 5 PCLM, 2-50

| | |
|-----------------|------------------------------|
| Engine | Wright R-975 330 hp |
| Fuel | 83 gals. |
| Oil | 7-1/2 gals. |
| No. pass. | 4 |
| Baggage | 72 lbs. |
| Standard weight | 3704 lbs. |
| Spec. basis | Aero. Bulletin 7A, Section 3 |
| Serial Nos. | 179, 183 to 186 eligible |

RYAN B-3A, 6 PCLM, 2-105

| | |
|-----------------|--|
| Engine | Wright J-5 220 hp |
| Fuel | 100 gals. |
| Oil | 7-1/2 gals. |
| No. pass. | 4 |
| Baggage | 75 lbs. |
| Standard weight | 3700 lbs. |
| Spec. basis | Aero. Bulletin 7A, Section 3 |
| Serial Nos. | 210 and up mfrd. prior to 7-1-40 eligible. Approval expired as of that date. |

RYAN B-5, 6 PCL-SM, ATC 142

| | |
|-----------------|---|
| Engine | Wright R-975 330 hp |
| Fuel | 100 gals. |
| Oil | 7-1/2 gals. |
| No. pass. | 5 |
| Baggage | 73 lbs. |
| Standard weight | Landplane 4000 lbs. Seaplane 4100 lbs. |
| Spec. basis | Approved Type Certificate No. 142 |
| Serial Nos. | 198, 188 to 248 eligible. Approval expired as of 7-1-32. |

Class I equipment: Seaplane - Edo Q floats
Class III equipment: Engine ring cowl 18 lbs.

RYAN B-7, 6 PCL-SM, ATC 262

| | |
|-----------------|--|
| Engine | P&W Wasp C1 420 hp |
| Fuel | 100 gals. |
| Oil | 8 gals. |
| No. pass. | 5 |
| Baggage | 100 lbs. |
| Standard weight | Landplane 4300 lbs. Seaplane 4870 lbs. |
| Spec. basis | Approved Type Certificate No. 262 |
| Serial Nos. | 249 to 266 eligible. Approval expired as of 7-1-32. |

Class I equipment: Seaplane - Edo K floats, large
fin and rudder.
Class III equipment: Landplane - 128 lbs. extra
equipment including 120 gal. fuel capacity.

RYAN B-7, 6 PCLM, 2-223

| | |
|-----------------|------------------------------|
| Engine | P&W Wasp C1 420 hp |
| Fuel | 132 gals. |
| Oil | 8-1/2 gals. |
| No. pass. | 5 |
| Baggage | — |
| Standard weight | 4300 lbs. |
| Spec. basis | Aero. Bulletin 7A, Section 3 |
| Serial Nos. | 255 only eligible. |

RYAN SC-150, 3 PCLM, ATC 651

Engine Menasco Pirate C-48
Placard limits Maximum, except take-off
 32.3 in. Hg., 2260 rpm (150 hp)
 Take-off (one minute)
 34.7 in. Hg., 2280 rpm (150 hp)
Propeller Maximum permissible diameter 94 in.
Placard speeds Level flight or climb 147 mph True Ind.
 Glide or dive 198 mph True Ind.
 Flaps extended 108 mph True Ind.
Fuel capacity 37 gals. (One tank in fuselage) 25 lbs.
 (-25)
Oil capacity 3 gals. (One tank in engine compt.)
 7 lbs. (-34)
No. pass. 2 (+4, +31) (Crew at +4)
Baggage 170 lbs. (Single compt. in rear of
 cabin)(+31)(See NOTE 2)
Weights Empty Use actual (Approx. 1520 lbs.
 (-1.5) with Class I items only)
 Standard 2150 lbs.
C.G. limits (-4.2) and (+2.1) Level for weighing on
 longitudinal at bottom of cabin door
Spec. basis Type Certificate No. 651 (Aero. Bulletin
 7A requirements)
Serial Nos. 201 and up eligible per NOTE A
EQUIPMENT: (Datum is centerline of the wing spar)
 (* Means net increase)

Class I:

- 101. Wheel streamlines 10 lbs. (-11)
- 102. (a) 18x8-3 wheels (Goodyear 3LMBA or 3LMBM) 14 lbs. (-15)
- (b) 18x8-3 tires (Goodyear 4 ply HD)(Wheels must be placarded for these tires) 21 lbs. (-15)
- (c) Shock struts (Aerol A0-2) 20 lbs. (-9)
- 103. Starter (Eclipse Y-150) 20 lbs. (-35)
- 104. Battery (Reading 6ARL9) 29 lbs. (-33)
- 105. 8 in. streamline tail wheel 3 lbs. (+189)
- 106. Center section flap, manually operated (Dwg. No. C-2090)
- 107. Left elevator trailing edge tab, manually operated
- 108. Oil radiator (Av. cooler No. 1) 6 lbs. (-43)
- 109. Propeller - wood

Class II:

- 200. Miscellaneous items as noted in approved weight and balance report.
- 201. Generator (Hodges H-12V) 8 lbs. (-24)
- 202. Radio (Lear T-30-R3) 23 lbs. (+31)
- 203. Landing lights (Grimes ST-250) 8 lbs. (+15)
- 204. Flares (International MR II Model 1-3) 12 lbs. (+35)
- 205. Misc. extra instruments (List 8-18-37 on file West Coast Branch, A.A.S.) 7 lbs. (-15)
- 206. Dual controls (removable type) 4 lbs. (-18)

Class III:

- 301. Center section flap, manually operated (Dwg. No. C-2090A) 20 lbs.* (+1)

NOTE A. Each aircraft manufactured after Nov. 20, 1940 must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials, and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) A check of the flight characteristics.

NOTE 1. Eligible for export as follows subject to inspection for equipment specified in Chapter XII of Inspection Handbook: (Nov. 20, 1940)

- (a) Canada - Landplane
 Skiplane - not eligible.
- (b) All other countries except Great Britain, Australia and New Zealand.

NOTE 2. Baggage in compartment rear of cabin must be limited to zero when passenger occupies rear seat and it must be so placarded.

RYAN SCW-145, 3 PCLM, ATC 658

Engine Warner Super Scarab Series 50 or 50A
Placard limits Maximum, except take-off
 -- in. Hg., 2050 rpm (145 hp)
 Take-off (one minute)
 -- in. Hg., 2050 rpm (145 hp)
Propeller Maximum permissible diameter 84 in.
Placard speeds Level flight or climb 147 mph True Ind.
 Glide or dive 198 mph True Ind.
 Flaps extended 103 mph True Ind.
Fuel capacity 37 gals. (One tank in fuselage) 25 lbs.
 (-25)
Oil capacity 3 gals. (One tank in engine compt.)
 7 lbs. (-36)
No. pass. 2 (+4, +31) (Crew at +4)
Baggage 190 lbs. (Single compt. in rear of
 cabin)(+31) (See NOTE 2)
Weights Empty Use actual (Approx. 1346 lbs.
 (-1.84) with Class I items only)
 Standard 2150 lbs.
C.G. limits (-4.7) and (+2.1) Level for weighing on
 longitudinal at bottom of cabin door.
Spec. basis Type Certificate No. 658 (Aero. Bulletin
 7A requirements)
Serial Nos. 201 and up eligible per NOTE A
EQUIPMENT: (Datum is centerline of the wing spar)
 (* Means net increase)

Class I:

- 101. Engine cowl 21 lbs. (-45)
- 102. Manifold and preheater 18 lbs. (-52)
- 103. Propeller - wood 30 lbs. (-67)
- 104. Starter (Eclipse Y-150) 20 lbs. (-40)
- 105. Battery (Reading 6ARL9) 29 lbs. (-38)
- 106. Standard instruments (includes altimeter, air speed, tachometer, compass, oil temp., oil press.) 6 lbs. (-15)
- 107. Cabin heater-ventilator
- 108. Wheel streamlines 10 lbs. (-11)
- 109. (a) 18x8-3 wheels (Goodyear 3LMBA or 3LMBM) 14 lbs. (-15)
- (b) 18x8-3 tires (Goodyear 4 ply HD)(Wheels must be placarded for these tires) 21 lbs. (-15)
- (c) Shock struts (Aerol A0-2) 20 lbs. (-9)
- 110. 8 in. streamline tail wheel 3 lbs. (+189)
- 111. Left elevator trailing edge tab, manually operated
- 112. Center section flap, manually operated (Dwg. No. C-2090)

Class II:

- 200. Miscellaneous items as noted in approved weight and balance report.
- 201. Generator (a) Hodges H-12-V 8 lbs. (-24)
- (b) Bosch LE70/12R5 11 lbs. (-45)
- 202. Parachute (Rear passenger) 20 lbs. (+31)
- 203. Radio (Lear T30-R5) 23 lbs. (+31)
- 204. Landing lights (Grimes ST-250) 8 lbs. (+15)
- 205. Flares (Inter. MKII Model 1-3) 13 lbs. (+35)
- 206. Optional instruments (List 9-18-37 on file West Coast Branch, A.A.S.) 5 lbs. (-15)

Class III:

- 301. Parachutes (Pilot and front pass.) 40 lbs. (+4)
- 302. Center section flap, manually operated (Dwg. No. C-2090A) 20 lbs.* (+1)
- 303. Battery (Exide STS-7-1) with box 29 lbs. (-38)

NOTE A. Each aircraft manufactured after Nov. 20, 1940 must, prior to original certification, satisfactorily pass:

- (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) A check of the flight characteristics.

NOTE 1. Eligible for export as follows subject to inspection for equipment specified in Chapter XII of Inspection Handbook: (Nov. 20, 1940)

- (a) Canada - Landplane
 Skiplane - not eligible.
- (b) All other countries except Great Britain, Australia and New Zealand.

NOTE 2. Baggage in compt. rear of cabin must be limited to zero when pass. occupies rear seat and it must be so placarded. Maximum baggage must be determined by C.G. check, not to exceed 190 lbs. in any case.

RYAN ST, 2 POLM, ATC 541

Engine Menasco Pirate B-4
Placard limits Maximum, except take-off
 -- in. Hg., 2000 rpm (95 hp)
 Take-off (one minute)
 -- in. Hg., 2000 rpm (95 hp)
Propeller Maximum permissible diameter 106 in.
Placard speeds Level flight or climb 123 mph True Ind.
 Glide or dive 156 mph True Ind.
Fuel capacity 24 gals. (One tank in fuselage)(-10.5)
Oil capacity 2½ gals. or 2 gals. (-27)
No. pass. None or 1 (+14.5) (Crew 1 or 2)(+14.5,
 +65) (See NOTE 1)
Baggage 40 lbs. (Single occpt. between cock-
 pits)(+31)
Standard weight 1570 lbs.
C.G. limits (+11.0) and (+14.7) (Measured hori-
 zontally with engine bearers level)
 (See NOTE 4)
Spec. basis Approved Type Certificate No. 541
Serial Nos. 101 and up mfrd. prior to 9-30-39 eligi-
 ble. Approval expired as of that date.
EQUIPMENT: (Datum is wing leading edge)(* Means net
 increase)

Class I:

| | | |
|--|---------|---------|
| 101. Wheel streamlines | 15 lbs. | (+3) |
| 102. 3 in. wheels (Goodyear 3MBA or 3 LMBB) with brakes and 18x8-3 tires | | (-2) |
| 103. (a) Front seat cushions | 3 lbs. | (+14.5) |
| (b) Rear seat cushions | 3 lbs. | (+65) |
| 104. Parking brake | 1 lb. | (+65) |
| 105. 8 in. streamline tail wheel | | (+170) |
| 106. Partial span split trailing edge flaps manually operated | | |
| 107. Elevator trailing edge tabs manually operated | | |
| 108. Propeller - wood | | (-62) |

Class II:

| | | |
|---|---------------------|-------|
| 200. Miscellaneous items as noted in approved weight and balance report. | | |
| 201. Propeller - adj. metal | 13 lbs.* | (-62) |
| 202. New type wheel stream- lines | Net decrease 6 lbs. | (+3) |

Class III:

| | | |
|---|------------------|---------|
| 301. Battery (Reading 3BRL) | 9 lbs. | (+31) |
| 302. Wing landing lights | 3 lbs. | |
| 303. Flap operating mechanism, lever type (replacing standard worm gear type) | No weight change | |
| 304. Parachutes - one or two | 20 lbs. each | |
| 305. Cockpit inclosure | 21 lbs. | (+39.5) |
| 306. Dual controls (removable type) | 4 lbs. | (-8) |

NOTE 1. Placard fuel selector valve as follows:
 "Always take-off and land with fuel feeding from
 reserve."

NOTE 2. Eligible for export as follows subject to
 inspection for equipment specified in Chapter XIII
 of Inspection Handbook: (February 14, 1938)
 (a) Canada - Landplane

Skiplane - not eligible

(b) All other countries.

NOTE 3. Placard front cockpit as follows: "When
 operated as a single place airplane, pilot must
 occupy rear seat."

NOTE 4. All aircraft also eligible with C.G. limits of
 (+11.0) and (+16.3) provided an elevator bungee is
 installed in accordance with Ryan Dwg. SK257, change C,
 and the elevator cables are adjusted to provide an up
 elevator travel of exactly 29° and a down elevator
 travel of approximately 26°.

RYAN ST-A, 1 OR 2 POLM, ATC 571

Engine Menasco Pirate C-4 (See also Item 202)
 Placard limits Maximum, except take-off
 -- in. Hg., 2175 rpm (125 hp)
 Take-off (one minute)
 -- in. Hg., 2175 rpm (125 hp)
 Propeller Maximum permissible diameter 106 in.
 Placard speeds Level flight or climb 123 mph True Ind.
 Glide or dive 166 mph True Ind.
 Fuel capacity 24 gals. (One tank in fuselage)(-10.5)
 Oil capacity 2 or 2½ gals. (-27)
 No. pass. 1 (+14.5) (See NOTES 2 and 5)
 Baggage 40 lbs. (Single compartment between
 cockpits)(+31) (See NOTE 2)
 Standard weight 1600 lbs.
 C.G. limits (+11.0) and (+14.7) (Measured hori-
 zontally with engine bearers level)
 (See NOTE 6)
 Spec. basis Approved Type Certificate No. 571
 Serial Nos. 203 and up mfrd. prior to 7-24-41 eli-
 gible. Approval expired as of that
 date.

EQUIPMENT: (Datum is wing leading edge)(* Means
 net increase)

Class I:

101. Wheel streamlines 15 lbs. (+3)
 102. 3 in. wheels (Goodyear 3MRA or
 SLMRA) with brakes and 18x8-3
 tires (-2)
 103. (a) Front seat cushions 3 lbs. (+14.5)
 (b) Rear seat cushions 3 lbs. (+65)
 104. Wiring for position lights 1 lb.
 105. 8 in. streamline tail wheel (+170)
 106. Partial span split trailing
 edge flaps manually operated
 107. Elevator trailing edge tabs
 manually operated
 108. Propeller - wood (Night bolt
 hub required) (-62)

Class II:

200. Miscellaneous items as noted in approved
 weight and balance report.
 201. Radio 22 lbs.
 202. Menasco D-4 engine (with down
 draft carburetor)(See Model ST-A
 dwg. list for details of
 installation) 19 lbs.* (-39)

Class III:

301. Battery (in baggage compt.) Max.40 lbs. (+31)
 302. Wing landing lights 3 lbs.
 303. Flap operating mechanism,
 lever type (replacing standard
 worm gear type) No weight change
 304. Parachutes - one or two 20 lbs. each
 305. Dual instruments in front
 cockpit (0)
 306. Cockpit inclosure 21 lbs. (+39.5)
 307. Starter
 (a) Electric (Eclipse Y-150)
 including cables 23 lbs. (-21)
 (1) Bonding and shielding 3 lbs.
 (2) Booster and solenoid
 (b) Heywood pump 10 lbs. (-21);
 tank and plumbing 24 lbs. (+31)
 308. Dual controls (removable type) 4 lbs. (-8)
 309. New type wheel stream-
 lines Net decrease 6 lbs. (+3)

NOTE 1. Placard fuel selector valve as follows:
 "Always take-off and land with fuel feeding from
 reserve."

RYAN ST-A (Continued)

NOTE 2. Single place type approved also. (Front seat
 and front seat controls removed; auxiliary 16½ gal.
 fuel tank, 2½ gal. oil tank, hand wobble pump 3 lbs.,
 and additional baggage compartment over auxiliary fuel
 tank installed.) Net increase in weight 26 lbs.
 Baggage 53 lbs. (decrease 20 lbs. when parachute is
 carried).

NOTE 3. This model same as model ST (ATC 541) except
 for change in engine.

NOTE 4. Eligible for export as follows subject to inspec-
 tion for equipment specified in Chapter XII of Inspec-
 tion Handbook: (Feb. 15, 1938)

- (a) Canada - Landplane
 Skiplane - not eligible.
- (b) All other countries.

NOTE 5. Placard front cockpit as follows: "When operated
 as single place airplane, pilot must occupy rear seat."

NOTE 6. All aircraft also eligible with C.G. limits of
 (+11.0) and (+16.3) provided an elevator bungee is
 installed in accordance with Ryan Dwg. SK-257, change C,
 and the elevator cables are adjusted to provide exactly
 29° up travel and approximately 26° down travel.

NOTE 7. Eligible for use in acrobatic stages of Civilian
 Pilot Training secondary course when operated in accord-
 ance with "Instructions for the Operation of Ryan ST-A
 in the Acrobatic Stages of the Civilian Pilot Training
 Secondary Course" issued by Civilian Pilot Training.

RYAN ST-A SPECIAL, 1 OR 2 PO-CLM, ATC 681

| | |
|----------------|---|
| Engine | Manasco Pirate C4S |
| Placard limits | Maximum, except take-off 28.5 in. Hg., 2260 rpm (125 hp) Take-off (one minute) 31.0 in. Hg., 2260 rpm (125 hp) |
| Propeller | Maximum permissible diameter 106 in. |
| Placard speeds | Level flight or climb 123 mph True Ind. Glide or dive 156 mph True Ind. |
| Fuel capacity | 24 gals. (Fuselage tank at 24 gals.) (-10.5) |
| Oil capacity | 3 gals. (-27) |
| No. pass. | None or 1 (+14.5) (Crew 1 or 2 (+14.5, +65)) (See NOTE 6) |
| Baggage | 40 lbs. (Single compartment between cockpits) (+31) |
| Weights | Empty Use actual (Approx. 1046 lbs. (+6) as 2 POLM with Class I items only) Standard 1600 lbs. |
| C.G. limits | (+10.5) and (+14.7) (Measured horizontally with engine bearers level) (See NOTE 7) |
| Spec. basis | Approved Type Certificate No. 681 |
| Serial Nos. | 121, 141 and up mfrd. prior to 7-24-41 eligible. Approval expired as of that date. |

EQUIPMENT: (Datum is wing leading edge) (* Means net increase)

| | |
|---|--------------------------|
| Class I: | |
| 101. Wheel streamlines | 15 lbs. (+3) |
| 102. 3 in. wheels (Goodyear 3MBA, 3LMBA or 3LMBM) with brakes and 18x8-3 tires | (-2) |
| 103. (a) Front seat cushion | 3 lbs. (+14.5) |
| (b) Rear seat cushion | 3 lbs. (+65) |
| 104. Wiring for position lights | |
| 105. 8 in. streamline tail wheel | (+170) |
| 106. Partial span split trailing edge flaps, manually operated | |
| 107. Elevator trailing edge tabs, manually operated | |
| 108. Oil radiator (G & O No. 326511) 7 lbs. | (-26) |
| 109. Propeller - wood | (-62) |
| Class II: | |
| 200. Miscellaneous items as noted in approved weight and balance report. | |
| Class III: | |
| 301. Fuel capacity increased 18 gals. - auxiliary fuel tank installed on front seat (eliminates provision for passenger) (See NOTE 2) | 18 lbs. (+14.5) |
| 302. (a) Fuel pump, hand wobble (Type D-2) | 6 lbs. (-27) |
| (b) Extra fuel system, etc. | 12 lbs. |
| 303. Front cockpit cover | 8 lbs. (-6) |
| 304. Parachutes - one or two | 20 lbs. each |
| 305. Cockpit inclosure | 21 lbs. (+39.5) |
| 306. Starter | |
| (a) Electric (Eclipse Y-150) incl. cables | 25 lbs. (-21) |
| (1) Bonding and shielding | 3 lbs. |
| (2) Booster and solenoid | |
| 307. Extra instruments (Manifold pressure, bank and turn, climb, altimeter) | (+41.5) |
| 308. Dual controls (removable type) | 4 lbs. (-8) |
| 309. Battery (Reading 6ARL9) | 28 lbs. (+31) |
| 310. Radio receiver (RCA AVR-7 Series) | 18 lbs. (+31) |
| 311. New type wheel streamline lines | Net decrease 6 lbs. (+5) |

5-23907

RYAN ST-A SPECIAL (Continued)

NOTE 1. Placard fuel selector valve as follows:

"Always take-off and land with fuel feeding from reserve."

NOTE 2. When item 301 is installed, installations of items 302 (a) and (b) and 303 are required.

NOTE 3. This model same as model ST (ATC 541) except for change in engine and items of equipment.

NOTE 4. Deleted May 26, 1938.

NOTE 5. Eligible for export as follows subject to inspection for equipment specified in Chapter XII of Inspection Handbook; (May 26, 1938)

(a) Canada - Lsmdplane

Skiplane - not eligible.

(b) All other countries except Australia.

NOTE 6. Placard front cockpit as follows: "When operated as a single place airplane, pilot must occupy rear seat."

NOTE 7. All aircraft also eligible with C.G. limits of (+10.5) and (+16.3) provided an elevator bungee is installed in accordance with Ryan Dwg. SK-257, change C, and the elevator cables are adjusted to provide exactly 29° up travel and approximately 26° down travel.

NOTE 8. Eligible for use in acrobatic stages of Civilian Pilot Training secondary course when operated in accordance with "Instructions for the operation of Ryan Model STA Special in the Civilian Pilot Training Program Secondary Course" issued by Civilian Pilot Training.

ST. LOUIS CARDINAL C-2-65, 2 PCLM, ATC 273

Engine Rearwin LeBlond 60 5D 65 hp
 Fuel 25 gals.
 Oil 6 qts.
 No. pass. 1
 Baggage 14 lbs.
 Standard weight 1450 lbs.
 Spec. basis Approved Type Certificate No. 273
 Serial Nos. 103 and up mfrd. prior to 7-1-33 eligible. Approval expired as of that date.

Class III equipment: Dual controls, no change in weight.

ST. LOUIS CARDINAL C-2-85, 2 PCLM, ATC 350

Engine Rearwin LeBlond 65 5DF 85 hp
 Fuel 27½ gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage 56 lbs.
 Standard weight 1520 lbs.
 Spec. basis Approved Type Certificate No. 350
 Serial Nos. 113 and up mfrd. prior to 9-30-39 eligible. Approval expired as of that date.

ST. LOUIS CARDINAL C-2-90, 2 PCLM, ATC 264

Engine Rearwin LeBlond 90 7D 90 hp
 Fuel 30 gals.
 Oil 3 gals.
 No. pass. 1
 Baggage 15 lbs.
 Standard weight 1557 lbs.
 Spec. basis Approved Type Certificate No. 264
 Serial Nos. 107, 111 and up mfrd. prior to 7-1-33 eligible. Approval expired as of that date.

ST. LOUIS CARDINAL C-2-110, 2 PCLM, ATC 277

Engine Kinner K-5 100 hp
 Fuel 30 gals.
 Oil 3 gals.
 No. pass. 1
 Baggage 14 lbs.
 Standard weight 1563 lbs.
 Spec. basis Approved Type Certificate No. 277
 Serial Nos. C-106, 112 and up mfrd. prior to 7-1-33 eligible. Approval expired as of that date.

SCHRECK 17-HT-4, 4 POFB, 2-113

Engine Hispano 180 hp
 Fuel 27 gals.
 Oil 4 gals.
 No. pass. 3
 Baggage None
 Standard weight 3321 lbs.
 Spec. basis French Airworthiness Certificate
 Serial Nos. 63, 64, 133 and 162 only eligible.
 Class I equipment: Tools, anchor, rope, mooring lights and battery 39 lbs.
 Class III equipment: 44 gal. fuel capacity and 3 or 4 gal. oil capacity, net increase 32 lbs.

SCHWEYER-FLUGZEUGBAU RHONSPERBER (GLIDER), 1 PCLM, 2-7

Type Sailplane
 Placard speeds Auto and winch towing 50 mph (80 km.p.h.)
 Aircraft towing 62 mph (100 km.p.h.)
 No. pass. None
 Baggage None
 Standard weight 550 lbs.
 Spec. basis German Airworthiness Certificate
 Serial Nos. All eligible in accordance with the provisions of NOTE A

Class I equipment: Airspeed indicator.

Class III equipment: Rate of climb; Bank and turn; Altimeter; Parachute 20 lbs.

NOTE A. The German Airworthiness Certificate must be submitted for each individual glider for which application for certification is made and each glider shall be inspected by a C.A.A. inspector.

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AMERICAN (Formerly Security) S-1, 2 POLM, 2-451

Engine Kinner K-5 100 hp
 Fuel 26 gals. (One in fuselage)
 Oil 3 gals.
 No. pass. 1
 Baggage 38 lbs. (None when parachutes are carried)
 Standard weight 1775 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 10 and 11 only eligible
 Class I equipment: Propeller - wood; 6.50-10 wheels and tires with brakes; 6x2½ solid tire-full castoring tail wheel.

AMERICAN (Formerly Security) AIRSTER S1A, 2 POL-SM, ATC 521

Engine Kinner K-5 100 hp
 Fuel 23½ gals. (One in fuselage)
 Oil 3 gals.
 No. pass. 1
 Baggage Compt. in fuselage in rear of cockpit
 - Landplane 50 lbs.
 - Seaplane 73 lbs. (incl. anchor and rope 23 lbs.)
 Standard weight Landplane 1775 lbs.
 Seaplane 1936 lbs.
 Spec. basis Approved Type Certificate No. 521
 Serial Nos. 12 and up mfrd. prior to 7-1-36 eligible. Approval expired as of that date. (See NOTE 1)

EQUIPMENT: (* Means net increase)

Class I:

(a) Landplane

101. Propeller - wood (fixed pitch)
102. 6.50-10 wheels with brakes
103. 6 in. tail wheel with solid tire (full castoring)
104. Folding wing mechanism

(b) Seaplane

161. Edo I-1835 floats with water rudder

Class III:

301. Exhaust collector ring
 - (a) Landplane 20 lbs.
 - (b) Seaplane 12 lbs.
302. Adj. metal propeller (Seaplane only) 12 lbs.*
303. Heywood starter 25 lbs.

NOTE 1. Seaplanes must have dural strips installed on rear edge of each wing (in front of aileron) and 1/2 inch added to leading edge of aileron by means of a dural false leading edge properly blocked in at the ends and hinge openings with wooden blocks secured in place. Serial Nos. 12 to 23 must have mfr's affidavit of conformity submitted when certificated as seaplane.

SIMPLEX RED ARROW, 2 POLM, ATC 43

Engine Kinner K-6 100 hp
 Fuel 35 gals.
 Oil 5 gals.
 No. pass. 1
 Baggage --
 Standard weight 1592 lbs.
 Cert. basis Approved Type Certificate No. 43
 Serial Nos. 11 to 31 eligible. Approval expired as of 7-1-32.

SIMPLEX W-2-S, 2 POLM, ATC 238

Engine Warner Scarab Series 28,29,30 or 40 125 hp
 Fuel 44 gals.
 Oil 3 gals.
 No. pass. 1
 Baggage None
 Standard weight 1779 lbs.
 Cert. basis Approved Type Certificate No. 238
 Serial Nos. 28, 30, 35 to 42 eligible. Approval expired as of 7-1-32.

SIoux COUPE 60, 2 POLM, 2-81

Engine Velie M-5 65 hp
 Fuel 18 gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage 23 lbs.
 Standard weight 1400 lbs.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 210 and up mfrd. prior to 7-1-40 eligible. Approval expired as of that date.

SIoux COUPE 90, 2 POLM, ATC 331

Engine Lambert R-266 90 hp
 Fuel 25 gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage 25 lbs.
 Standard weight 1548 lbs.
 Cert. basis Approved Type Certificate No. 331
 Serial Nos. L-301 and up mfrd. prior to 7-1-33 eligible. Approval expired as of that date.

NOTE 1. Also eligible with revised tail surfaces of increased area.

SIoux COUPE 90-B, 2 POLM, ATC 414

Engine Warner Scarab Jr. Series 40 or 50 90 hp.
 Fuel 25 gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage 30 lbs.
 Standard weight 1522 lbs.
 Cert. basis Approved Type Certificate No. 414
 Serial Nos. 401 and up mfrd. prior to 7-1-33 eligible. Approval expired as of that date.

SIoux COUPE 90-C, 2 POLM, 2-356

Engine Warner Scarab Series 28,29,30 or 40 125 hp
 Fuel 25 gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage None (40 lbs. may be carried when no passenger is carried)
 Standard weight 1580 lbs.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 402 only eligible
 Class I equipment: Airwheel installation.

SKYLARK 3, 2 POLB, 2-469

Engine Michigan Rover 75 hp
 Propeller Fixed pitch wood
 Fuel 22 gals. (One tank in center section)
 Oil 2 gals.
 No. pass. 1
 Baggage 4 lbs.
 Standard weight 1451 lbs.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial No. 3020 only eligible

NOTE 1. Same as model Driggs Skylark 3, ATC No. 303 (expired).

SKYLARK 3-95, 2 POLB, 2-281

Engine American Cirrus Hi-Drive Mark III 95 hp
 Fuel 22 gals.
 Oil 2 gals.
 No. pass. 1
 Baggage 50 lbs.
 Standard weight 1535 lbs.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 18, 3015, 3016 and 3017 eligible.

SKYLARK 3-95, 2 POLB, 2-567

(Remodeled by Northern Air Service, Grand Rapids, Mich. See NOTE 1)

Engine American Cirrus Hi-Drive Mark III
 Fuel 72 min. octane (CFR) aviation gasoline
 Engine limits For all operations, 2100 rpm (95 hp)
 Airspeed limits Level flight or climb 110 mph True Ind.
 Glide or dive 131 mph True Ind.

Propeller Wood (fixed pitch)
 C.G. range (-7.70) to (-1.85)
 Datum L.E. of lower wing
 Standard weight 1535 lbs.

No. pass. 1
 Baggage 50 lbs.
 Fuel capacity 22 gals.
 Oil capacity 2 gals.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial No. 3016 only eligible.

NOTE 1. Same as model 3-95, 2-281, except revised vertical fin, rudder and elevator; installation of sliding hatch; revised rear fuselage shape.

NOTE 2. The following placard must be prominently displayed: "For intentional acrobatics - aircraft must be flown solo from rear seat only, cockpit hatch full open."

SKYLARK 3-95A, 2 POLB, 2-369

Engine DH Gipsy 85 hp
 Fuel 17 gals.
 Oil 2½ gals.
 No. pass. 1
 Baggage 20 lbs.
 Standard weight 1449 lbs.
 Cert. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 19 and 20 only eligible.

SLINGSBY KIRBY KITE (GLIDER), 1 POLM, 2-10

Type Class I
 Airspeed limits Glide or dive 108 mph; Airplane tow (T.I.A.S.) 60 mph; Auto-winch tow 50 mph.
 C.G. range (+63.5) to (+69.3)
 Datum Nose of glider
 Standard weight 495 lbs.
 No. seats 1 at (+38)
 Baggage None
 Serial Nos. elig. All in accordance with provisions of NOTE A.
 Required equipment Item 401
 Cert. basis British Certificate of Airworthiness
 Interior equipment
 401. Airspeed indicator 1/4 lb. (+26)
 402. Altimeter 1/4 lb. (+26)
 403. Compass 1/4 lb. (+26)
 404. Ball bank 1/4 lb. (+26)
 405. Variometer 1/8 lb. (+26)

Miscellaneous equipment (Not listed above)
 600. Misc. items as noted in approved wt. & balance report.

NOTE A. Prior to original certification, a British Certificate of Airworthiness for Export must be submitted for each individual glider and each glider must satisfactorily pass: (a) An inspection for airworthiness; (b) Check of flight characteristics (subject to waiver).

NOTE 1. Weight and balance report incl. list of equipment incl. in certificated empty weight must be submitted for each glider with original inspector's report and each subsequent report covering a change in equipment.

NOTE 2. The following placards must be installed in full view of the pilot:
 (a) "Inverted Flight Prohibited."
 (b) "Instrument Flight Prohibited."
 (c) "Minimum Weight of Occupant and Parachute ___ lbs."
 (d) "Maximum Weight of Occupant and Parachute ___ lbs."
 (e) and (d) to be determined from the weight and balance computations.

SPARTAN C2-60, 2 PO-CLM, ATC 427

Engine Jacobs L-3 55 hp
 Fuel 15-1/2 gals.
 Oil 1-1/2 gals.
 No. pass. 1
 Baggage 20 lbs.
 Standard weight 1215 lbs.
 Spec. basis Approved Type Certificate No. 427
 Serial Nos. J-2 and up mfrd. prior to 9-30-39
 eligible. Approval expired as of
 that date.

Class I equipment: Adj. metal propeller
 Class III equipment: Wood propeller, net decrease
 12 lbs.; Coupe top 20 lbs.

NOTE 1. The following placard must be placed on the
 instrument panel in full view of the pilot and on
 the airworthiness certificate: "INTENTIONAL ACROBATIC
 MANEUVERS WITH THIS AIRPLANE ARE PROHIBITED."

SPARTAN C2-165, 2 POLM, 2-408

Engine Wright R-540 175 hp
 Fuel 31 gals.
 Oil 2-1/2 gals.
 No. pass. 1
 Baggage 19 lbs. (Pay load includes 2 para-
 chutes 20 lbs. each)

Standard weight 2140 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. D-1 and D-2 only eligible.
 Class I equipment: Hand starter 20 lbs.; Turn and
 bank indicator 8 lbs.; Wobble pump 5 lbs.; Adj.
 metal propeller.

Class III equipment: Blind flying hood over rear
 cockpit 4 lbs.

SPARTAN C-3, 3 POLB, ATC 71

Engine Siemens Halake SH-12 128 hp
 Fuel 50 gals.
 Oil 5 gals.
 No. pass. 2
 Baggage None
 Standard weight 2203 lbs.
 Spec. basis Approved Type Certificate No. 71
 Serial Nos. 60, 61, 63, 64, 65, 68, 69, 70, 71 and
 72 eligible. Approval expired
 7-1-32.

SPARTAN C3-3, 3 POLB, 2-77

Engine Curtiss Challenger R-600 185 hp
 Fuel 68 gals.
 Oil 5 gals.
 No. pass. 2
 Baggage None
 Standard weight 2606 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 101 and up mfrd. prior to 7-1-40
 eligible. Approval expired as
 of that date.

SPARTAN C3-5, 3 POLB, 2-79

Engine Wright R-540 175 hp
 Fuel 61 gals.
 Oil 5 gals.
 No. pass. 2
 Baggage 50 lbs.
 Standard weight 2587 lbs.
 Spec. basis Aero. Bulletin 7A, Section 3
 Serial Nos. 101 and up mfrd. prior to 7-1-40
 eligible. Approval expired as of
 that date.

SPARTAN C3-120, 3 POLB, ATC 73

Engine Walter NZ 120 hp
 Fuel 50 gals.
 Oil 4 gals.
 No. pass. 2
 Baggage —
 Standard weight 2191 lbs.
 Spec. basis Approved Type Certificate No. 73
 Serial Nos. 56, 62, 66, 73 to 507 eligible.
 Approval expired 7-1-32.

SPARTAN C3-165, 3 POLB, ATC 195

Engine Wright R-540 175 hp
 Fuel 50 gals.
 Oil 5 gals.
 No. pass. 2
 Baggage 30 lbs.
 Standard weight 2618 lbs.
 Spec. basis Approved Type Certificate No. 195
 Serial Nos. 110, 111, 112, 117, 118, 119, 120 to
 155 eligible. Approval expired
 7-1-32.

Class III equipment: 15 gal. fuselage fuel tank, net
 increase 17 lbs.

SPARTAN C3-225, 3 POLB, ATC 286

Engine Wright R-760 250 hp
 Fuel 60 gals.
 Oil 6-1/2 gals.
 No. pass. 2
 Baggage 40 lbs.
 Standard weight 2750 lbs.
 Spec. basis Approved Type Certificate No. 286
 Serial Nos. A-1 to A-14 eligible. Approval expired
 7-1-32.

Class III equipment: Glass windshield 5 lbs.; Engine ring
 cowl 20 lbs.; Hand inertia starter 25 lbs.

SPARTAN C4-225, 4 PCLM, ATC 310

Engine Wright R-760 250 hp
 Fuel 85 gals.
 Oil 6 gals.
 No. pass. 3
 Baggage 100 lbs.
 Standard weight 3515 lbs.
 Spec. basis Approved Type Certificate No. 310
 Serial Nos. B-1 to B-5 eligible. Approval expired
 7-1-32.

SPARTAN C5-301, 5 PCLM, ATC 389

Engine P&W Wasp Jr. A 300 hp (See NOTE 1)
 Fuel 85 gals.
 Oil 7-3/4 gals.
 No. pass. 4
 Baggage 125 lbs.
 Standard weight 4175 lbs.
 Spec. basis Approved Type Certificate No. 339
 Serial Nos. H-1 and up mfrd. prior to 9-30-39
 eligible. Approval expired as of
 that date.

Class I equipment: Engine ring cowl; Wheel streamlines;
 Battery; Starter.

NOTE 1. Serial No. H-4 is eligible as Model C5-301-P
 (3 PCLM) with the following specifications:

Engine P&W Wasp Jr. TB
 Placard limits Maximum, except take-off
 27 in. Hg., 2000 rpm (300 hp)
 Take-off (one minute)
 29 in. Hg., 2000 rpm (300 hp)
 Placard speeds Level flight or climb 130 mph Ind.
 Glide or dive 174 mph Ind.
 Fuel 114 gals. (4 tanks, one at 15 gals.
 and one 42 gal. tank in each
 wing)
 Oil 7-3/4 gals.
 No. pass. None (Crew 3)
 Baggage None (Pay load includes 60 lbs. for
 3 parachutes)

Standard weight 4175 lbs.

Class I equipment: Engine ring cowl 25 lbs.; Starter;
 Wheel streamlines 38 lbs.; 9.50-10 wheels; 10x3
 tail wheel with 12x4 tire; Battery 38 lbs.; Heater;
 Propeller - adj. metal 90 lbs.

SPARTAN 7W (Army UC-71), 5 PCLM, TC 628

| | |
|----------------|---|
| Engine | P & W Wasp Jr. SB with one 4 1/2 N and one 9 N damper (See also item 222) |
| Placard limits | Maximum, except take-off |
| Fuel | (S.L.) 30.0 in.Hg., 2200 rpm (330 hp) |
| 80 min. out. | ((5000 ft.) 28.8 in.Hg., 2200 rpm (330 hp) |
| (See NOTE 3) | (9600 ft.) 27.5 in.Hg., 2200 rpm (330 hp) |
| 87 min. out. | Take-off (one minute) |
| (See NOTE 3) | 36.5 in.Hg., 2300 rpm (450 hp) |
| Propeller | Max. permissible dia. 103 in. (For clearance) |
| Placard speeds | Level flight or climb 211 mph True Ind. Glide or dive 257 mph True Ind. Flaps extended 125 mph True Ind. |
| Fuel capacity | 112 gals. (5 tanks - 2 fuselage under floor 16 1/2 gals. ea. (+59.5), 2 in wings 32 gals. ea. (+42), one in fuselage 15 gals. (-10.5) |
| Oil capacity | 7 gals. (-21) |
| No. pass. | 4 (1 at +24, 1 at +58, 2 at +70) (Crew +24) |
| Baggage | 100 lbs. (+98) |
| Weights | Empty - Use actual (Approx. 2987 lbs. (+23) with Class I items only) Standard - 4400 lbs. (-19.4) and (+29.9) |
| C.G. limits | Leveling lugs between stations 5 and 6 on right side of fuselage |
| Spec. basis | Type Certificate No. 628 (Aero. Bulletin 7A requirements) |
| Serial Nos. | 2, 6 and up eligible per NOTE A and all AAF Nos. of model UC-71 |

EQUIPMENT: (Datum is wing leading edge at rib No. 2)
(Second row rivets outboard from fuselage). (* Means net
increase) (See NOTE 2)

Class I.

| | |
|--|----------------|
| 101. Engine ring cowl | 37 lbs. (-38) |
| 102. Exhaust collector ring (Solar 12-385) | 19 lbs. (-38) |
| 103. Generator (Eclipse D-1) | 25 lbs. (-35) |
| 104. Battery & box (Exide 6TS-13-1) | 43 lbs. (+104) |
| 105. Pressure fire extinguisher (Lux A-1) | 18 lbs. (-12) |
| 106. Propeller - Ham. Std. 2D30 with blades 6095A-12 or -13; 6167A-12 or -13. Dia. 8'6-1/8" max., 8'3-7/8" min. For interchangeable blades see Prop. Spec. No. 206 (NOTE 6). (Low pitch set. 11 1/2" at 42 in. rad.) | 157 lbs. (-62) |
| 107. Carburetor air intake valve | 3 lbs. (-31) |
| 108. Carburetor warm air muff (Solar 12-330) | 3 lbs. (-37) |
| 109. Oil radiator (U.A.P. 6" U-3160) | 18 lbs. (-26) |
| 110. Fuel pump (Hand wobble - Romeo D-2) | 5 lbs. (+26) |
| 111. Wheels | |
| (a) Main - 7.50-10 (Goodyear 10 HEM) with brakes and 8.50-10 6-ply H. D. tires | 70 lbs. (+11) |
| (b) 10.5 in. streamline tail wheel and tire | 7 lbs. (+208) |
| 112. Hydraulic brake cylinders (Goodyear) | 5 lbs. (-5) |
| 113. Landing gear | |
| (a) Retracting mechanism | |
| Manual control (Dwg. 7W418) | |
| Motor (Eclipse Y-150) | 18 lbs. (+7) |
| (b) Shock struts | |
| Main (Cleveland XY262S) | 78 lbs. (+17) |
| Tail (Cleveland XY162S) | 7 lbs. (+204) |
| 114. Control wheel - Throw-over (Dwg. 7W330) | 9 lbs. (+11) |
| 115. Windshield - Plexiglass .20" | 9 lbs. (+9) |

Class II.

| | |
|---|----------------|
| 200. Miscellaneous items as noted under this number in approved weight and balance report. | |
| 201. Starter (Eclipse F-141) | 30 lbs. (-27) |
| 202. Battery (Reading 6AR-9) | 5 lbs. (+104) |
| 203. 4 1/2 min. flares (International MK-1) | 21 lbs. (+106) |
| 204. Oil radiator (Harrison C-2297) Net dec. | 5 lbs. (-33) |
| 205. Fuel pump (Romeo G-2) | 4 lbs. (-34) |
| 206. Engine lubrication - one shot (P & W 25332) | 6 lbs. (-47) |
| 207. Propeller spinner (Dwg. 7W833) | 9 lbs. (-64) |
| 208. Vacuum pump, engine-driven (Romeo RD 2112) | 4 lbs. (-34) |
| 209. Engine shielding (Breeze) | 14 lbs. (-41) |
| 210. 7.50-10 wheels (Hayes 750A) | 8 lbs. (+11) |

SPARTAN 7W (Continued)

| | |
|--|---------------------------|
| 211. Instruments | |
| (a) Mixture analyzer (Cambridge) incl. indicator 2 lbs. (-1) and cells and tubing 5 lbs. (-17) | 7 lbs. (-12) |
| (b) Extra instruments | 29 lbs. (-1) |
| 212. Cabin warm air muff (Solar 11-162) | 2 lbs. (-37) |
| 213. Stabilizer abrasion shoes (Goodrich) | 3 lbs. (+204) |
| 214. Windshield - shatter proof glass | 12 lbs. (+9) |
| 215. Fuel tanks | |
| (a) Two at 30 gals. each (replace two at 16 1/2 gals. each) | 12 lbs. (+75) |
| (b) One at 24 gals. (replaces one at 15 gal.) | 4 lbs. (+10.5) |
| 216. Oil tank - one at 9 gals. (replaces one at 7 gals.) | 1 lb. (-22) |
| 217. Radio installations | |
| Antennas | |
| (a) Retractable (Waller) | 10 lbs. (+99) |
| Reel, fish, leadout | 4 lbs. (+128) |
| Control head & cable | 3 lbs. (+53) |
| Remote control | 3 lbs. (+107) |
| (b) Fixed - Standard receiver | 1 lb. (+118) |
| (c) Fixed - Compass receiver | 2 lbs. (+60) |
| Receivers | |
| (d) (RCA AVR-7 series) | 29 lbs. (+56) |
| Chassis, power supply, support | 20 lbs. (+73) |
| Controls, wiring, filter | 9 lbs. (+16) |
| (e) (RCA AVR-8 series) | 69 lbs. (+68) |
| Chassis, power supply, support | 34 lbs. (+73) |
| Loop | 15 lbs. (+104) |
| Controls & wiring | 20 lbs. (+36) |
| Transmitters | |
| (f) (Waller AB55-47) | 65 lbs. (+52) |
| Chassis, power supply, support | 29 lbs. (+73) |
| Dynamotor | 27 lbs. (+28) |
| Cables, control, microphone | 9 lbs. (+57) |
| 218. Parachute seats | Use actual weights & arms |
| 219. Parachutes | 20 lbs. (+24, +58, +70) |
| 220. Control wheel | |
| (a) Throw-over (Dwg. 7W310) Net dec. | 1 lb. (+11) |
| (b) Fixed - dual (Dwg. 7W340) | 4 lbs. (+11) |
| 221. Constant speed propeller control installation (incl. control unit 5 lbs. (-34) and Shakespeare C-2164-C flexible control 2 lbs. (-12) | 7 lbs. (-28) |
| 222. P&W Wasp Jr. SB-2 engine with one 4 1/2 N and one 9 N damper | 13 lbs. (+41) |
| 223. Toe brake installation | 5 lbs. (-5) |
| Class III. | |
| 301. Landing lights (a) (Grimes ST-260) | 7 lbs. (+27.5) |
| (b) (Grimes ST-1000) | 11 lbs. (+27.5) |
| 302. Puncture proof tubes | 10 lbs. (+11) |

NOTE A. Each aircraft of model 7W manufactured after Oct.
20, 1941, for civil use, must, prior to original certifi-
cation, satisfactorily pass:

- (a) An inspection for workmanship, materials and conform-
ity before any covering, metal priming or final finish
is applied. All woodwork may be varnished.
- (b) A final inspection of the completed aircraft.
- (c) A check of flight characteristics.

NOTE 1. Eligible for export to all countries except Canada,
Australia and New Zealand, subject to inspection for equip-
ment specified in Chapter XII of Inspection Handbook.

NOTE 2. Weight and balance report including list of equip-
ment included in certificated weight empty, and loading
instructions when necessary, must be submitted for each
aircraft with original inspector's report and each subse-
quent report covering change in such equipment.

- NOTE 3.**
- (a) Mark main fuel tank fillers:
"80 octane minimum."
 - (b) Mark auxiliary fuel tank fillers:
"80 octane minimum."
 - (c) Mark reserve fuel tank filler:
"87 octane minimum."
 - (d) Mark fuel selector valve accordingly.