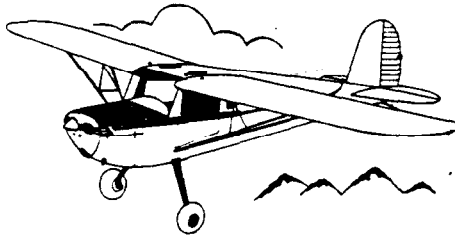


International

Cessna 120/140



Association

APRIL 1981

BOX 92 • RICHARDSON, TEXAS 75080

ISSUE 41

☆ Coming Attractions ☆

May 15, 16, 17 - Horn Point Aerodrome
near Cambridge, MD.

13th Annual Antique Aircraft Association Fly-In

Beautiful grass field with three runways on the scenic eastern shore of Maryland. This Fly-In is sponsored by one of the largest AAA Chapters in the country. Contact Curley Owens, Eastern Regional Co-ordinator, (301) 544-0122, or 525 Lakeview Circle, Severna Park, Md 21146.

This a great opportunity for you eastern members to get out of the patch and enjoy what sounds like a beautiful week-end!

May 16, 17 - Mineola, TX Aircoop Fly-In

May 17 - Canton, IL - Ingersol Airport

The Fulton County Flying Club has extended an invite to the 120/140 Association to attend the Annual Fly-In Breakfast. A great chance for Mid-west 120/140 members to get together!

June 12-14 - Denton, TX - Texas AAA Chapter

Contact Robert W. Landrun, Fly-in Chairman, (214) 946-7863. Must be National member to compete for awards.

June 13-14 - Owosso, MI - 5th Annual EAA Michigan Chapters Regional Fly-In.

Motel, Cafe right on runway. Sounds like a good one for you Michiganders!

June 20-21 - Fredricksburg, VA - Shannon Airport

14th Annual Antique Aircraft Assn. Fly-In and Airshow.

June 26-28 - Airdrie Airport, Calgary, Alberta, Canada

Located eight miles north-northeast of Calgary International Airport. This Fly-In was so great last year that the Airdrie Country Club of the Air is sponsoring a "Wild Rose Antique/Classic Fly-In." How's about all you Snow Birds making this one. Contact George Pendlebury, 304 Manora Road N.E., Calgary, Alberta, T2A 4R6 (403) 272-4383.

August 1-8 - OSHKOSH!

August 16-23 - Annual AAA/APM Fly-In at Antique Airfield, Blakesburg, IA

Contact AAA, Rt. 2, Box 172, Ottumwa, IA 52501 for details.

September 25-27 - Tahlequah, OK - 24th Annual Tulsa Fly-In

Contact J. C. Treager, (918) 245-6910.

October 9-10-11 - THE INTERNATIONAL CESSNA 120/140 ASSOCIATION ANNUAL MEETING AND FLY-IN !!!

Make your plans NOW. This is a must event for all 120/140s!

EAA Postpones Tullahoma '81 Fly-In. Operational considerations stemming from the EAA's planned future move to a new headquarters facility at Oshkosh, WI and other factors have forced postponement of this year's EAA fall Tullahoma, TN convention scheduled for September 30-October 4. "A great deal of excitement and enthusiasm has been generated for the new facility and we want to continue the momentum throughout 1981," said Poberezny. "Since 1979 Tullahoma has grown steadily and successfully under the leadership of many chairmen and dedicated volunteers. There has been a tremendous amount of enthusiasm and support throughout the southeast for this fall classic. We look forward to returning Tullahoma to the EAA fly-in circuit when priorities and conditions permit," stated the EAA president.

• • • STC • • •

"As a follow-up to our notice to you of January 23, 1981, we are pleased to inform you that the FAA has just amended our STC SA547EA to include the Cessna Model 120. It is now possible to modify the Cessna 120, 140 and 140A for the Continental O-200-A engine using the same procedure.

"In addition, so that more owners can take advantage of this conversion, we are establishing a price of \$50.00 for all of the instructions, flight manual information and STC authorization."

John T. Lucas, RD 2, Sylvan Heights, Emporium, PA 15834; David Emmett, P.O. Box 299, Yanceyville, NC 27379.

HELP-HELP-HELP

I am looking for a landing light assembly for my C-140, c/n 10449, originally N76055, now N110X, and also I need a Goodyear brake disc. The defective light has been deferred for better than 15 annuals and it's time to return it to usefulness. I am a new member, #622 and look forward to the newsletter, and also this summer's fly-ins! Hopefully, Michael Litalien, 3572 Pheasant Run, Apt. 7, Ann Arbor, MI 48104, (313) 971-8954.

Allan McDonald, RR #1, Rio, Wisconsin 53960 sez that he has a 1946 C-140 that he would like to keep original. However, shining aluminum is an impossible job, Allan sez. Either that or he is doing something wrong! He has tried MET-ALL by hand and with an off-set buffer to no avail. Oh, maybe a square foot on one door shined a little. The last Sunday of Oshkosh a 140 from California landed at Portage, WI and it had a nice shine to it. The pilot told some people there he sold the stuff that made it shine! Now all Allan has to do is find the pilot! HELP-HELP, sez Allan.

(Ed note: Could that be BLUE MAGIC the pilot was selling? We have several members, with arms like an Orang-utan who could, if they would, write doctorate dissertations about polishing the flanks of a 140! We herewith appeal to their better natures to help us out, lest we lead one astray through lack of experience; a lack we must admit we enjoy.)

"I am looking for a usable vertical fin for a 1948 C-140. Also, I have a usable 140 fuselage for \$250, and some other cabin area parts for sale. The fuselage is slightly damaged but would be fine for a rebuild project. Jerry S. Evans, 609 Sherwood, Richardson, TX 75080, (214) 783-9362.

• Service Bulletin • Continental Aircraft Engine

13 April, 1976

SUBJECT: Intake Valve Change

MODELS AFFECTED: C75, C85, C90, O-200 and GO-300

Engine testing, both in the laboratory and in the field, has shown that with the use of higher leaded fuel, service life of the intake valves can be significantly improved by introducing the following changes:

1. New valve and seat angle of improved sealing.
2. New valve seat material to minimize erosion.

P/N 641792-Intake Valve and P/N 641793-Intake Valve Seat Insert are being incorporated into all engines manufactured by Teledyne Continental Motors. The valves may now be procured through TCM distributors.

(Ed note: Ask for M76-8 FAA-DER Approved Service Bulletin from your TCM overhaul shop if you wish to take advantage of the new valves and seats.)

Service Bulletin M78-4, 25 January 1978:

SUBJECT: Silk Thread

MODELS AFFECTED: C-65, C-75, C-85, C-90

We wish to announce the availability of silk thread as is commonly required during assembly of Teledyne Continental Motors Aircraft Engines. The thread is available from your local TCM distributor as TCM Part Number 641543.

Installation procedures as detailed in the applicable overhaul manuals should always be practices. **Nylon, cotton or other thread materials should never be substituted.**

Service Bulletin M77-10, 17 March, 1977

SUBJECT: Currently active factory approved spark plugs

The following is a list of only the most active spark plugs. Additional listings can be found in FAA and spark plug manufacturer's data.

A .015-.018 inch gap is optional with the .019-.022 inch gap. The larger gap is generally preferred for improved starting and idling characteristics.

	Mfr's No.	Shielded	Unshielded	I. M. E. P.	
				Rating	Engine
AC	HSR-83P	X		260	C-85/C-90/O-200
Spark Plug Co.	HSR-93	X		260	Same
	HSR-88	X		215	Same
	A-88		X	215	Same
	SR-83P	X		260	Same
Champion	EM41-E	X		200	Same
	C27-S	X		200	Same
	D41N		X	200	C-85/C-90
	EM41N	X		200	C-85/C-90/O-200
	REM40E	X		230	Same
	RHM40E	X		230	Same
	REM38P	X		280	Same
	RHM38P	X		280	Same

Where more than one heat range is listed, the colder plug is recommended unless extended low power operation or engine condition results in spark plug fouling. The higher the IMEP rating, the colder the plug.

M77-3, 11 January, 1977

Numerous customer inquiries have been received regarding the use of alternate fuels in TCM engines. The limited availability of 80/87 octane fuel has demanded increased utilization of higher grade fuels.

The American Society for Testing and Materials (ASTM) has recently revised ASTM D910-70, the Standard Specification for Aviation Fuels. The new specification, D910-75 re-identifies the three current grades of aviation fuel as Grade 80, Grade 100,

and Grade 100LL (low lead). The three grades replace those fuels commonly known as Grade 80/87 and Grade 100-130.

The following table provides a comparison of the current and previous fuel specs.

SPECIFICATIONS								
ASTM D910-70			ASTM D910-75			MIL-G-5572E AMEND. 3		
Grade	Max TEL		Grade	Max TEL		Grade	Max TEL	
	ML/US Gal.	Color		ML/US Gal.	Color		ML/US Gal.	Color
80/87	0.50	Red	80	0.50	Red	80/87	0.50	Red
91/96	2.00	Blue	Discontinued					
			100LL	2.00	Blue			
100/130	3.00	Green	100	3.00	Green	100/130	3.00	Green
115/145	4.60	Purple				115/145	4.60	Purple

The amount of tetraethyllead in these higher grade fuels has increased the lead build up and fouling of spark plugs along with valve erosion incidents reported on some lower compression engines.

Those TCM engines most affected include the A65, A75, C-75, C-85, C-90, C-125, C-145, O-200 series. (Ed note: see M76-8, 13 April, 1976)

SPARK PLUG LEAD FOULING: Spark plug lead fouling increases when higher leaded fuels are used in engines originally certificated on 80/87 octane fuel. Such fouling can be reduced by more frequent spark plug cleaning and spark plug rotation. Fine wire spark plugs that are FAA approved for use in those TCM engines listed may further alleviate fouling problems. In any case, the rotation of plugs every 50 hours of operation and cleaning/rotation every 100 hours is recommended. A ground run at 800 to 1000 RPM of 60 to 90 seconds duration just prior to shutdown will allow temperature stabilization and burnout of deposit accumulated during letdown and taxiing. Mixture cutoff should be accomplished at this RPM without returning to idle.

EXHAUST VALVE STICKING: Exhaust valve sticking can result from lead salt (sulfated ash) accumulation in the lubricating oil. It is recommended that regular 50 hour oil changes be implemented to reduce such accumulation. A few stuck exhaust valves have been reported where examination of the cylinder assembly revealed an exhaust leak between the exhaust elbow flange and the exhaust port face. This condition created localized cylinder overheating and subsequent exhaust valve and guide distress.

The exhaust system should be inspected every 100 hours and leaks corrected prior to continued engine operational service.

The following identifies the fuels considered acceptable for use in TCM engines provided the foregoing recommendations are implemented: SERIES; C85, C90, C125, C145 — SPECIFIED FUEL — 80/87; ALTERNATE FUEL — 100LL. The O-200 uses the same fuels.

Note: The use of Grade 100LL is highly recommended when the specified fuel is not available, however, Grade 100 may be used for limited operation when Grade 80 or 100LL is not available.

USE OF AUTOMOTIVE FUEL IN TCM AIRCRAFT ENGINES: TCM does not recommend or authorize the use of automotive fuels in any of their aircraft engines. The engine warranty and pro rata policy will be voided if such fuels are utilized. Fuels must conform to ASTM-D910 or MIL-G-5572E, if satisfactory engine service life is anticipated.

Automotive fuels can contain additives that act as corrosive agents, formulate gum deposits and, therefore, increase combustion chamber deposits. Continued operation on automotive fuel can lead to detonation, pre-ignition and sticking or eroded valves.

(Continued on Page 3)

Service Bulletin - Cont.

The vapor pressure of automotive fuels exceeds that allowable for aviation fuels. This increased vapor pressure increases the tendency to vapor lock at higher altitudes. A vapor lock condition can cause complete power loss.

The use of any fuel that does not conform to the above specifications may cause cylinder assembly, valve, piston and/or piston ring damage/failure.

(My Word! That bad, eh?)

COMPRESSION TEST: (The following excerpts are taken from M73-19, December 3, 1973) Over the years a compression check has proven to be a valuable inspection tool providing it is done properly and with equipment that is both accurate and clean. On many engines it is now a regular part of the 100 hour inspection and/or annual.

The differential pressure tester is designed to check the compression of aircraft engines by measuring the leakage through the cylinders caused by worn or damaged components. The operation of the compression tester is based on the principle that, for any given airflow through a fixed orifice, a constant pressure drop across that orifice will result.

Unfortunately there have been cases where mechanics have made honest errors or the equipment was faulty and cylinders were removed needlessly. To help you make certain the compression check is done accurately we submit the following information.

CAUTION: Magnetos and fuel must be shut off prior to test to make certain engine cannot accidentally fire.

Perform the compression test as soon as possible after the engine is shut down to ensure that the piston rings, cylinder walls, and other engine parts are well lubricated. Oil and cylinder head temperatures should be in the green arc.

Remove the most accessible spark plug from each cylinder.

With the air valve closed, apply an external source of clean air (approx. 100 to 120 p.s.i.) to tester.

Install an adapter in the spark plug bushing and connect the compression tester to the cylinder.

Adjust the pressure regulator to obtain a reading of 80 p.s.i. on the gauge. At this time, the cylinder pressure gauge should also register 80 p.s.i.

Turn the crankshaft by hand in the direction of rotation until the piston (in the cylinder being checked) is coming up on its compression stroke. Slowly open the air valve and pressurize the cylinder not to exceed 20 p.s.i.

Continue rotating the engine against this pressure until the piston reaches top dead center (TDC). Reaching TDC is indicated by a flat spot or sudden decrease in force required to turn the crankshaft. If the crankshaft is rotated too far, back up at least one-half revolution and start over again to eliminate the effect of backlash in the valve operating mechanism and to keep piston rings seated on the lower ring lands. This is critical because the slightest movement breaks this piston ring sealing and allows the pressure to drop.

CAUTION: Care must be exercised in opening the air valve since sufficient air pressure will be built up in the cylinder to cause it to rotate the crankshaft if the piston is not at TDC. It is recommended that someone hold the propeller during check to prevent possible rotation. (Ain't that right, Frank?)

Open the air valve completely. Check the regulated pressure and adjust, if necessary, to 80 p.s.i.

Observe the pressure indication on the cylinder pressure gauge. The difference between this pressure and the pressure shown by the regulator pressure is the amount of leakage through the cylinder. A loss in excess of 25% of the input air pressure is cause to suspect the cylinder of being defective. However, recheck the readings after operating the engine for at least 3 minutes to allow for sealing of the rings with oil.

NOTE: . . . Do not pull cylinders indiscriminately on the basis of one reading!

The source of air leakage can be determined by listening for

the sound of flowing air at the intake, exhaust and crankcase vent.

Leakage at exhaust signifies bad exhaust valve or foreign material under the valve face.

Leakage at intake signifies bad intake valve or foreign material under the valve face.

Leakage at the crankcase vent signifies broken, stuck or worn piston rings.

If leakage is still occurring after a recheck, it may be possible to correct a low reading by staking the valves. This is accomplished by placing a fiber drift on the rocker arm directly over the valve stem and tapping the drift several times with a hammer to dislodge any foreign material between the valve face and seat.

NOTE: . . . When correcting a low reading in this manner, rotate the propeller so the piston will not be at TDC. This is necessary to prevent the valve from striking the top of the piston on some engines. Rotate the engine before rechecking compression to reseat the valves in the normal manner.

M70-14 - July 22, 1970

SUBJECT: Carburetor Supersession

MODELS AFFECTED: C-90-8F, C90-12F, C90-14F, C90-16F

A newly released (1970) carburetor, TCM P/N 637853, Marvel-Schebler Parts List No. A10-5082, calibrated to reduce peak cylinder head operating temperatures and improve fuel distribution between cylinders, supersedes TCM P/N 627367, Marvel-Schebler Parts List No. A10-4252, on all of the above C90 engine models using this carburetor.

This new carburetor, TCM P/N 637835, is available for replacement on the above engine models subject to installation approval by the Aircraft Manufacturer and the FAA.

M64-6 - January 30, 1964

SUBJECT: Prevention of idling failures on four-cylinder engines

ENGINES AFFECTED: All four-cylinder engines (Continental that is)

REFERENCE: FAA Safety Release No. 338

FAA Safety Release No. 338 discusses at length the causes of idling failures and offers suggestions for minimizing this trouble and little more can be added to this discourse. However, we would like to add the following comments and hints which have resulted from our investigation of this problem.

The acceleration problem seems to be most frequently encountered in outside air temperatures of 32°F. and below. When temperatures in this range are encountered, the pilot must use precaution in opening the throttle in flight after the engine has once been idles. If the throttle is opened suddenly and rapidly, transition from the idle system of the carburetor to the power system is so rapid that the engine is temporarily starved of fuel which might cause possible engine stoppage. However, we found in our tests that in every case where engine stoppage resulted for this reason, the engine could be restarted by one of the following procedures.

1. Return the throttle to the closed position and then open it slowly.
2. Leave the throttle in the wide open position and operate the primer for one or two strokes.

It is also called to your attention that the moment of inertia of a metal propeller is roughly 2½ times that of a wood propeller. This means that the problem of acceleration of this greater mass through the transition period from the idle to the power system of the carburetor is proportionately greater.

Our data further indicates that in two minutes after the throttle is closed, with carburetor heat "ON," the carburetor air tem-

(Continued on Page 4)

... AND THIS

"Dear Fellow Cessna 120/140 Fanciers; Enclosed find: 1. Application for membership, 2. A low altitude shot of yours truly doing what he loves best - aviating in old 019, and 3. A check for ten bucks.

019 is based at Granior Field, Manchester, NH. She has for company many MU-2s, Barons, a Citation or two, King Airs, several Bell Rangers, and dozens of 150s and 172s. Two spots away N73044, a 140 owned by Gil Bineau, a member, and once owned by some guy named Frank Kingston Smith. (The 140, that is.)

"I learned to fly in 1974, starting in a TR-2 and finishing in a 150. While on my honeymoon we spent our first night at King's Grant Inn, ¼ mile from the runway at Taconia, NH. After breakfast next morning we strolled down to the aerodrome and there under some birch trees sat my first airplane licking her wounds from the last owner who on his third day of ownership forgot he was in his first taildragger, landed wheels on, hit the brakes and flipped into a six-foot snow bank. (He

bought a 172 after settling with the insurance adjuster.)

"After haggling with the insurance company for several months the A & P and I patched her up and before the eyes of a crowd that had gathered to watch the A & P hang the trees with aluminum, flew her back to Taconia to fix her up for himself. Several months later I struck a bargain with the A & P for my first airplane! She got new main gear, a new left wing tip, new upholstery, new paint, a fresh annual. I sold my '75 Buick convertible which I was going to keep forever to pay the bill.

"We've now logged some 350 hours over the past two years. There is no other airplane except a P-51. On 1-21-80 we stubbed our toes in some frozen snow while taxiing with a lot of power. I now have a McCauley prop with 360 degree tips hanging in my office! The shaft is OK, but it's tough waiting for a new prop."

(Stay in there Bob, you'll get the hang of it yet!)
-Bob Prescott

• • PREZ SEZ • •

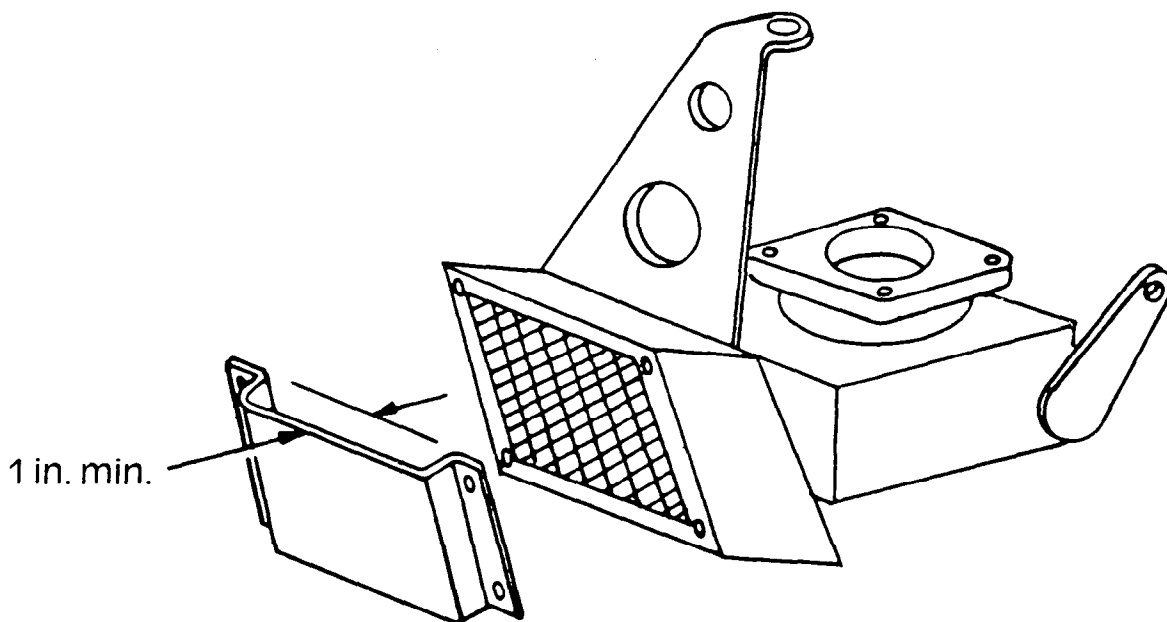
"After a phone call I received from Glenn Usher the other evening, I was left with mixed emotions. I was, of course, elated that I have the opportunity to serve as President of our Association for the balanced of Jerry Vaught's term. But also, sad at losing a very dedicated and sincere individual that worked very hard for the expansion and betterment of our group. (I should say Family--that's the impression that was left with me from our Wichita gathering.)

I met Jerry for the first time in Wichita and from talking with him and other members I found he was well deserving of his elected post, not because he had been such a driving force in his immediate area, but throughout the region in promoting and organizing.

On behalf of the Family Worldwide wish to say thanks to you Jerry, and we are looking forward to seeing you in Indiana in October, if not before.

Bill Cardiff, Prez.

Service Bulletin - Cont.



perature can drop as much as 72°. This makes it obvious that in extended glides with closed throttle, power should be applied momentarily at frequent intervals in order to supply some heat to the carburetor air heater.

The foregoing is intended as helpful information to be remembered and applied whenever necessary. However, it is always a good safety measure to have a mechanical aid to help combat idling failures and we therefore refer you to the sketch illustrated above showing the suggested baffle arrangement which is very simple and can be very easily and economically made up and installed over the standard air filter. Our tests have indicated that this arrangement gives improved acceleration characteristics and minimizes the possibility of engine stoppage on sudden opening of the throttle.

1. Baffle metal must be stiff enough to prevent inward deflection toward the filter.
2. Note that a minimum distance of 1 inch must be maintained between baffle and filter as shown.

(Ed note: we would like to thank Frank Rittersbacher for sending us the preceding information. We realize that some of it is a bit heavy going, however one can get a bit of the "flavor" of what's happening up front. Part of our purpose is to transmit information about the internal workings of our birds. They are getting a bit long in the tooth you know. Only by constant inspecting, tinkering, and TLC will they remain airworthy. We sure do appreciate the help you members send in. Keep up the good work!)

• • • AD • • •

March 23, 1981

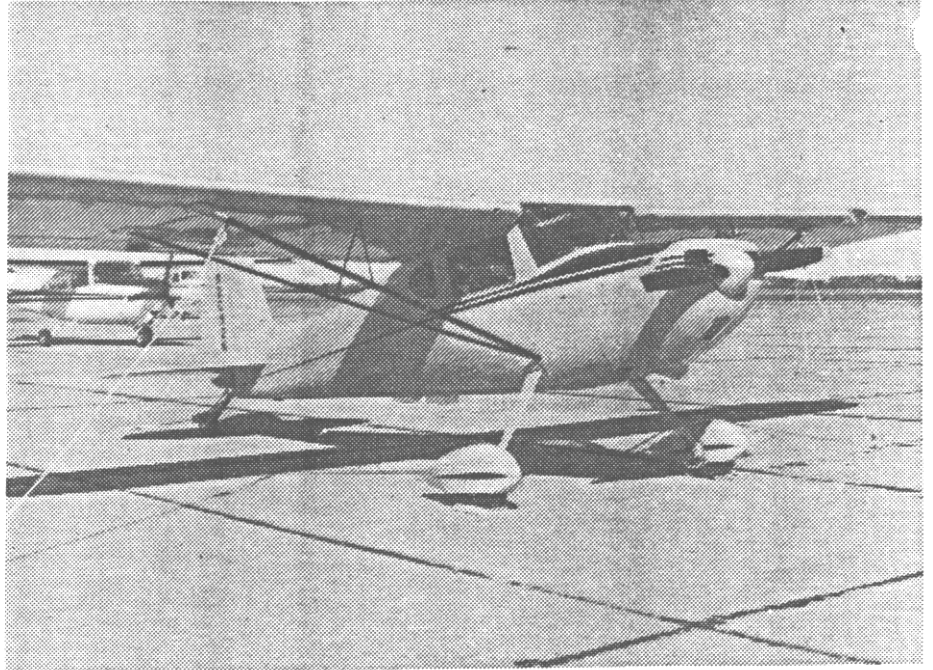
Airworthiness Directive 81-07-06 Tele-Dyne Continental Motors: Amendment 39-4071. Applies to Continental A65, A75, C75, C85, C90, A-100, C125, and O-200 series engines with AC fuel pumps, TCM part number 40585, 40695 or 631391 installed. Compliance required within 30 days after the effective date of this AD, or within the next 25 hours time in service after the effective date of this AD, whichever occurs first, unless already accomplished within the last 12 months and at intervals not to exceed 12 months after the last inspection. To prevent fuel starvation due to fuel flow restriction through the pump screen accomplish the following:

- a. Remove safety wire and bolt from the fuel pump top cover. Discard fiber washer under bolt.
- b. Remove the fuel pump top cover. Discard cork cover gasket.
- c. Remove fuel pump screen.
- d. Inspect the fuel pump and fuel pump screen for contamination.
 1. If contaminated, clean fuel pump and fuel pump screen.
 2. If fuel pump is damaged by corrosion, replace with an applicable serviceable fuel pump.
 3. If fuel pump screen is damaged by corrosion or handling, replace with a serviceable fuel pump screen, TCM p/n 642913.
- e. Reinstall fuel pump screen, fuel pump cover with new cork cover gasket, TCM p/n 633915 and new bolt gasket p/n 643914. Torque bolt to 30 ± 5 inch pounds.
- f. Resafety wire fuel pump top cover bolt and check for leaks.
- g. Make the appropriate maintenance record entry.

An equivalent method of compliance may be approved by the Chief, Engineering and manufacturing Branch, Federal Aviation Administration, Southern Region.

Teledyne Continental Motors Service Bulletin M81-8, dated March 9, 1981, per-

ONE OF THE BEST ...



Ralph Campbell's "Most Modified" 140 at the Wichita Fly-In.

tains to this subject.

In case you are wondering, some of us may have fuel pumps installed, particularly on C90s and O-200s. The pump is optional equipment, replace the standard induction carburetor, and is an AC diaphragm type. So check 'em out to be in compliance with the AD.

Don't be smug, you with the carburetor with no fuel pump! Does your bird sit in an unlevel position, nose up or down or one wing lower than the other? If so, beware, because you too can have problems. Fuel tank's low points, where the sumps are, will shift and make it impossible to drain all the contaminants even if they are drained regularly during preflight.

Needless to say the low tank will get a little yeasty! So, know your fuel system. It's very simple, but can't keep functioning in good fashion without some care.

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International Cessna 120/140 Association

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