

“JUST A LITTLE TRIP AROUND THE PATCH”

THE GASCAP STORY:



THE CULPRIT, THE SILICONE VALVE

The Hazard for 120/140 Planes:

If the half-vented gas cap meant for use only on the 140A to comply with the Airworthiness Directive is used on the Cessna 120/140 planes, an engine outage on takeoff can occur if other factors are the same as for those who have been subjected to the outage.



Bad Things Continue:

This is an update of a story about the danger of using the gas cap meant for the Cessna 140A and later planes on the earlier Cessna 120 and 140 planes; to use the cap can cause an engine outage, as the story will explain. Recent 2005 Ebay advertisements have stated that the caps meant only for the A planes can also be used on the 120/140's. Not so. There are more Cessna 120 and 140 planes sporting the half-vented gas cap, so all of them are at risk; perhaps they will be as lucky as my friend, but logic says someone will get hurt. So, the story continues and planes continue to be downed.

The Stressful Moments of Terror:

One of our Cessna 120/140 club members and an associate had the exciting and traditional "moment of terror" in his Cessna 140; the scary event led to an altitude loss which permitted the passenger to scan the ratings on the transformers of the power poles, just before they were apparently being forced to land in the street by a sudden power loss. The plane, fully fueled and going for its first flight after some work at this remote foothill airport, was being flown off a field which had a cliff at the end, with the town below some several hundreds of feet. Just off the end of the runway, near the edge of the cliff, the engine quit and a descent toward the streets of the town below was started because there was no other place to go. After the pilot did all the recommended things, the engine caught just above the power poles along the streets, a climb was made, and a safe landing was a quick "next".

The Cause:

After landing, the distraught FBO who had done the plane work met the plane as it taxied in since he had been delightedly observing the plane take off, had heard the engine stop, and had, with horror, noted the quick sink toward the town below. Knowing that stopped engines often mean fuel problems, he hopped up on a stepladder after the plane stopped. He removed the gas caps in turn and when the half-vented gas cap on the right tank was removed, a moaning sigh was apparent to the bystanders-----the tank had not been vented during the exciting half of the flight and a vacuum developed as the fuel was used until there was more vacuum in the tank than the hydraulic head of fuel could overcome. Fortunately, there was only one of the new half-vented gas caps on the plane and the emergency switchover to the tank vented with the standard two-hole cap allowed full fuel flow and recovery before the lower elevation landing that seemed so imminent only lifetime-long seconds before.

The new half-vented cap had been a mandated addition at the recent annual at a different airport, supposedly to comply with the airworthiness directive 79-10-14 r1. Upon inspection, it was concluded that the red silicone "valve" of the new-style gas cap had not allowed any air to flow into the tank; the silicone valve had done its job but the vacuum created by not opening was not enough to force it open though it was enough to halt fuel from getting to the carburetor. The fury of the owner and the FBO after the event was aimed at both the failure of the gas cap and at the aircraft inspector at the home field who had refused to sign off the recent annual until that airworthiness directive (AD) had been complied with. (I am going to use AD to mean Airworthiness Directive since "ad" is easily confused with the ad of advertisement).



The owner had not been aware of the specifics of the airworthiness directive, (not being an owner of a 140A, he would not have been sent the AD) but who was he to argue with an FAA certificated aircraft inspector, one who is supposed to know what AD belongs to what airplane, one who received prime pay to be correct? This time, the Chief Airworthiness Inspector (AI) was wrong, and he misapplied the AD, turning aside the plea that a Cessna 140A is a different beast than the owner's Cessna 140. Since there was no admonishment in the AD or with the gas cap manufacturer's literature (subsequently found that none were with any cap) about not using the caps on other types of planes, nor any limiting legend on the cap or on its packaging, these participants weren't the first or the last to be misled. The misapplication could have been a catastrophe, though not for the misinformed AI or the people who wrote the AD or the maker of the new cap.

Every time this event of loss of power and the quick descent is discussed, someone mentions that if the plane had landed or crashed in the street, it would have been another accident totted up to "pilot error" because, by the time the FAA/NTSB fellows did their thing, the stuck tank would have been vented, possibly by being "bent-vented" by a tree trunk.

FAA and Cessna Inaction:

We considered writing a note about the hazard, but to whom and to say what? An extensive article like this with figures was written, and went to Cessna and all the clubs, including Cessna pilot's association, the EAA, the AOPA, and the "big club", the FAA. None responded except for the eventual Cessna note to the International based on my input. One-on-one verbal explanations were incapable of making other owners take remedial action when their 120/140 Cessnas were seen to be using the half-vented caps; would a note like this create corrective action? The input response was very slow but the FAA and Cessna got together and decided that the problem we had input was not worthy of an AD revision (they revise AD's for their own typo errors, but not for "little problems" of actual users). Cessna sent a note to the International club, and that missive was printed in a single Newsletter and no owner who was not a member of the club and all subsequent new owners never received the warning.

The increase of concern was brought on by our seeing more and more of our club 120 and 140 planes showing up with one or two of the half-vented gas cap(s) because the users are unaware of the hazards of them when used on the wrong plane types, since no documentation limits their use and the manufacturer provides no warning about them. When we non--accredited types mentioned to the owners that the adaptation might be a hazard, we got looks that varied between sweet disinterest and disdain—as though someone could possibly get in trouble with a brand new Cessna-dealer-furnished gas cap that sells for a magnificent \$40 and is bright red? How could anything like that hurt someone??? Follow the story and decide for yourself. Many of the installations of the "wrong cap" are due to pressure of an A&X who has mistakenly decided that newer must be better and so insists that the "new style" be installed.

When this was first written, I did not have a digital camera and had never seen the gas cap array for the 14X planes. The next page presents that array, including the two brands of half-vented caps, all three versions of the original non-venting 140A caps, the original two-holer for the 120/140's and the dastardly Monarch which causes the same engine failures as the half-vented caps when used on the 120/140's. The array makes a good reference for all and has nowhere else been presented.

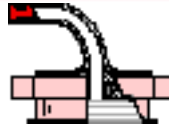
Many ask, after an engine outage caused by the wrong caps: "why did he not know?". There is no resource where an owner can find out any shortcomings of the plane except by reading the applicable AD's.



The original two hole gas cap for the 120/140's

Array of 120/140/140A Gas Caps

Free air/vapor passage with the original cap. The Monarch requires a pressure to open in or out.



Forward-facing cap cutaway (cute) not to be used on the 120/140's except with STC'd Lycoming, causing problems with them



The Monarch cap

The 140A cap, shown incorrectly in the parts manual as the two-hole cap, actually had the two hole cap whose holes were filled with rivets as shown on the left. In the middle, the next generation, still with rivets in the holes but neater. On the right, the final cap with the indents of the spot welding barely visible through the paint and no rivets.



Because the A model has the open vent above the wing and a juncture which joins a tube to both tanks, the cap had to be a zero flow type in order for the ram pressure to not force fuel out of the caps.



The silicone valve, opens in but never out.



Overwing scupper vent joined to the tank-to-tank vent line

And then came reality, about thirty years later. The 1979 AD was issued to counter the fact that if the single top-of-the-wing vent was occluded with bugs or their nests or freezing rain, no fuel would go to the engine. The '79 AD mandated that at least one cap for the 140A be replaced with the half-vented cap shown here to allow vacuum relief if the common vent was plugged. The red silicone "valve" was designed to open and allow air in whenever the pressure of the vacuum was X (never stated and never tested since installation). The silicone valve would not allow any outward venting. Inadequately tested in real life, Cessna, the actual developer, and the FAA missed the fact that the silicone valve could adhere to its seat with such tenacity that it would sometimes not vent inwardly.

The consequence of using the half-vented cap on the 120-140's was sometimes severe, including loss of plane and other lesser ills, such as grossly expanded tnks when the expanding fuel and vapors in the tank could not get out. Although an intense effort was made in '91 to have the '79 AD revised to explicitly exclude the 120/140's, the appeal was denied by the FAA and the mandatory bulletin by Cessna was "sold" to the FAA and quickly disappeared, so the problem of this cap being put on the 120/140's is still evident in '05, often forced on the owner by the FAA sanctioned FBO's mechanic.

In early '05, the other brand of the '79 AD'ed caps were loaned and pictures taken. They appear as at the right, and are marked as made by C.A.P. Note that they have the same silicone valve and are also half-vented. In '05, this brand is the type still being sold by Cessna for \$41, and is often available on ebay for a bit more.

The half-vented caps are sometimes misrepresented as correct for the 120/140's, but they are not and the Monarch cap, if used on the 120/140's, can also cause the engine to quit on climbout.

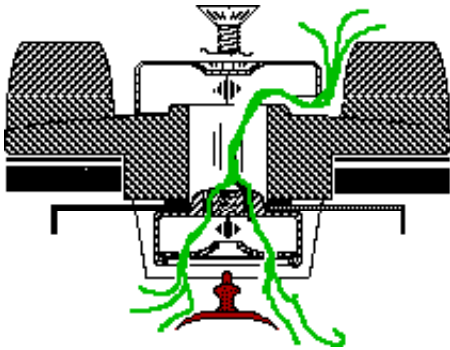


Filed as Gas cap array may '05 Neal cougarnfw@aol.com
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See the full stories on the FTP site

The Half-Vented Mandated Cap:

The text refers to a "half-vented" gas cap though that term will not be found elsewhere; I use that name because that is what it does and no other name so descriptive has appeared in the research. It is "half-vented" in that it allows air inflow to the tank when the vacuum created in the tank by fuel usage exceeds an undefined and never tested value but prevents any outflow of air or fumes or even fuel when the fuel expands from heat and/or altitude. Others call it "the red cap", "the 150 cap", "the cap with the hat" and so on. They (there are two manufacturers) are nicely designed units. The action of the original version appears as something like this representation.



The silicone valve does not move to permit venting until a significant vacuum has been created in the tank by fuel usage. OOPS!! No one knows, and the FAA did not stipulate in the AD what amount of vacuum is needed to make the valve deflect to let air in. Consider going to your plane, attaching a vacuum cleaner to the stem of the gas tank, applying the vacuum, and noting that the flow from the gascolator diminishes until none flows if you apply enough vacuum. Maybe not such a good idea to create a vacuum in a gas tank on a plane designed to NOT have a vacuum in the tank?

Why was the gas cap designed to be one-way or half-vented? The 140A and later Cessnas have three features which the older 120/140/170 planes lacked: 1) a forward-facing common tank vent on top of the wing, 2) a juncture of this common vent to a tube running between tanks to allow sharing the common vent (the last-made 120's and 140's which preceded the 140A's had the tank-to-tank vent tube), plus 3) non-vented gas caps on both tanks. Over the years, enough overwing tank vent blockages occurred, and those led to the airworthiness directive for the Cessna planes starting with the 140A. The blockages were probably caused by a wasp nest or a snow plug or an ice plug in the shared single vent opening.



Properly used on the designated planes, the cure mandated by the AD and solved by the STC'ed half-vented gas cap will be apparent-----the new cap(s) would provide an alternate path for venting inflow of air even if the common external vent is plugged. Mandating only one new cap instead of two was based on the premise that, if one blockage was possible but unlikely, then two vents (the new half-vent cap and the original common vent) would surely make a blockage statistically very unlikely. Don't think about the facts that they have never been tested, even on the 140A's.

The airworthiness directive 79-10-14 r1 states (paraphrased) "...To provide an alternate source of fuel tank venting in case of...vent obstruction by foreign material and/or sticking of the fuel vent valve.....this can be accomplished by the vented fuel caps or other approved methods (none listed).....". Note that the AD calls the new caps "vented fuel caps" as though they are full-vented. Some owners believe the silicone valve somehow will vent both ways, and that concept is shared by a disproportionate number of the A&X's who continue to recommend this wrong cap for the wrong airplanes because they, too, believe the "vented fuel caps" as saying "vents both ways" even though it does not!

Do you see the trap? It is made up of three things: a) the new mandated gas caps were half-vented, which means that they will let air in if the vacuum created by fuel usage is great enough, given that the valve in them is faultless, b) the gas caps are supposed to be used only on the 140A's of our group, but that was not made crystal clear either by the AD or the manufacturer of the cap and c) club members are unaware of the hazard so they blithely assume the new caps must be better than the old ones, and, if they are good for the 140A's, they must therefore be good for the 120's and the 140's!!!!

All 120/140's came with and must have two full-vented gas caps even if they are of the group made with the tank vent interconnect and/or the four-way selector.

A 120/140 owner before serial 14,000 using one half-vented cap who selects that tank before takeoff with a full tank is at highest risk for an engine outage.

A 120/140 owner after 14,000 with the tank-to-tank vent tube using one of the half-vented caps will be saved from a vacuum-induced engine outage because the full vent cap will relieve both of a vacuum.

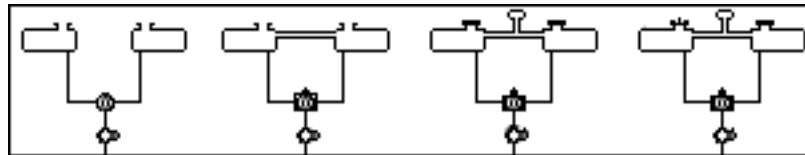
A 120/140 owner with two of the half-vented caps on tanks is at risk using either tank. The planes with the tank-to-tank vent would allow more fuel to be utilized before the threshold value of the vacuum in the tanks would cause fuel delivery problems.

If an owner of a 140A does have his central, above-wing vent plugged, and if he starts with full tanks on the side with the half-vented cap he is in exactly the same position as with the 140 with the half-vented cap whose engine quit just after takeoff. Interesting conundrum isn't it in that the "cure" of a problem creates the potential for another fault.

Not researched is how much fuel can be used from a tank with a blocked vent before the engine stops. In the cases of the 120/140's whose engines quit on climbout, there was enough fuel to the engine to initiate flight before the vacuum in the tanks prevented further flow.

Fuel System Details:

Now, if the "trap" explanation is not enough to make the 120/140 users take another look at the danger of the error made by adapting the new caps for their 120/140's. Consider what happened to the member who nearly used the street for an emergency landing: his FAA-certified airworthiness inspector (AI) had insisted that the half-vented caps belonged on all Cessnas. The owner had a fifty-fifty chance when selecting which tank to fly that day, and maybe it was lucky the way it happened; he is a pilot who uses the fuel in a tank to the last gasp before switching over to the other tank. Consider what would have happened if he had started on the vented tank, flown it until empty, and then depended upon a full tank with a half-vented cap to get him the rest of the way home. Eek!!!



Four simplified tank arrangements that are supposed to be on the planes are indicated above. The two on the left are the only ones authorized for the 120/140's. The left was the first, with open vents in both caps and a three way selector; the next is the late-140 change with the tank-to-tank vent and the four way selector valve that had the first BOTH option, and the caps were the same, still open. The next is the way the 140A's came from the factory, with the sealed caps, the tank-to-tank vent, the four way selector and the new forward-facing large vent above the wing; the right is how the 140A should be today, with the central vent, the four way selector, the tank-to-tank vent, one original closed cap, and an AD-mandated cap that lets air in if the central vent gets plugged, but lets no pressure out. (Much confusion, but two half-vented caps can be used on the A's for...symmetry? or to be really, really sure of venting..except ourwardly if the overwing vent gets plugged).

Here is the warning: the intent of the half-vented gas cap is to provide an alternate source of gas tank venting for those planes which have a common exterior vent and which have the tanks interconnected with a vent pipe. The 140A's are in this category, but the plain 120's and 140's are not, and they are at risk if the half-vent gas cap is used. The purpose of the half-vented gas cap is to allow external air to enter the gas tank in the event the external primary tank vent is blocked, whether by bug nest or ice. These caps should never be used on a plane that was designed to be dependent upon two-way venting gas caps!!!!

If your plane is a 120 or 140 that has the new-style gas cap, and you don't want the hazard for an hour longer, but you have to get home, then you can render the half-vent caps full-vent by removing the silicone valve. For the short term use, say a trip or two, the half-vented gas caps can be made safe for our 120/140's if the red silicone valve is pulled out, a step that can be easily accomplished. Realize that a mechanic or fuel person might subsequently notice the silicone valve being missing, not know why, and re-install a new silicone valve or like cap but again with the silicone valve. If you have one or two half-vented caps on your Cessna 120 or 140, get that valve out of there, make a note in the logs, and go back to the original gas caps with their two-way vent holes as soon as you can!! Be safe.

If you look in the Cessna 140A parts catalog, the fully vented caps meant only for the 120/140's are shown, rather than the correct blanked caps. Even in the updated manuals, those printed long after the A's came out, the listings call out the new blanked caps by part number but that number has since been partially superseded by the half-vented cap part number.

References and Correct Part Numbers:

Airworthiness directive: 79-10-14 r1 as amended 30 may, 1988 (The amendment is noted by r1, "R-one" and not "R-ell" as it might appear because of different fonts).

Cessna full-vent gas cap part number for the 120/140's: it was originally 0422109-1.....C100084-5 in April of '05. (in 2003, the original cap is \$175 or \$157 from Cessna dealers and \$137 from Cessna.)

Cessna zero vent cap original for the 140A is 0311360-4, but microfiche says go to C156003--0101, the part number of the half-vent cap. In 2005, these half-vented caps are about \$35, dealer dependent.

Cessna half-vent gas cap replacement silicone valve part number: unknown and not available from Cessna

Manufacturer of the half-vented gas cap: C.A.P. Of Wichita KS in 2005

Manufacturer of the half-vented gas cap which caused the problem to the 140 owner? Not marked in any fashion, perhaps traceable only by way of Cessna.

The International note which follows which was posted in the Newsletter in 1992! The effort to get the AD changed started long before the response of this notice, but shows how long I/we have been fighting this airplane killer. The FAA and Cessna never answered my inputs directly (and, note that, although my name was on all the docs I sent to the FAA and Cessna, my name is misspelled. Sigh; if my mother only knew!).

CHECK THOSE CAPS!!!

This letter from Cessna explains the important differences in fuel caps between the 120/140 and 140A.



October 29, 1992

Mr. Bill Rhoades
International Cessna 120/140 Association
6425 Hazelwood Avenue
Northfield, MN 55057

Dear Mr. Rhoades:

Through the efforts of Mr. Neil Wright of Sunnyvale, CA, we have learned that Cessna 120 and 140 owners may have an incorrect fuel cap installed on their airplanes. We are asking for your help to notify your members of this situation, so that they can remove any incorrect fuel caps that may be installed.

From information that Mr. Wright has supplied to us, it appears that part number C156003-0101 fuel caps for a Cessna 140A are being incorrectly used on Cessna 120 and 140 airplanes. The correct fuel cap for a 120 and 140 is a part number 0422009-1, which has been superseded to C100084-5.

The correct cap, part number C100084-5, relieves both vacuum and pressure. The incorrect cap relieves vacuum only. This is an important distinction; use of the incorrect cap may create a hazardous situation. Your members who are 120 and 140 owners should be encouraged to inspect their airplanes to ensure that the correct fuel caps are installed. In part, the use of incorrect fuel cap may stem from a misinterpretation of FAA Airworthiness Directive AD 79-10-14 and the related Cessna Service Bulletins SE77-6 and SE892-27. The AD and Cessna Bulletins call for installation of a part number C156003-0101 fuel cap on Cessna 140A airplanes. This does not apply to the straight 140 or the 120.

We appreciate your assistance on this matter. Should you have any questions, please don't hesitate to contact me.

Sincerely,

A handwritten signature in cursive script, reading 'Patrick W. Boyarski'.

Patrick W. Boyarski
Director, Product Support

1/89

Cessna Aircraft Company, P.O. Box 7706, Wichita, Kansas 67277-7706; 316/941-7550; Fax: 316/945-8006; Telex 43-19022



U.S. Department
of Transportation
**Federal Aviation
Administration**

600 Coy 140K
AIRWORTHINESS DIRECTIVE REVISION

AVIATION STANDARDS NATIONAL FIELD OFFICE
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety. They are regulations which require immediate attention. You are cautioned that it is unlawful to operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (FAR 91.413).

79-10-14 R1 CESSNA: Amendment 39-3475 as amended by
P172 P17257120 through P17257188
R172 P17257189, R1720001 through R1720617
177 661, 17700001 through 17701471, 17701473 through
17701597

140A 15200 through 15724
150 617, 628, 649, 17001 through 17999, 59001 through
59018; 15059019 through 15077005
A150 15064970, A1500001 through A1500609
170 609, 18729 through 27169
172 610, 612, 615, 622, 625, 630, 638, 28000 through
29999, 36000 through 36999, 46001 through 47746,
17247747 through 17265684
175 619, 28700A, 55001 through 56777, 17556778
through 17557119

And thousands and thousands more planes of more models. Neal

And all it would take is this statement on an AD revision: "Do not use these half-vented caps on the Cessna 120/140 planes". The FAA recently issued a final, final, final (again '87, '88 etc. and now 2005) AD after two NPRM's to correct the serial numbers of less than 20 planes whose serial numbers had been left out on the shoulder harness AD. 20 planes; our Ceesnas affected....3000???

Addendum:

Be very careful of going to a Cessna dealer and asking for a gas cap for a Cessna 120/140. Too many times, you will get the one meant only to be used on the 140A and newer planes.

I had stopped at Corona airport and talked to a man with a 140 in his hangar and remarked: "...two wrong caps...the half-vented AD-ed ones from Cessna". And he said that his AI and FBO had insisted on them. First takeoff, engine outage. He landed, took off the caps and drilled holes in them and they have been fine ever since. I asked if he had told the FAA about it and his response was that he "never talked to those people!!". And he never told the FBO or mech. One wonders how many planes contain the trap.

A few months ago, one of our 120/140 club members told the sad tale that he had used the A caps on his plane, the plane crashed and it had cost him \$16,000 to get it back flying again. And, he recalled having read this (old version) article before but had not read it again before flying after the new caps went on. He read it again after the crash.

It keeps happening, and will keep happening. Too often, the fault is perpetuated by FBO's or their mechanics insisting that the caps be changed without troubling themselves to find out if the change is good or potentially lethal or even truly authorized.

A local San Jose 140 owner needed his gas tanks replaced because they had the tiny pinhole leaks so common on our planes. The 140 owner and two other 140 owners were sitting in the office while the bill was being paid to the expensive (!) FBO and the general manager then turned to what else the 140 needed. The GM suggested that the gas caps for the '46 model be changed to the NEW, BETTER gas caps. What a surprise when all three jumped all over him with the story about how the 140 owner and passenger had nearly been killed because a previous, high priced FBO/AI would not sign off the annual unless a gas cap was changed to the NEW, BETTER gas cap. The manager was also asked, if the new caps are so much better, how come they did not put them on their own 120...silence and some embarrassment, but that was better than the silence of the engine if they had put them on the plane as part of the "deal".

It never stops. People keep allowing the bad caps to be installed.

Protect yourself!!

Repeated.

If the red silicone valve is pulled out so as to continue to use the half-vented caps, a step that can be easily accomplished, realize that a mechanic or fuel person might subsequently notice the silicone valve being missing, not know why, and re-install a new silicone valve or like cap since they are readily available at any Cessna FBO. That was true then, when this article was first written in '91, but is not quite true today. I called Cessna to see if they still had a part number for it...no...but we have the whole caps. He followed through and called the vendor of the caps (Consolidated Aircraft Parts; C.A.P.) and found that the cap maker would not sell the valves even to Cessna. Mechs can do everything else with a plane but can't change a silicone valve, even at Cessna. What every Ford owning Holley carb mechanic knows is that the same silicone valve is used in hundreds of thousands of Holley carbs, has a part number, and is available for \$8.

I keep saying that this "temporary" method of de-arming the half-vented caps is a trap for the next owner, but the concept is poo-pooed by many owners. A case in point. A 140 owner in England who wrote me to find out about caps; I sent an earlier version of this and later was told that the FBO/A/X had put the "NEW" caps on at the time of the sale to him. Years later, the plane was sold again and I saw a picture of it in 2005 at meet in England, still with the illegal caps. I wrote the previous owner and asked why they had not been changed, and his reply: "oh, I explained the problem to the new owner". Right. Good luck, and all to save \$80 for correct caps in a \$20,000 sale.

The 2005 Ebay Fiasco; 4 April 2005

In April 2005, On Ebay, a seller advertised that some brand new caps could be used on Cessna 120, 140, 170 and many other planes. The pictures showed a half-vented cap which had been mandated per the '79 AD. The advertiser claimed that his authorization for selling the half-vented caps to the 120/140 owners was an: "Authorized Release Certificate" signed off by an FAA Designated Airplane Representative (an ODA for on-site) AT CESSNA in December '04. Even though I sent the ebay-er the AD and the 140A story of how they should not be used on the 120/140's, he left the mis-information on the site until he sold the caps. I have been trying to get the FAA to locate their DAR person at Cessna who misread? the AD and issued the cert and get it rescinded and find out why the FAA rep at the factory would elect to "approve" something that was not approved by the maker and was excluded from the AD which created the half-vented caps for the newer Cessnas. Why is the FAA guy at Cessna authorizing the wrong parts....why are the Cessna parts people not issuing parts, hopefully correctly?

1. Approving National Aviation Authority/Country:		2. AUTHORIZED RELEASE CERTIFICATE FAA FORM 8130-3, AIRWORTHINESS APPROVAL TAG		3. Form Technical Number: 880960	
4. FAA/UNITED STATES		5. Cessna Aircraft Company Cessna Parts Distribution Dept. 702 5800 E Pawnee, Wichita, KS 67218		6. Work Order/Complaint Number: 465514	
7. Description:	8. Part Number:	9. Eligibility:	10. Quantity:	11. Serial/Batch Number:	12. Status/Work:
3 CAP FUEL	C156003-0101	120	1	N/A	New
13. AIRWORTHINESS APPROVAL - PARTS. THIS FORM IS NOT AN EXPORT APPROVAL. 120,140,150,152,170,172,172R,172RG,172S,175,180,182,182T,185,188,206 PO# C64942					
14. Certifies the items identified above were manufactured in conformity to:			15. <input type="checkbox"/> 14 CFR 43.9 Return to Service <input type="checkbox"/> Other regulation specified in Block 13		
<input checked="" type="checkbox"/> Approved design data and are in a condition for safe operation. <input type="checkbox"/> Non-approved design data specified in Block 13.			Certifies that unless otherwise specified in Block 13, the work identified in Block 12 and described in Block 13 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.		
16. Authorized Signature:		17. Approval Certificate No.:		18. Authorized Signature:	
<i>[Signature]</i>		1001290E			
19. Name (Typed or Printed):		20. Date (m/d/y):		21. Name (Typed or Printed):	
KENNETH E. WYSOCKI SR., ODA		12/10/2004			
User/Installer Responsibilities It is important to understand that the existence of this document alone does not automatically constitute authority to install the part/component/assembly. Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts parts/components/assemblies from the airworthiness authority of the country specified in Block 1. Statements in Blocks 14 and 15 do not constitute installation certification. In all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.					
FAA Form 8130-3 (5-01)		Installer must cross-check eligibility with applicable technical data.		NSN: 0052-00-012-8005	

Later, for justification for not changing the advertisement even though he now was aware his claims were wrong, the ebay seller wrote: "I am an A&I AND I own this airport". He stated he knew of other 140 planes on the field with the AD-ed caps and that he worked on a plane that had the Cessna "vented caps", meaning....half-vented caps, and he has no plans to tell the plane owners or to remove them from the training 140 with the bad caps. Also based; the one on the cover of the Cessna Flyer magazine (May '05) which has the wrong caps. Not being a member of the Cessna Flyer group, they refused to respond to a request for the N number of the plane on the front cover so that the owner could be warned.

Following, the AD front page, and the incorrect "cert" which was the ebay seller's authorization and the letter from Cessna in '92 to the International 120/140 org as an alert, after my input had been considered by Cessna and the FAA and found not worthy of a revision of the AD...even though the FAA made revisions of "leftouts" by them in other AD's.

18 August 2005

From 4 April for the first notice to the FAA (inputs via their emergency resource and the San Jose FSDO) until the issuance of the SAIB we received at this date, FIVE MONTHS to issue a poorly worded, inadequate, no-figure SAIB. Owners would have taken at least five minutes to cure the problem and make sure it never happened again, not five months. The SAIB will also disappear and the usage of the wrong cap will recur and planes will fall out of the sky because the FAA is incapable of issuing a revised AD which states something like: "DON'T use only the full-vented original caps on all 120/140's!"



You can see why the ebay seller stated that his authority was "from Cessna" in the April paragraph of this note. This is the FAA document (8130-3 which no one had heard of, including the FAA) which the ebay seller was using for authority to sell to the 120/140 owners and why wouldn't anyone? The seller refused to remove the 120/140 listing from his advertisement. Although the guy at the FSDO said Wysocki (the signer of the 8130-3) ODARF "could not" do this, he obviously did. Why? And what else and how many times before?

I was told at the FSDO that ODARF means he is an embedded FAA Designated Airworthiness Representative stationed at Cessna.

What this proves is: beware of what is advertised as "okay to use" on ebay. And wonder why an A&I would not remove the incorrect listing, even after it was proven wrong.

Early September '05, a "Response" from the FAA Aviation Safety Hotline Manager:

"The fault at Cessna was that the data entry of the C156003-0101 (140A and up only) gas cap was eligible for installation on a 120 airplane (they goofed again by not mentioning the 140) and the part number is automatically inserted in the 8130-3 Form and not verified by anyone.

So much for the "expert" and extremely slow responses from the FAA.

To compound all the errors this section of the FAA made, the response also noted that SEB92-27 (Bulletin) applies to all planes except the 120/140's. Sounds hopeful, right? Nope, it is not to be. The SEB refers to a notice that states that the 140A airplanes should have their gas tank inlet stems modified so that the planes cannot be fueled with Jet-A fuel. Who reads?

The Originals:

The original caps for the Cessna 120's and 140's look like this, with the two vent holes as shown providing air inflow or fume outflow without restriction. They are both-way vents since fumes can exit and air can enter without any valve interfering.



Marking denoting the name of the maker or a part number, which, according to FAA rules, has never been seen on this part.

It appears that the FAA is incapable of including figures in any of their AD or SAIB documents.

If the tanks on our 120's and 140's can't get air in when they need it to replace the fuel volume depleted when flying because the silicone valve sticks to its seat, then that is one hazard, and another hazard exists when the plane with the new cap is heated by the sun. With a half-vented cap installed, the effect of the force of the expansion of the fuel, and the fumes within, should be quite a sight to behold when the fumes or fuel can't get out, as would also be the case simply from altitude-induced pressure differentials. The tanks and the wings and the fuel system downstream can suffer extreme trauma from the pressure! These half-vented caps are designed to only let air in and nothing out. The greater the pressure from the inside, the tighter a seal the silicone valve will make.

The problem will keep repeating because new owners of the planes have no place to go to get ALL of the cautionary information; only the AD's and SAIB's are in a database accessible from the FAA.



If you have suggestions for improvement, by all means send the information to me for inclusion in the next version.

Neal F. Wright cougarnfw@aol.com filed as 140A gas cap '05 Oct

Monarchs:



This is a picture of the Monarch cap which also causes engine outage on climbout. It was approved by the FAA because of inadequate research by the seller and the FAA, and driven out of business because of their failures in 2004.
Neal

And follow this unlikely story....after the FAA read my reports on the Monarchs causing airplanes to have their engines quit on climbout (just like the Cessna half-vented caps), the FAA forced Monarch to close its doors but send along a thing we will call a "service bulletin". The FAA took the incorrect, absolutely dangerous service bulletin and changed it into an FAA "Emergency Alert". The alert says...continue to use the caps, even if they cause the engine to quit, if you just suck on gasoline to establish that the valves of the caps open. Amazing. It proves that no one at FAA read and understood the basic problem, that the vacuum needed to open the incoming venting causes the engine to get no fuel. Argghgh!! And nobody at the FAA cares. Three safety managers at the FAA refused to get involved when they realized that an FAA engineer had approved the product.

All accidents via these means, of course, will be assessed by the NTSB as "pilot error and carb heat" because that is the only combination they know and they NEVER ask anyone who knows. And so the problems caused by the AD continue to down planes to this day. For the main features of the Monarch condemnation, see the Monarch articles.