

DEPARTMENT OF COMMERCE
 CIVIL AERONAUTICS ADMINISTRATION

A-768
Revision 34
CESSNA
120
140
March 31, 2003

AIRCRAFT SPECIFICATION NO. A-768

Manufacturer Cessna Aircraft Company
 Wichita, Kansas

I - Model 140, 2 PCL-SM, Approved March 21, 1946 (See NOTE 5 for 1948 version)

Engine	Continental C-85-12 or C-85-12F (See Items 105, 107 and 109 for optional engines)		
Fuel	73 min. octane aviation gasoline		
Engine limits	For all operations, 2575 rpm (85 hp)		
Airspeed limits	Landplane:	Level flight or climb	115 mph (100 knots) True Ind.
		Glide or dive	140 mph (122 knots) True Ind.
		Flaps extended	82 mph (71 knots) True Ind.
	Seaplane:	Level flight or climb	105 mph (91 knots) True Ind.
		Glide or dive	140 mph (122 knots) True Ind.
		Flaps extended	82 mph (71 knots) True Ind.
C.G. range	Landplane:	(+13.5) to (+17.7)	
	Seaplane :	(+13.7) to (+17.5)	
Empty weight C.G. range	Landplane:	(+12.3) to (+14.7) Item 402 not installed.	
		(+12.3) to (+14.1) when Item 402 is installed.	
	Seaplane :	(+12.7) to (+14.7) Item 402 not installed.	
		(+12.7) to (+14.2) when Item 402 is installed.	
	Ranges are not valid when Item 606, C.G. shifter, is installed or for any non-standard arrangement except as noted. When empty weight C.G. falls within the proper range, computation of critical fore and aft C.G. positions is unnecessary.		
Maximum weight	Landplane or skiplane:	1450 lbs.	
	Seaplane (with item 206a):	1556 lbs.	
No. seats	2 (+19.5) See Item 402 for jump seat.		
Maximum baggage	80 lbs. (+37.5)		
Fuel capacity	25 gals. (Two 12.5 gal. tanks) (+23)		
Oil capacity	4.5 or 5 qts. (-31.5)		
Control surface movements	Elevator	Up 20°	Down 20°
	Elevator tab	Up 6°	Down 33°
	Rudder	Left 16°	Right 16°
	Aileron	Up 22°	Down 14°
	Flaps		Down 40°
	Stabilizer	Fixed	
Serial Nos. eligible	8001 and up		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 4a, the following items of equipment must be installed:		
	(Landplane): Items 1, 201(a), 202(a), 403, 601		
	(Seaplane) : Items 2, 206(a), 403, 601		
	(Skiplane) : Items 1, 202, 204, 403, 601		

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II - Model 120 , 2 PCL-SM, Approved March 28, 1946 (See NOTE 5 for 1948 version)

(Same as Model 140 except for equipment installation; wing flaps not installed)

Engine	Continental C-85-12 or C-85-12F (See Items 105, 107, and 109 for optional engines)		
Fuel	73 octane aviation gasoline		
Engine limits	For all operations, 2575 rpm (85 hp)		
Airspeed limits	Landplane	Level flight or climb	115 mph (100 knots) True Ind.
		Glide or dive	140 mph (122 knots) True Ind.
	Seaplane	Level flight or climb	105 mph (91 knots) True Ind.
		Glide or dive	140 mph (122 knots) True Ind.
C.G. range	Landplane:	(+13.5) to (+17.7)	
	Seaplane :	(+13.7) to (+17.5)	
Empty weight C.G. range	Landplane:	(+12.3) to (+14.7) Item 402 not installed. (+12.3) to (+14.1) when Item 402 is installed.	
	Seaplane :	(+12.7) to (+14.7) Item 402 not installed. (+12.7) to (+14.2) when Item 402 is installed.	
		Ranges are not valid when Item 606, C.G. shifter, is installed or for any non-standard arrangement except as noted. When Empty weight C.G. falls within the proper range, computation of critical fore and aft positions is unnecessary.	
Maximum weight	Landplane or skiplane:	1450 lbs.	
	Seaplane (With item 206a):	1556 lbs.	
No. seats	2 (+19.5)	See Item 402 for jump seat.	
Maximum baggage	80 lbs. (+37.5)		
Fuel capacity	25 gals. (Two 12.5 gal. tanks) (+23)		
Oil capacity	4.5 or 5 qts. (-31.5)		
Control surface movements	Elevator	Up 20°	Down 20°
	Elevator tab	Up 6°	Down 33°
	Rudder	Left 16°	Right 16°
	Aileron	Up 22°	Down 14°
	Stabilizer	Fixed	
Serial Nos. eligible	8003 and up		
Required equipment	In addition to the pertinent required basic equipment specified in CAR 4a, the following items of equipment must be installed: (Landplane) : Items 1, 201(a), 202(a), 403 (Seaplane) : Items 2, 206(a), 403 (Skiplane) : Items 1, 202, 204, 403		

Specifications Pertinent to all Models

Datum	Leading edge of wing
Leveling means	Top edge of sheet along fuselage side aft of doors
Certification basis	Type Certificate No. 768 (CAR 4a)
Production basis	Production Certificate No. 4
Export eligibility	Eligible for export to all countries subject to the provisions of MOP 2-4 except as follows: (a) Canada - Landplane, seaplane and skiplane eligible

Equipment: A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

Approval for the installation of all items of equipment listed herein has been obtained by the aircraft manufacturer except those items preceded by an asterisk (*). The asterisk denotes that approval has been obtained by other than the aircraft manufacturer. An item marked with an asterisk may not have been manufactured under a CAA monitored or approved quality control system, and therefore attention should be paid to workmanship and conformity with pertinent data called for in this specification.

Propellers and Propeller AccessoriesFor C-85 Engine Installation

1. Propeller - Sensenich 74FC-47, 74FC-49, 74FK-47 or 74FK-49 or any other approved fixed pitch wood propeller which is eligible for the engine power speed and which meets the following limits:
Static rpm at max. permissible throttle setting:
Not over 2160, not under 1885.
No additional tolerance permitted.
Diameter: Not over 74 in., not under 72 in.
Not eligible on seaplane models. 11 lbs. (-50)
2. Propeller - fixed pitch metal - McCauley 1A90-CF, 1A90-CH or 1B90-CM 22 lbs. (-50)
Static rpm at max. permissible throttle setting:
(a) Landplane: Not over 2300 not under 2100.
(b) Seaplane : Not over 2225 not under 2200.
No additional tolerance permitted.
Diameter: Not over 71 in., not under 69.5 in.
3. Propeller - Controllable - Beech R002-101 or R003-100 hub with 30 lbs. (-50)
R003-201-75 to -72; R003-225-75 to -72; R003-231-75 to -72; or
R003-232-75 to -72 blades.
(Eligible on landplane only)
Static rpm at max. permissible throttle setting:
Not over 2325, not under 2250.
No additional tolerance permitted.
Pitch settings at 27 in. sta.: Low 13°, High 19°.
Includes Beech mechanical propeller pitch control.
When this item is installed on 1947 version (See NOTE 3 for description),
trailing edge of engine cowling must be flared and metal roll attached to
bottom portion of firewall per Cessna Dwg. 0450103 or equivalent.
- *4. Propeller-ground adjustable-Hartzell HA-12U with 7414, 7214, or 7214M 18 lbs. (-50)
blades. Static rpm and diameter limits same as for fixed pitch wood propeller.
- *5. Propeller-automatic-Koppers Aeromatic F200 with 00-73E or 00-73F blades 30 lbs. (-50)
(Eligible on landplane only)
Parts List Assembly No. 4312. Low pitch setting 11° measured at 24 in. sta.
Static rpm at max. permissible throttle setting:
Not over 2575, not under 2475.
No additional tolerance permitted.
Diameter: Not over 73 in., not under 71.5 in.
When this item is installed, installation and operation must be accomplished in
accordance with Koppers' "Installation Procedure and Operating Limitations" No. 2B.
Cooling flap, Koppers' Dwg. No. 3323 or equivalent, must be installed on
1947 version 120 and 140 airplanes when this item is installed.
- *6. Propeller - fixed pitch metal - Sensenich M76AK-2 23 lbs. (-50)
Static rpm at max. permissible throttle setting: Not over 2290, not
under 2190. No additional tolerance permitted.
Diameter: Not over 74 in., not under 72.5 in.
- *7. Propeller - fixed pitch metal - Sensenich M74CK-2 21 lbs. (-50)
(Eligible on landplane only.)
Static rpm at max. permissible throttle setting: Not over 2250, not
under 2150. No additional tolerance permitted.
Diameter: Not over 72 in., not under 70.5 in.
- *8. Propeller - Sensenich Hydraulic Controllable C2FB1 with PC-276A7 blades 27 lbs. (-50)
Pitch settings at 27 in. sta.: Low 8.5°, High 14.5°
Diameter: Not over 76 in., not under 74.5 in.

For C-90 Engine Installation:

11. Propeller - Sensenich 72RK-56, 74FK-51 or any other fixed pitch wood propeller which is eligible for the engine power and speed and which meets the following limits: 11 lbs. (-50)
 Static rpm at max. permissible throttle setting:
 Not over 2160, not under 1835.
 No additional tolerance permitted.
 Diameter: Not over 74 in., not under 70.5 in.
 (Eligible on landplane only)
12. Propeller - fixed pitch metal - McCauley 1A90-CF, 1A90-CH or 1B90-CM 21 lbs. (-50)
 Static rpm at max. permissible throttle setting:
 (a) Landplane: Not over 2350, not under 2050.
 (b) Seaplane : Not over 2350, not under 2150.
 No additional tolerance permitted.
 Diameter:
 Landplane: Not over 71 in., not under 69.5 in.
 Seaplane : Not over 73 in., not under 69.5 in.
- *13. Propeller - automatic - Koppers Aeromatic F200 with 00-73E blades. 30 lbs. (-50)
 Parts List Assembly No. 4340. Low pitch setting 12.5 degrees at 24 in. sta.
 Static rpm at max. permissible throttle setting:
 Not over 2475, not under 2425.
 No additional tolerance permitted.
 Diameter: Not over 73 in., not under 71.5 in.
 When this item is installed, installation and operation must be accomplished in accordance with Koppers "Installation Procedure and Operating Limitations" No. 32.
 (Eligible on landplane only).
- *14. Propeller - Flottorp-Beech controllable metal hub R003-100 with 30 lbs. (-50)
 R003-232-72T blades (For interchangeable blade models see Propeller Specification No. P-804 (NOTE 6))
 Static rpm at max. permissible throttle setting:
 Not over 2400, not under 2300.
 No additional tolerance permitted.
 Pitch settings at 27 in. sta.: Low 13°, High 19°.
 Diameter: Not over 72 in., Not under 70.5 in.
 (Eligible on landplane only).
 With this installation the following engine limits are applicable:
 Maximum continuous, 2475 rpm (90 hp)
 Take-off (Five minutes), 2625 rpm (95 hp)

For either C-85 or C-90 Engine Installation:

- *15. Propeller spinner, Aviaid Metal Products Model 100140 (Eligible with 2 lbs. (-50)
 Items 2 or 12)

Engine and Engine Accessories - Fuel and Oil System

101. Starter (Delco-Remy 1109656) 16 lbs. (-25)
 102. Carburetor air cleaner 3 lbs. (-45)
 104. Winterization equipment 2 lbs. (-35)
 105. Continental C-90-12F or -14F engine Use actual weight
 See NOTE 5 for limits and installation data
- *106. Oil filter - Fram PB-5 installed in accordance with Fram Corp. 4 lbs. (-21.5)
 Dwg. 61528. Eligible on only those aircraft equipped with exhaust manifolds incorporating muffler assemblies.
107. Continental C-85-14F engine Use actual weight
 Limits same as for C-85-12F engine
 New engine mount, Cessna Dwg. 0451111, necessary when this engine installed.

- *108. Controllable cowl flaps 2 lbs. (-24)
- (a) SerVair Accessories, Model SAC-100, installed in accordance with installation instructions dated November 8, 1950, supplied by SerVair Accessories, P.O. Box 557, Williston, North Dakota. Eligible on Serial Nos. 11843 through 14364 unless Item 3, 5, or 105 installed.
- (b) SerVair Accessories, Model SAC-100A installed in accordance with installation instructions dated November 8, 1950, Amendment No. 1 dated January 24, 1951, supplied by SerVair Accessories, P.O. Box 557, Williston, North Dakota. Eligible on Serial No. 14365 and up unless Item 3 or 5 installed.
- *109. Lycoming O-235-C1 engine Use actual weight
- Eligible on Model 120 and 140 landplanes with the following limits:
- Fuel 80 min. octane aviation gasoline
- Engine limits For all operations, 2600 rpm (108 hp)
- Propeller Sensenich M76AM-2 with the following limits:
- Static rpm at max. permissible throttle setting:
- Not over 2340, not under 2240
- No additional tolerance permitted
- Diameter: Not over 74 in., not under 72.5 in.
- Oil capacity 6 quarts (-29.5)
- Installation must be accomplished in accordance with McKenzie Aircraft Repair, 1300 North 27th, Springfield, Oregon Installation Instructions and Drawing L149-0600-244, Sheet 2, dated September 10, 1955; utilizing components listed in Parts List dated September 10, 1955. CAA Approved Airplane Flight Manual Supplement dated October 18, 1955 for Cessna 120-140 landplane required when this engine is installed.

Landing Gear

201. Two main wheel-brake assemblies, 6.00-6, Type III: (See NOTE 4 re variation in arms) (+2)
- (a) Goodyear Model L6HBD
- Wheel Assembly No. 511413-M
- Brake assembly No. 9520292
- (1) with 6.00-6 4 ply rating tires & tubes 34 lbs.
- (2) with 7.00-6 4 ply rating tires & tubes 36 lbs.
- (3) with 8.00-6 4 ply rating tires & tubes 44 lbs.
- (b) Goodyear Model LF6HBD
- Wheel Assembly No. 511960-M
- Brake assembly No. 9520517
- (1) with 6.00-6 4 ply rating tires & tubes 31 lbs.
- (2) with 7.00-6 4 ply rating tires & tubes 33 lbs.
- (3) with 8.00-6 4 ply rating tires & tubes 41 lbs.
- (d) Goodyear Model CL6HBM (Castering)
- (Wheel Brake Assembly No. 9540234 and 5)
- Wheel Assembly No. 9530242 and 3
- Brake assembly No. 9530368 and 9
- Installed in accordance with Cessna Dwg. No. 0441150
- (1) with 6.00-6 4 ply rating tires & tubes 48 lbs.
- (2) with 7.00-6 4 ply rating tires & tubes 50 lbs.
- (3) with 8.00-6 4 ply rating tires & tubes 58 lbs.
202. Tail wheel and tire
- (a) Scott 3-24B 5 lbs. (+201)
- (b) Scott non-steerable, full swiveling 4 lbs. (+201)
- * (c) Lang (formerly Decker) D-501 steerable 7 lbs. (+201)
- (Pacific Coast Aircraft Dwg. A-550)
- * (d) Scott 3200, steerable, swiveling 8 lbs. (+201)
- (Installed in accordance with Scott Bulletin No. I-168)
- * (e) Maule SFS-1-2-P87 lbs. (+201)
- (f) Goodyear Model 95-0843 8-inch wheel with pneumatic tire in accordance with Cessna Dwg. No. 0542110 6 lbs. (+201)
203. Tail wheel and tire, Maule SFS-1-2 6 lbs. (+201)

204. Two skis (See NOTE 4 re variation of arms)
- (a) Federal A-1500 according to Cessna Dwg. 0441102 or Federal Instal. Dwg. 11R245 32 lbs. (-1)
- * (b) Woychik R-1 according to Woychik Aircraft Equipment (Middleton, Wisc.) Dwg. 1, 2, 3 (22 psi tire pressure required.) 42 lbs. (-1.5)
- * (c) Federal A-1500A, Federal A-1500A, Federal Instl. Dwg. 11R245 Use actual wt. change
- * (d) Federal A-1850, Federal Instl. Dwg. 11R245 Use actual wt. change
- * (e) Federal A-2000, Federal Instl. Dwg. 11R245 Use actual wt. change
- * (f) Federal A-2000A, Federal Instl. Dwg. 11R245 Use actual wt. change
- * (g) Federal CA1850-6, Federal Instl. Dwg. 11R245 Use actual wt. change
- * (h) Federal AWA-1500 Wheel-Ski, Federal Instl. Dwg. 11R395 +35 lbs.
- Eligible with mechanical conversion on ground only. Retracted Extended
- Not eligible with Item 201(a)(3) or 201(b)(3) installed. (0) (+3.5)
- Note: Weight and balance of aircraft shall be checked with ski in retracted and extended position.
- * (i) Call S2, S6 or S7 according to Call Dwg. 1004 and 1014 Use actual wt. change
- * (j) Federal AWB-1500 Wheel-ski, Federal Instl. Dwg. 11R549 76 lbs.
- Eligible with hydraulic conversion on ground and in flight. Retracted Extended
- Not eligible with Item 201(a)(3) or 201(b)(3) installed. (-4.5) (-2)
- Note: Weight and balance of aircraft shall be checked with ski in retracted and extended position.
- Placard required: "Do Not Extend or Retract Skis While in Motion on the Ground."
- * (k) Federal AWB-1500A Wheel-ski, Federal Instl. Dwg. 11R896. 84 lbs.
- Eligible with hydraulic conversion on ground and in flight. Retracted Extended
- Not eligible with Item 201(a)(3) or 201(a)(3) installed. (-4.5) (-2)
- Note: Weight and balance of aircraft shall be checked with ski in retracted and extended position.
- Placard required: "Do Not Extend or Retract Skis While in Motion on the Ground."
- * (l) Woychik R-1A, Woychik Dwg. 1 through 5 (32 psi tire pressure required) 58 lbs. (-3)
- * (m) Federal AWB-2100 Wheel-ski, Federal Instl. Dwg. 11R1100. 93 lbs.
- Eligible with hydraulic conversion on ground and in flight, Retracted Extended
- Not eligible with Item 201(a)(3), 201(b)(3) or 201(d)(3) installed. (-5) (-1.5)
- Note: Weight and balance of aircraft shall be checked with ski in retracted and extended positions.
- Placard required: "DO NOT EXTEND OR RETRACT SKIS WHILE IN MOTION ON THE GROUND."
- * (n) Wesco Skis, Western Aircraft Equipment Co. Dwg. 11 and 148.
- (1) A-15 46 lbs. (-4)
- (2) A-20 48 lbs. (-4)
- (3) A-25 69 lbs. (-5)
- (4) AS-2 50 lbs. (-4)
- (5) AS-2A 62 lbs. (-5)
- (6) AS-2B 64 lbs. (-5)
205. Tail ski, Federal AT-1500 3 lbs. (+198)
206. Float installation
- (a) Two Edo 88-1650 according to Cessna Dwg. No. 0440111 208 lbs. (+13)
- * (b) Two Edo 92-1400 according to Edo Dwg. 06704 and 06822 174 lbs. (+14)
- This item eligible for approval for a maximum weight of 1474 lbs. only and with propeller Item 12 and engine Item 105 only.
207. Two main wheel streamlines per Cessna Dwg. 0441143 6 lbs. (+2)
- (Kit No. 52-3-102). See NOTE 4 re eligibility and arms.
208. Landing gear adaptor plate, Cessna Parts 0441147, 52-3-115 or 52-3-116. 5 lbs. (+1.5)
- See NOTE 4 re eligibility and arms.
- * 209. Two Decker C-200 wheel pants per Decker installation instructions and Dwg. 2A. See NOTE 4 re eligibility and arms. 9 lbs. (+3)
- * 210. Two Consolidair model 16 wheel fenders per Consolidair Dwg. No. 0026. 8 lbs. (+2)
- See NOTE 4 re eligibility and arms.

- *212. Geisse Safety Gear installed according to St. Louis Machine Co. Dwgs. 1 and 2 and instructions dated May 5, 1953 (revised October 8, 1953.)
With 1948 landing gear spring, Cessna Dwg. 0441149, arm is (-3).
This item not eligible with items 201(d), 204, 205, 206, 207, 208, 209, or 210 installed. 12 lbs. (0)
- *213. Two "no drag" wheel fenders per Liquid Tool Co., Box 299, Morrow, Ohio, Dwg. 105. 8 lbs. (+3)

Electrical Equipment

301. Generator (Delco-Remy 1101876) 10 lbs. (-25)
302. Battery - 12 Volt 24 amp. hr. 24 lbs. (+56)
303. Landing light - Grimes G-3602 and installation 6 lbs. (+15)
304. Omitted.

Interior Equipment

401. Cabin heater 3 lbs. (-26)
402. Jump seat installation, Cessna Dwg. 0413202 6 lbs. (+44)
When this item is installed, the compartment must be placarded for the weight of passenger or baggage as determined by weight and balance computations except that the total weight shall not exceed 80 lbs. C.G. of passenger in jump seat is at (+44)
403. CAA Approved Airplane Flight Manual (optional nomenclature: "Approved Operating Limitations") and pertinent revisions applicable to the particular model and serial number. Tentatively approved Airplane Flight Manuals in use up to and including the 1947 version aircraft are acceptable without replacement.
404. Blind flight cover, Cessna Dwg. 0413267 4 lbs. (+5)

Miscellaneous (Not listed above)

601. Wing flaps (Model 140 only) 6 lbs. (+55)
602. International flares, 3 Mark I - 1 1/2 minute 18 lbs. (+48)
603. Airspeed static outlet installation on fuselage
604. Auxiliary seaplane fin, Cessna Dwg. 0431144 3 lbs. (+107)
605. Omitted
- *606. Weight shifter, Aircraft Devices model CGS-7 per Campbell Dwg. Nos. 4042, 355 and 356
Rear C.G. limit with weight shifter in aft position is (+18.4) and with weight shifter in fwd. position is (+17.7). Maximum allowable baggage** is limited for each aircraft as determined by weight and balance check with the weight shifter in either the fwd. or aft position whichever is critical. The following placards shall be installed:
(1) "Maximum Baggage ** lbs" (on baggage compartment).
(2) "Intentional Spins Prohibited with Shifter Weight in Rear Position as Indicated by Red Cable." (In full view of pilot)
FWD. AFT
19 lbs. (+57.1) (+144.5)
- *607. Y-1 sprayer installed in accordance with Yingling Aircraft Inc., Wichita, Kansas, Dwg. No. Y-1 and installation instructions. 82 lbs. (+10)
- *608. Installation of dorsal fin in accordance with Consolidated Aircraft Repair, Inc., Ft. Wayne, Indiana, drawing entitled "Dorsal Fin, Increased Effective Area of Fin is 0.61 Sq. Ft., Aircraft Modification to Improve Directional Stability." 2 lbs. (+149)
- *609. Blister windows are eligible when in conformance to the Don L. Meyers Company, P.O. Box 993, San Mateo, California, installation instructions and either Drawing No. 70-10-50 or No. 122953. Use actual weight change
- *610. Woychik retractable lifting handles, Woychik Aircraft Equipment, Middleton, Wisc., Dwgs. 50 & 50A. 13 ozs. (+118)
- *611. Metal Plating of Wings Use actual weight change
Models 120 and 140 are eligible for certification when wings are covered with metal skin per Technical Instruction Report No. 1401 by Birtcraft Engineering Co., 11836 Cherry Ave., Inglewood, California.
- *612. Metal wing skin installed in accordance with Ruleto Industries, Inc., 4823 Rosecrans Avenue, Hawthorne, California, Dwgs., Nos. R-1013, R-1014 and R-1015 and Installation Instructions CKW-1 and CKW-2. Use actual weight change
- *613. Metal Skin installed in accordance with Met-Co-Aire, Fullerton, California, Drawing No. 6108. Use actual weight change

NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions, when necessary, must be in each aircraft at the time of original certification and at all times thereafter

(except in the case of air carrier operators having an approved weight control system).

NOTE 2. The following placards must be displayed in full view of the pilot:

- (a) Model 140 - "Intentional Spins with Flaps Extended Prohibited."
- (b) Seaplane if Item 604 is installed - "Intentional Spins Prohibited."
- (c) "This Airplane to Be Operated in Accordance with the Flight Limitations of the Operations Manual." (Refers to Item 403, Airplane Flight Manual.)
- (d) For aircraft with Item 204(j) or (k) installed - "Do Not Extend or Retract Skis While in Motion on the Ground."

NOTE 3. The 1947 Version (Model 140 - Serial Nos. 11843 through 14364; Model 120 - Serial Nos. 11843 and up) has revised cowling; instrument panel, exhaust manifold which incorporates silencer, relocated engine primer and primer lines. When Beech controllable propeller (Item 3) is installed on the 1947 version, the trailing edge of engine cowling must be flared and a metal roll attached to the bottom portion of the firewall. The flared cowling trailing edge and roll on firewall are optional with fixed pitch wood and metal propellers.

NOTE 4. When Item 208 or 1948 version landing gear spring, Cessna Dwg. 0441149, is installed, the main wheels are moved 3 inches forward, changing the arms of Items 201, 207 and 210 from (+2) to (-1); the arm of Item 204(a) from (-1) to (-4); the arm of Item 204(b) from (-1.5) to (-4.5); the arm of Item 204(h) from (0) to (-3) for retracted position and from (+3.5) to (+0.5) for extended position; the arms of 204(j) and (k) from (-4.5) to (-7.5) for the retracted position and from (-2) to (-5) for the extended position; the arm of Items 209 and 213 from (+3) to (0).

Item 207, 209 or 210 is not eligible when Item 201(a)(2) or (3), 201(b)(2) or (3), or 208 is installed. Item 204(h), (j) or (k) is not eligible when Item 201(a)(3) or 201(b)(3) is installed. Item 201(d) is not eligible with Item 204(either), 207, 208, 209 or 210. Item 208 is not eligible with Item 204(either) or with revised landing gear spring, Cessna Dwg. 0441149.

NOTE 5. The C-90-12F or C-90-14F engine is eligible for installation on the Models 120 and 140 landplanes and seaplanes with the following special limitations which are standard for the 1948 version:

Engine	Continental C-90-12F or C-90-14F (Item 105)
Fuel	80 min. octane aviation gasoline
Engine limits	For all operations, 2475 rpm (90 hp)
Oil capacity	5 or 6 quarts (Integral) (-31.5)
Required equipment	
(Landplane)	Items 11, 201, 202(a), 403, 601 (Model 140 only)
(Seaplane)	Items 12, 206, 403, 601 (Model 140 only)

When the Continental C-90-12F engine is installed, it is necessary for Cessna 0450240 blast tube assembly and Cessna 0452183 lower cowl assembly with Cessna 0452208 lower cowl bottom doubler or the equivalent to be installed. In addition, when the C-90-14F engine is installed, new engine mount, Cessna Dwg. 0451111, is required.

NOTE 6.

"WARNING: Use of alcohol-based fuels can cause serious performance degradation and fuel system component damage, and is therefore prohibited on Cessna airplanes."

...END....