

# ThunderEnlightening<sup>T.M.</sup>

Classic Auto Supply Co., Inc.

Thunderbird Specialists  
**CASCO**  
SINCE 1969

A NEWSLETTER FOR THE CLASSIC THUNDERBIRD OWNER AND RESTORER

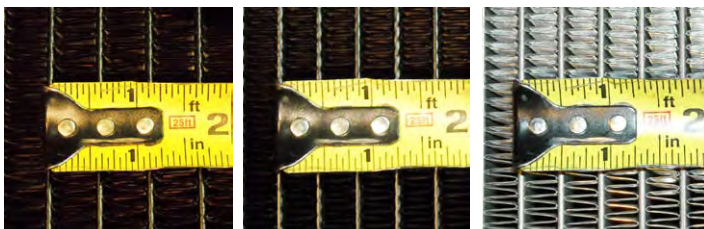
## ISSUE NUMBER TWENTY-THREE • FEBRUARY 2011

### BEST COOLING RADIATOR

Have you wondered which radiator cools the best? We have, and today we may have come a little closer to understanding which radiator is the best and why.

#### WHAT IS AVAILABLE?

First lets look at what radiators are readily available to the Classic Thunderbird market. Here at CASCO we offer two styles of copper-brass (Cu/Brass) radiators. Both have four rows of 1/2" copper tubes. Part number 8005G has 144 tubes while parts number 8005H boasts 192 tubes. The manufacturer is able to get more tubes in the 8005H because they space them closer together. The third radiator CASCO offers is the all aluminum radiator. The aluminum radiator, part number 8005J, has two rows of 1" aluminum tubes. So at their core, these radiators are not only made of different materials, they also have different size tubes and different spacing between the tubes. You might wonder why aluminum radiators use 1" tubes and Cu/Brass use 1/2" tubes. Our understanding is that aluminum



tubing is stronger than the copper tubing. As a result, flattened aluminum tubes can handle more pressure than the copper counterparts without bulging. Some calculation shows us that the 8005H has the highest square inches of contact with the fluid in the radiator.

### WHICH MATERIAL CONDUCTS HEAT BEST?

A quick look in Mark's Standard Handbook for Mechanical Engineers shows us that thermal conductivity is best in Copper followed by aluminum and then by Brass. So there is no clear winner there. But it would seem to indicate that maybe Cu/Brass units might have an edge.

Type	CASCO Part#	qty rows	qty tubes/row	of tubes	Wetted Surface Area Sq Inch
Cu brass HE replacement	8005H	4	48	192	302
Al aluminum SD replacement	8005J	2	45	90	283
Cu brass HD replacement	8005G	4	36	144	226
Cu brass original		3	36	108	170

#### AIR FLOW TEST.

Today we ran a test to see how the different radiator cores affect air flow. For this test we used CASCO's electric *puller* fan. This kit bolts to the engine side and *pulls* air through the radiator. This fan kit is used if you want to remove the original engine driven fan and fan shroud. It offers the owners of modified cars a truly modern look. It was the perfect fan to use for this test. All we had to do was measure the amount of vacuum generated between the fan and the radiator. The higher the vacuum reading, the more restrictive we could say the core of the radiator was. The results showed that the 8005J aluminum radiator is the least restrictive to air flow. The 8005H Cu/Brass radiator measured just over .25" WC (water column). The aluminum radiator measured approximately .22" WC. In order to gain a perspective of the difference between the vacuum readings, we put dollar bills on the face of the aluminum radiator





until the vacuum was just over .25" WC like we saw with the Cu/brass 8005H radiator. It took 8 dollar bills sucked to the face of the aluminum radiator to raise the vacuum reading to just over .25" WC.

### CONCLUSION

CASCO Restorations has

installed all three different radiators on a variety of TBirds. They all do a good job. But based on our practical experience, we have long touted the aluminum radiator as the best cooling. We never had any proof to support our belief. But now that we have seen that the aluminum radiator passes air more freely, we are one step closer to understanding why the aluminum radiator may run cooler. Hopefully this summer we can run tests to measure the actual temperature drop the coolant sees as it passes through the different radiators. Stay tuned.....

### **THOUGHTS FROM DON...**

My name is Don, and I started working with CASCO in 1972 when I was Parts Manager of the Ford dealership. I came to work for CASCO in 1979. Over the years, I have seen many changes and additions to our company. Thanks to our customers, business has grown, expanding to five divisions and to two generations. CASCO Parts started in Bill and Sue's basement in 1969, the Manufacturing division started in the mid 70's, and the Restoration division opened in the late 70's. In the nineties we got patterns for flat automobile glass for cars from the late 20's to the mid 60's and offered a drop ship service to other antique auto dealers, and thus the fourth division, CASCO Glass. This grew to the point that one person was cutting glass in the morning and packing boxes in the afternoon. In 2001, we purchased a CNC water jet cutter to cut the glass more efficiently, which is also capable of cutting metal, and thus CASCO Water Wire, the fifth division, came into being.

Over 53,000 of these "Little Birds" were manufactured, and I believe that over 30,000 still exist yet today. As most of you know, we are not the only dealer that does this, but we are the largest that does this and only this. Other companies sell parts for later Birds and Mustangs as well. Over the years we have learned that our customers want three things, in this order: 1- Good service, 2- Good quality parts, 3- A reasonable price. Service has become more important in the last few years, seems as though everybody is in a hurry today, but this is just a car, and it will still be there next week. As a rule, reproduction

parts are better quality than the original parts. Ford was building cars then, now we think of them as a large piece of jewelry. Also, some customers do not want foreign made parts, but in today's world that is almost impossible to avoid.

A few years ago I thought that every "Little Bird" would be restored and our sales would decline, but that has not happened. This last recession was the first time we saw a contraction in our customer's spending. Even in our small rural community we have lost thousands of jobs in the last fifteen years. Yes things are tough all over, I even saw a Lawyer with his hands in his own pockets the other day. I have told younger people, my philosophy to being happy is to do what you like and to like what you do. Working at CASCO, I have always tried to like what I do and to treat everyone the way I would like to be treated. I believe that the people at CASCO will do the same after I am gone. On behalf of all of us at CASCO, "We thank you for your support!"

*Thanks to Don for his contribution to our newsletter. His extensive knowledge and endless jokes have been great to have around!*

### **BUSTED BRAKE LINE? NO WORRIES!**

OK not completely, but if you add this clever combination valve to your disc brake system you'll get the most from your dual master cylinder. With this kit installed, if you bust a front line, you still have rear brakes. Likewise if you lose a rear brake line, you still have front brakes. Without this installation, you are grabbing low gear, and yanking on your emergency brake because even though you have a dual master cylinder, you do not have a dual brake system.

What is a combination valve? A combination valve incorporates a distribution block and a proportioning valve into one package which provides the necessary fluid control for disc/drum brake systems. The distribution feature is where the safety piston lives. When a free flow (busted line) is experienced, the piston moves, isolating the broken line from the brake system. The proportioning valve regulates the rear brake line pressure to reduce the likelihood of rear wheel lock up.

The kit includes combination valve, mounting plate, mounting hardware, and lines. Bolts to the battery heat shield with no drilling or additional holes required. Part number 2B257K for power brake cars sells for \$170.00 plus shipping. Please specify year of car, and power or standard brakes when ordering.

[www.classictbird.com](http://www.classictbird.com)

## CTCI SHOW WINNER

Congratulations to Mark & Janice Wilson of Colerain, Ohio who received a Gold Medallion award for their Peacock 1956 Thunderbird at the

CTCI 2010 International convention. CASCO Restorations restored this car and the Dayton show was it's first time



out. The Wilson's had a great time in Dayton and were thrilled to receive the high awards for their Little T-bird.

We had a Q&A session with [Shawn Bowman](#), manager of CASCO Restorations, regarding the restoration of the Wilson's car and about the restoration process in general.

1. What awards did the car receive? At the CTCI show in Dayton Ohio, the car was entered into 1956 Primary Original class and received a Gold Award having scored a minimum of 275 points and also Gold Medallion award since it scored a minimum of 290 points. According to CTCI rules, this automatically moves it to Senior status. If a car scores three consecutive Gold Medallion awards, it is eligible to receive the coveted CTCI Gold Medallion Preservation Award.

2. How long did the project take? We worked on the car for about 3 years on and off. I would have to say that we actually have a little over 2 years on the car.

3. How many man hours were required on this project? We have about 2,000 hours in this particular project. This car had around 320 hours in just metal work. The body has about 450 hrs in getting everything fitted and under paint. You'll have around 80 hrs in getting the hard/top under paint and 24 hrs in installing the headliner, stainless, weather strips, and installing the back glass. Then 100 hrs in buffing everything like the main body, hood, trunk lid, doors and the hard/top. The engine takes about 40 hrs to finish up after it comes back from the machine shop. You'll have around 240hrs in doing all your sub-assemblies (sand blasting, priming, painting and pre assembling). The chassis has 125 hrs in getting it to a rolling chassis. You have about 110 hrs in getting all of your interior parts ready for installation. The soft/top takes around 70 hrs to disassemble, drill out broken screws, sand blast, prime paint, fit to the car and installed the cover. Final assembly and fitting of the hood, trunk lid, and doors took about 350 hrs.

4. What processes does CASCO choose to farm out? We actually only farm out a handful of jobs like radio,

clock, gauge repair, chrome and cadmium plating. We also farm out engine machine work and automatic transmission rebuild. We don't have the special tools and the machines that it takes to do these jobs. The shops we use for chrome, transmission and machine work are located right here in Ohio. Our relationship with these shops go back many years. We have a lot of confidence in their expertise.

5. What would you say about NOS body panels? Many projects come to CASCO with NOS repair panels. Anyone that has used a lot of NOS parts knows that they are a good base to start with but are not a perfect fit and need to be fitted by a skilled restorer. The fit of some NOS panels leads us to believe that the panels are factory seconds that are good for collision work, but were rejected by the factory for assembling new bodies.

6. What were some of the things you learned about this project you did not know when you started? We have always known that "show cars" take more time than vehicles built to be driven. But it is amazing the amount of time you can wrap up in a project when everything you do requires perfection. Plus there is considerable time in understanding the concours rules and tracking down original parts if needed. It sounds funny coming from a business that essentially supplies the world with quality reproductions, but there are a few parts that have not been reproduced and when you need one, only an original will do.

7. What advice would you have for someone thinking about starting a project like this? Learn as much as you can about doing a project at this level before you start. Look over the CTCI rule book and take the time to talk with as many people as you can that as already done a project of this level.

8. What are the benefits of having a professional restoration over DIY? The biggest benefit of the professional restoration is the years of experience the technicians have. In the case of CASCO Restorations, our staff have collectively 40 years of Thunderbird experience. This experience comes from working almost exclusively on Classic T-Birds. If you have ever called our tech help line 740/622-9700 you have spoken to the CASCO Restoration specialists that touch T-Birds every day. In addition to direct experience with T-Birds, they also have established relationships with trusted outsourced services like plating, engine machining, transmission work and specialized gauge repair.



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795 High Street, Coshocton, Ohio 43812

*ThunderEnlightening* is a trademark of Classic Auto Supply Co. Inc., 795 High St. Coshocton OH 43812.

This publication is prepared and published by Classic Auto Supply Co. Inc. for the owners of 1955, 1956, & 1957 Ford Thunderbird automobiles. It is provided without cost to its current active customers.

Readers are encouraged to submit shop tips and articles for publication. Each submission printed will earn for its author the gratitude of Classic T-Bird owners around the world and a \$30.00 gift certificate from Classic Auto Supply Co. We reserve the right to edit any submission.

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## PREMIUM IGNITION WIRES

Because our customers asked for the option of premium ignition wires, CASCO is proud to announce we are currently making an all radio resistance ignition wire set. This new wire uses all silicone rubber construction with a fine, wire wrapped, resistive mag-core. The benefits of this new wire include: better heat resistance up to about 500 degrees, superior resistance to petroleum products, better pliability in cold weather, lower incidence of harmonic vibration failure, designed and built to be compatible with hotter coils and computer ignition, and of course no radio interference. These wires are concourse correct including the licensed FoMoCo logo on the boots and the brown coil wire. CASCO has been manufacturing the Ford licensed original style ignition wires for decades. We have always used the best tin coated copper stranded wire. This is the same construction that was used when the Little Bird first rolled off the assembly line. We continue to manufacturer the tin coated copper wires you have been using for years.

Silicone Jacket & Mag-Core Conductor Wire Set:  
**12259AP** for 1955, 56, and early 57 @ \$84.95 +s/h  
**12259BP** for late 57 (small data plate) @ \$84.95 +s/h

Original Style Tinned Copper Wire Set:  
**12259A** 1955, 56, and early 57 @ \$62.95 +s/h  
**12259B** for late 57 (small data plate) @ \$62.95 +s/h

## ELECTRONIC NEWSLETTER

CASCO publishes a free electronic newsletter for Thunderbird enthusiasts which includes shop tips, parts updates, and specials. Sign up to receive on our web site at [www.classictbird.com](http://www.classictbird.com). Your email address will never be sold or used for any other purpose.

## FREE RESTORATION GUIDE

Hemmings Motor News has published a special "Collector Car Restoration Guide" to assist those in the process of restoring their collector car. Classic Auto Supply helped sponsor this publication and we have complimentary copies available for our customers. Just mention that you would like to receive one and we will send it to you for **FREE with your next parts order**. Order by part number **HRG**.



R Wallace - Canada



M Robinson - Alaska



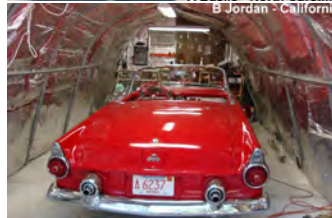
A Basile - North Carolina



E Spiteri - Nova Scotia



B Enders - Idaho



B Jordan - California



J Cass - Nebraska



D Polton - California



J Durning - Florida



M Bowers - Michigan



D Likely - Missouri

## GARAGE PICTURES

CASCO received many wonderful entries when we asked for your garage pictures last year. We did not receive enough garage pictures to produce a calendar this year but we are grateful to those that took the time to send in a picture. Some of the pictures we received are featured above.