

**A DODGE/CUMMINS
TURBO DIESEL
HISTORICAL
PERSPECTIVE**

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A DODGE/CUMMINS TURBO DIESEL HISTORICAL PERSPECTIVE

Compiled by the editor and writers of the Turbo Diesel Register
(a membership group of Dodge/Cummins owners).

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How the TDR membership group got its start

THE FIRST TURBO DIESEL

How it all got started

by Robert Patton

April 16, 1985

Mr. John R. Keele
Manager, OEM Marketing
Cummins Engine Company, Inc.
5th and Jackson
Columbus, Indiana 47202-3005

Subject: Withdrawl of Request For Quote on 1988 Truck Diesel
Engine Program

Dear Mr. Keele:

Due to the time limitations associated with the subject program, we find it necessary to withdraw the Request For Quote distributed to you on March 22, 1985. We have decided to proceed with another supplier who has already performed considerable developmental work on this program.

We appreciate your interst in doing business with Chrysler and regret any inconvenience this may have caused.

Sincerely,

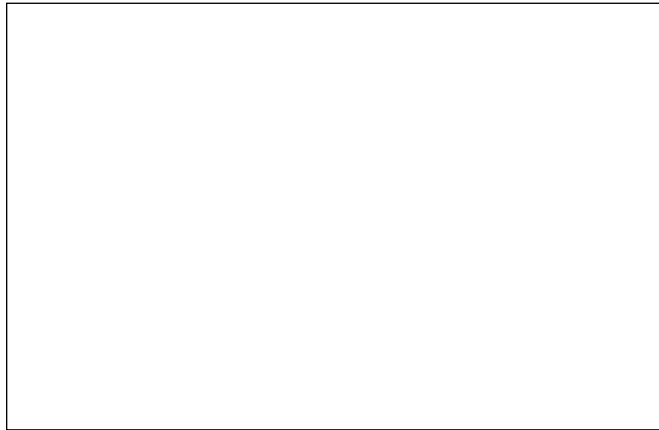
Edward J. Ford, Jr.
Buyer

Power Train Components

You would expect surprise and disappointment when, two days later, the Cummins OEM Marketing Manager, John Keele read this correspondence. But instead of reflecting dismay, John smiled broadly. John had been working with Dodge's Troy Simonsen and together the two companies had indeed "already performed considerable developmental work on the program." But how could he be sure that maybe another Dodge team hadn't been assigned the same task? Team vs. team for the best design?

This intriguing letter was presented to me by Cummins retiree John Keele in a December '04 interview. I met with John and DaimlerChrysler retiree Troy Simonsen to learn how the Turbo Diesel pickup came into being. From my review of an old TDR magazine I recalled that back in 1995 at a TDR National event John and Troy did a presentation for the audience about how the Turbo Diesel began. Being busy at the time, I missed their presentation, but heard from other attendees that their "Huntley and Brinkley" report was captivating.

In an effort to find Huntley and Brinkley—excuse me, John and Troy—I asked the current personnel at their respective Cummins and Dodge offices. John, who? Troy how much? In respect to the current employees, John retired from Cummins in 2000, Troy from DaimlerChrysler in '91. However, the more people I asked, the more I was met with "Haven't heard of them." Aside from the fortunate 200 in attendance at the 1995 TDR Nationals and the 6000 TDR members that may remember their story from the TDR Issue 11 magazine (fall of 1996), it seems that the story about the start of the Turbo Diesel would be lost. And, after all, we've got a letter to Cummins' John Keele stating that Chrysler "had decided to proceed with another supplier." Okay, John, what gives?



Troy Simonsen (left),
TDR's Robert Patton (Center),
John Keele (right)

Before continuing with the John and Troy interview, I've got to comment on the near loss of this piece of history. It was disconcerting to learn that few within the current Cummins or DaimlerChrysler organizations knew of these two pioneers. Like we did last Issue with our historical look at Cummins Inc. and interview with Clessie Lyle Cummins Jr., I felt a responsibility to document the origin of the Dodge/Cummins Turbo Diesel pickup. With an expected sales volume of 175,000 Turbo Diesels for model year '05 and a total population of over 1.3 million trucks, one can't deny that the first truck, and, more important, the initial working relationship between Dodge and Cummins, is significant.



As an aside, I wonder to myself, "Is it a coming-of-age thing that leads one to become intrigued by the past?" For evidence I cite the popularity of family tree and scrapbooks that captivate many middle-age adults. Parallels to the business world abound: the youth doesn't care, they are too busy trying to make their own bit of history.

How quickly (and easily?) one can forget one's roots. Yet, so much can be learned from the past—perhaps I should reconsider a career as a history professor? Loyalty and humility based on long-time give-and-take are often in short supply.

Enough of my historical babbling, let's get back to the story. As it turns out, the "proceed with another supplier" letter was sent to Cummins' John Keele in error. We are indebted to John for the memoirs that he kept from his employment at Cummins. If we had the space in the magazine to share his archives with you we would need to send one of those 12-inch high storage boxes to every member. Collectively, John, Troy, and I agreed that the "proceed with another supplier" letter was the type of controversial document that would capture your attention.

To set the stage for the diesel engine program, let's go back to 1981.

Troy Simonsen starts the story, "In 1981 Truck Operations was created by Vice President Joe Campana to breathe new life into the faltering Truck Division. Joe and assistant Gordon Cherry were fully committed to getting a diesel engine in our trucks as soon as possible. I went to Truck Operations as an engine specialist whose job was to get a diesel in the Dodge trucks. I had enjoyed many good jobs, but I really put my heart and soul into this one. Soon I didn't know what a car was and I didn't care."

What was happening at Cummins in 1981? John Keele gives us some insight. "Early in 1981, president Jim Henderson picked Jim Farrar to head up Cummins marketing activities for the new B-series engines. I was chosen as a part of the team because I had been doing 'marketing' things as a part of our in-house engineering applications group. I went after the US truck OEM's and we seemed to have GM Truck in our pocket until the GM Truck president, whose previous assignment happened to be president of Detroit Diesel reminded his truck folks that they had a corporate 8.2 liter mid-range diesel to sell. Ford was busy setting the direction for their mid-range and light-truck diesel needs. Cummins' response included proposed development of a five cylinder version of the B-series engine platform. But, at the end of the day, Ford did not choose Cummins."

Troy continues the Chrysler story, "We were looking around the world for an appropriate diesel engine. We went to Minneapolis and Huntsville, AL, to visit Onan (not yet a part of Cummins). They put three of their new L-Series engines in pickups and vans for us. We talked to Detroit Diesel about their 6.2-liter engine. Navistar courted us to buy the 6.9 but didn't know if they had enough capacity after fulfilling Ford volumes.

"We talked to the Japanese about a 6-liter diesel engine of theirs that was suitable for a medium truck. They couldn't fathom why we would be interested in a 160 horsepower engine with 400 ft-lb of torque for a pickup! Perkins was also courting us with their upgraded 6-cylinder engine. White engine company and Duetz had also done truck repowers for Dodge. Chrysler had a development program to make their 225/Slant-six into a diesel. They even had several running in test cars and trucks. Cummins invited us to visit and drive a Ford E350 van with their 3.9-liter, four-cylinder, B-series engine. They also showed us market research and their engineering facilities.

"We were impressed with Cummins and with the performance and fuel economy of the four-cylinder engine. But we were concerned about the vibration. We could see that the six-cylinder was too big to fit in our trucks, so we asked if they would make a five-cylinder engine. Cummins entertained that thought, but declined. We continued with only casual contact with Cummins until one day in 1983 when John asked me to get a set of Dodge pickup engine compartment drawings for them."

John talks about how things moved into high gear. "Yes, I kept in touch with Troy and the 6.9-liter growth he was tracking in Ford. When I learned that Chrysler was considering the Navistar 6.9 in Dodge trucks, the light went on. Our B-series, six-cylinder was the shortest six-cylinder diesel in existence. A goal had been that it be short enough to fit the GM mid-range truck and that engine bay was pretty short. That's when I asked Troy for engine compartment layout drawings to check feasibility of the 6BT to be fitted. I remember reviewing the marked-up drawing in Gordon Cherry's office. As Chrysler became more positive about the potential, I suggested that Cummins do a demonstration installation for Chrysler to look at, but Gordon felt it would be better to have Chrysler do some engineering first to reduce the not-invented-here reaction to a Cummins-done installation. So I had a non-running engine prepared and sent to Troy for Chrysler to do some mock-up work."

Troy picks up the story and tells me about the trial-fit engine, "When the mockup was complete we invited all the Chief Engineers from Chrysler Engineering to review the mockup truck. We provided them a list of the changes required to install the engine into the Dodge pickup. They looked at the truck and agreed that there were still some challenges, but no show-stoppers.

"Somewhere about this time Gordon Cherry wrote to Corporate Purchasing to get them formally involved with this process. When purchasing found out how far we had progressed with Cummins we were told, in no uncertain terms, that we were overstepping our bounds. It took a little soft pedaling and backtracking to get them calmed down, but it eventually worked out and they supported us in working with Cummins.

"In the meantime, we provided Cummins with a truck for them to install a working diesel engine in.

"The next hurdle was uncovered in a discussion with Product Planning and Engineering. We discovered that there simply were not enough resources within Chrysler to take on the engineering task required to install the diesel in a gas pickup. Cummins was not daunted by this and volunteered to be our engineering outside contractor. We worked out a unique, never-tried-before system for Cummins to do the engineering, design, and testing under the watchful eye of Chrysler Engineering."

John continues the story with some background information about Cummins' engineering support: "It was fortunate for Cummins that Cummins had a new entrepreneurial group underway aimed at developing driveline business. Again, my boss Jim Farrar was heading up his new business endeavor. He clearly recognized the opportunity and potential for new engine business. A challenge for Chrysler would be how to have the

outside-sourced engineering be accepted and incorporated within Chrysler engineering.

Further, John says, "Troy alluded to conversations with Chrysler Corporate Purchasing to backtrack them into the loop. Were it only that simple. My correspondence files from 4Q84 to 1Q85 are full of letters documenting the considerable work with Chrysler's purchasing folks. In February of '85 I knew that Perkins Diesel was doing things that would compel Chrysler's attention. Throughout February, March and April there was a great deal of sparring (internal and with Chrysler) about the price of the engine. My memory and my old memos indicate that in April things went quiet for a few days. I was getting uncomfortable about continuing to hold firm on price, fearful that maybe Chrysler would decide to walk. I called Cummins CEO Mr. Schacht and met with him for a few minutes in his office. He seemed much more comfortable with holding steady than I was.

"Then on April 9, Purchasing called advising Cummins to proceed on the program. Then, on April 16, Purchasing sent a letter to all the potential suppliers, Cummins included, advising that 'considerable work had already been performed by one supplier,' the Request-for-Quote was being withdrawn. I was smiling at Purchasing's clerical error, but it confirmed that time really was of the essence to Chrysler on the program, and the big ship was indeed embarking . . . with Cummins only, and with no others as backup.

"The sobering reality was sinking in too . . . 'the bear has been captured; he's in the tent!' We had to get going, pronto! There were a number of things to get sorted out, and quickly. Both companies were anxious to get a Letter of Intent signed, but it took months of drafts back and forth before we agreed to wording that both companies were comfortable with. Fortunately, the early engineering work started showing progress more quickly. Cummins had the first of six mule vehicles repowered to the diesel in May, and five of the six were running by October."

Troy tells about the first test mule: " I was on hand to test drive the first prototype Dodge/Cummins diesel pickup, a two-wheel drive, automatic three-speed. Cummins had set up a test run with comparable Chevy and Ford diesel pickups. It was a thrill to see the Dodge/Cummins outperform both of them with ease.

"By this time John and I were well on our way to a long close working relationship. One day we were test driving the first manual transmission, four-wheel drive pickup. We were pulling a 10,000 pound trailer off-road using all the combinations of low and high range gear box to determine the appropriate gear ratios for a new five-speed, manual transmission. After the gear ratio exercise we went for a test drive through the nearby country roads with the trailer in-tow. We found ourselves at a stop sign on a steep uphill incline. When John let out the clutch we heard a clang and saw the small prop shaft roll across the road into the ditch. We looked at each other for a moment. I climbed out and threw the prop shaft in the back of the pickup. John put the pickup



Test mule one was spotted outside Cummins' test facility in Columbus, Indiana. John (left) and Troy (right) pose in front of the 20 year-old truck.

in 4WD and backed down the hill and took another way back to town. We commented that our test mule was the world's first front wheel drive diesel pickup.

"The audience may think that putting a diesel engine in a gas pickup is a small job. However, consider all the things that had to be changed to accomplish the task:

- Move the radiator yoke and radiator forward four-plus inches to make room for the longer engine
- Change the fuel system from gas to diesel including an in-tank pump, fuel return line, fuel filter, heater, and water separator
- Larger battery, cables, and stronger battery tray
- Larger diameter exhaust system
- Stronger drivetrain for the low RPM high torque engine: torque converter, clutch, automatic and manual transmissions, front and rear axles, prop shafts, 4WD transfer case
- Adapt engine to transmission and clutch housing
- Heavier front suspension to support much heavier engine and driveline
- Increased cooling capacity: radiator, shroud, fan, fan drive
- Add an engine oil cooler
- Add a vacuum pump for brakes and heater controls
- Certify brakes for different weight distribution
- Change instrument panel for appropriate diesel function warning lights
- Add electric controls for intake manifold heater
- Release a larger starter
- Provide a large enough alternator to support the electrical system
- Rearrange items in the engine compartment to fit with the diesel engine
- Design the front end engine accessories to fit
- Many new wiring harnesses throughout the truck

"Another challenge that we faced was truck assembly plant complexity. Truck assembly management said there simply was no room in the truck plant for added engine and transmission dressup stations. Again Cummins stepped up to the challenge and set up a new facility in the Detroit area to dress engines and transmissions sequenced to the truck plant build schedule. The Powerplants were shipped in exact sequence for truck build on a just-in-time manner.

"We also had to select a manual transmission supplier. There were three major contenders: Tremec, Getrag, and New Process. Getrag was chosen because they were the only company that could meet production timing requirements. Even at that, manual transmissions were not available for the first diesels and were in limited availability for quite some time.

"Volume issues were an important part of my work. In 1986, after the engineering trucks were running with great results, we had to put together a forecast. It included inputs like this: Ford had captured 85% of the diesel

pickup market one year after introducing the Navistar 6.9-liter diesel. This showed that pickup buyers would buy any brand truck to get the best engine. We knew that the Cummins engine was better than the Navistar. In addition we would have the best fuel economy, and towing capacity, and best performance. My overall conclusion was that Dodge could sell 33,000 diesel pickups the first year in production. In spite of my study, conservative corporate executives kept the planning volume at 13,000 units the first year with moderate increases each of the following years.

"After one year's delay to finish all the engineering tasks, production was scheduled for the 1989 model year. Early in 1988, Chrysler's marketing people found out that the sales of the Ford Navistar diesel pickups were falling off rapidly and they were concerned that the diesel market had been saturated and that our Dodge/Cummins pickup would not get enough sales to be worthwhile. They proposed canceling the production launch scheduled for June 1988.

"However, the drop in Ford's sales numbers could easily be explained. Ford was in a major model changeover with the F-Series trucks and dealers were out of all pickups. Furthermore, as pickup production started up again they would launch F-150s first, then add diesels to their production last.

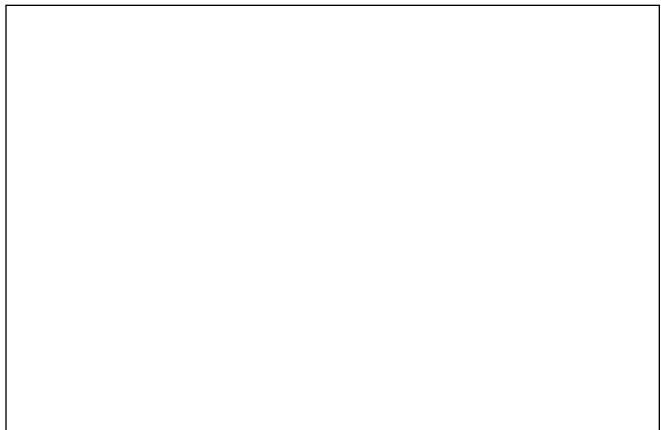
"Our VP of Truck Operations, Jerry York, went to marketing and explained this situation and held firm that we should launch this great new product. In order not to rock the boat, he conceded that the volume may be only 10,000 instead of the 13,000 originally projected.

"We started taking diesel pickup orders in June 1988. By January 1989 we had 22,000 orders from dealers and had to stop taking orders. If you extrapolate the 22,000 for 8 months to 12 months it comes out at 33,000. I had pretty mixed emotions about that, it was the number that I had predicted three years earlier, but we could build only 17,000 because we did not have production capacity for more.

"Before I retired in 1991, John asked me what I thought the volumes would be in the next few years. He told me what the official Chrysler corporate volumes were and Cummins felt that the numbers were low. I gave him some numbers on a 3x5 card. It indicated 45,000 to 50,000 in a few years. I didn't know but his was one of the inputs Cummins used to make the decision to tool the Walesboro, Indiana, plant to make engines exclusively for Dodge trucks. After I retired I had tears in my eyes from the satisfaction that my input on future volumes had been valued by Cummins and that they were able to re-open a plant that had been moth-balled."



Side view of mule one.



Under the hood.

And the rest is history . . . The Walesboro plant (known as Cummins MidRange Engine Plant, CMEP) is now dedicated to engine production for Dodge only.

The first engine was produced at CMEP in 1992. CMEP celebrated production of 100,000 engines in '95; 250,000 engines in '97; and 750,000 engines in November of '01. The millionth Dodge engine milestone was celebrated in April of '03. The anticipated volume for '05 and CMEP will be a record at 175,000 engines.

Troy and John have good reason to be proud of the now legendary Dodge/Cummins Turbo Diesel pickup. Should you have a chance to meet these pioneers at a TDR event, please be sure to express your gratitude for their hard work and their vision.

CUMMINS HISTORY

An interview with Clessie Cummins' son, Lyle Clessie Cummins Jr.

by Jim Anderson, Bruce Armstrong, Robert Patton

Former Cummins CEO Irwin Miller Passes Away

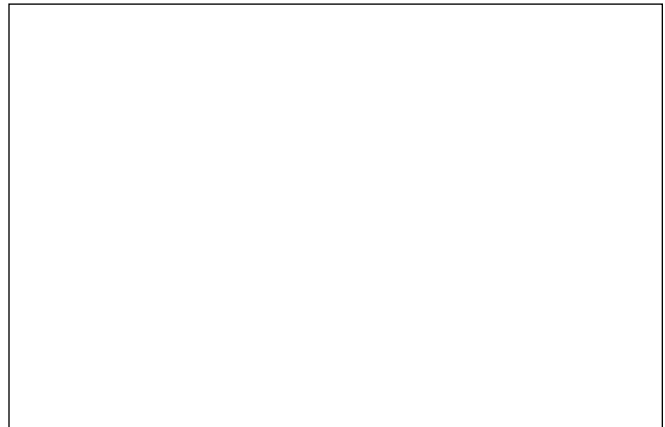
We note with sorrow the August 16, 2004, death of business icon and former Cummins, Inc., leader Joseph Irwin Miller. He was born in Columbus, Indiana, in 1909, and he was 95 years old at his death. Mr. Miller is being eulogized as a great business leader, social activist, and philanthropist, whose influence will continue well into the 21st century.

Irwin Miller is a family descendent (great nephew) of W.G. Irwin, who originally invested family money in Clessie Cummins, a fledgling engine maker whose company today still bears his name.

In addition to being a continuing financial backer of the company through the family investment foundation, and a company leader for over 40 years, Irwin Miller also served as the Company's conscience. He continually pushed for social change, racial equality, community involvement, and rank-and-file worker enhancement long before such ideas gained popular corporate interest. His activities outside the company included serving as president of the National Council of Churches in the 1960s, adviser to presidents, and a worldwide advisor to activists for social change.

As a very young man, Irwin Miller spent many hours with inventor Clessie Cummins, who was then developing a workable diesel engine. He went to work for Cummins Engine Company in 1934 as a general manager and was named company president in 1945. He became chairman of the board in 1951, where he began to implement a business strategy that transformed the (then) \$20-million dollar engine producer into a worldwide organization of engine and related equipment manufacturer with 2003 sales of \$6.3-billion. In the process, he also set the company's ethics in place that fostered innovative manufacturing techniques, innovative business strategies, and exemplary human rights innovations. He was as comfortable talking with a worker on the Cummins production line as he was interacting with fellow company board members or presidents, and was always interested in what each had to say.

In 1967, Esquire Magazine ran Miller's picture on its cover and proclaimed "this man ought to be the next president of the United States." He's well known in company circles for what became known as the "Irwin Miller Transparency Test." If an action, idea, or proposed business strategy could be justified to or approved by your local minister, then it passed the "Miller Transparency Test."



Phil Jones, Irwin Miller and Henry Schacht examine a midrange engine prototype mounted in a van, circa 1980. The decision to launch multiple new engine families concurrently was a risky gamble—a "bet the company" proposition, in Henry Schacht's words.

Mr. Miller's personal philosophy about the equality of all individuals is best characterized in his often-quoted remarks from 1983:

"In the search for character and commitment, we must rid ourselves of our inherited, even cherished biases and prejudices. Character, ability, and intelligence are not concentrated in one sex over the other, or in persons with certain accents, or in certain races, or in persons holding degrees from some universities over others. When we indulge ourselves in such irrational prejudices, we damage ourselves most of all, and ultimately assure ourselves of failure in competition with those more open and less biased."

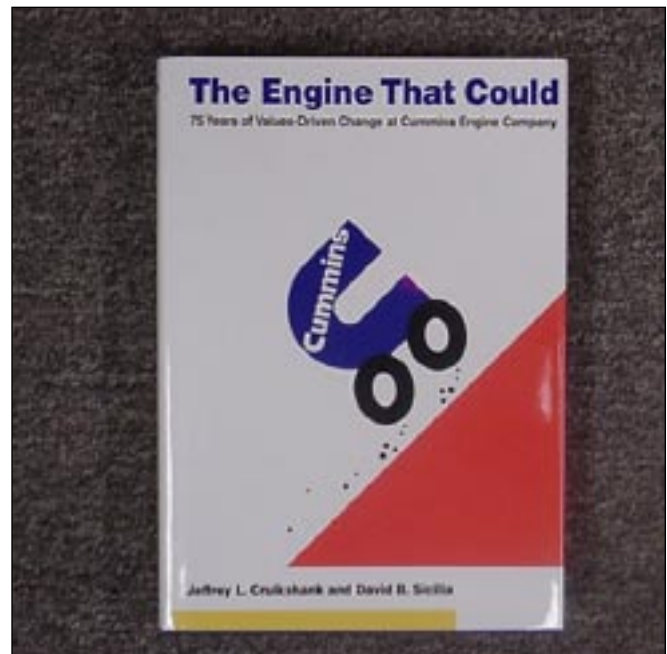
How does Mr. Miller fit into the history of Cummins Engine Company? A brief review of the book, *The Engine That Could*, published in 1996, the 75th anniversary of the company's founding, gives us some insight. What follows is a brief review by this article's author.

The Engine That Could—Book Review

Courtesy of the editor, I was lucky enough to read a copy of the book with the above title, written about the first 75 years of Cummins Engine Company. This book was published in 1997 by the Harvard Business School Press. Folks, this book ain't a fluff job, but rather an honest and searching look, warts and all, at a company that struggled for a long time before it could be counted as a success. Unfortunately, this book is now out of print, but if you're ever able to lay hands on a copy, be sure to read it—and keep it—or sell it to me.

Studying these pages shows how inventive and unusual this company has been. Creativity was and is required in order to compete successfully as America's only independent diesel engine manufacturing company. The book also tells how the rare quality of caring both about the company's customers and the company's employees has helped Cummins to become very prosperous after such a long struggle. The company has now grown to its present status as an international, multi-division company with thousands of employees and billions in sales to many customers worldwide, but it still cannot rest on its laurels.

Cummins Inc. (originally Cummins Engine Company) started with the rare combination of a talented inventor, Clessie Cummins, who almost single-handedly "dieselized" America's truck fleet, and an astute businessman and money man, W.G. Irwin, who took the long view and continued to invest family money into the fledgling company for many years because he was convinced the investment was good for the company and therefore good for the local economy. The company has grown ever since that shaky start without changing the core (central Indiana) values and core business of building our favorite diesel engines. These basic tenets were laid down by its original founders in 1919, and continued to be



enhanced and expanded by later Irwin family descendents who have been active in company and community affairs since. Of particular influence in this regard was Joseph Irwin Miller (W.G. Irwin's great nephew) who served (and ultimately led) the company for more than 40 years. Working with other Cummins leaders such as Henry Schact and Jim Henderson (whom your author had the pleasure of meeting in 1995 at the first TDR National Rally), Miller ensured the continuation of corporate community involvement and advanced human relations with company employees.

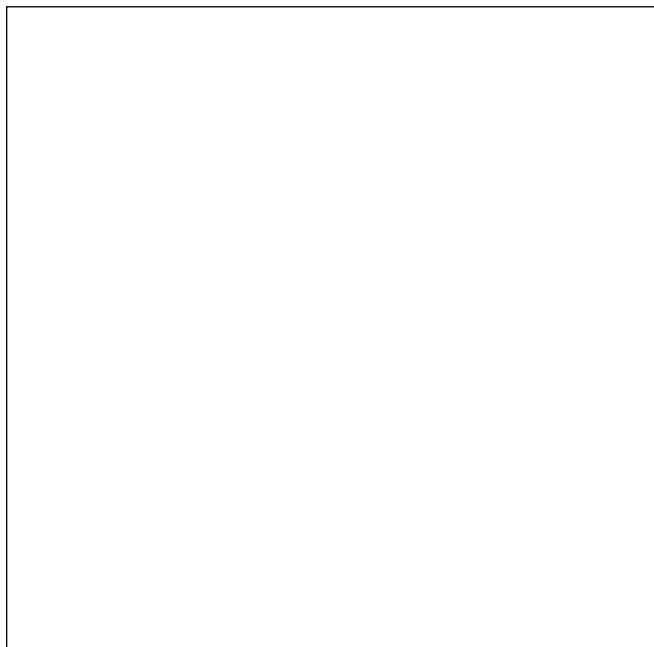
If you're ever passing through central Indiana on I-65, your writer suggests you take a short side trip through Columbus and its many Cummins facilities. Much of the town's amazing architecture is Cummins-inspired and supported. Call it "continuing corporate community responsibility," a rare commodity in today's lean and mean business world.

Bringing us up to date, the company today faces the challenges of having its engines meet the tough 2007 emission control standards that will make them 90 percent cleaner than today's already clean engines. The company has to invent some of the technology from scratch to accomplish this goal, but the company's continuing research investment in facilities and diesel combustion technology will ensure timely compliance.

A few 2007 test engines are now in service in fleets for field testing and validation. These engines will go through another round of modification and tweaking before each of the many engines in the Cummins lineup is certified as being able to meet the new emission standards while maintaining the power, durability, and quality that Cummins customers have always enjoyed. At the same time, Cummins must also be planning for new engine models and engine technologies that will keep it competitive in the future. As new engine and power range customers emerge, the company has to be ready and able to supply them.

You and I, as members of the Turbo Diesel Register, long ago sent the signal to Dodge that we prefer a Cummins diesel engine over all others. Dodge, so far, has made the decision to keep supplying Cummins engines in our trucks, even though their parent company (who has to be putting big pressure on Dodge to change) now owns two companies that make diesel engines, namely Mercedes-Benz division of DaimlerChrysler and Detroit Diesel Division, another division of DaimlerChrysler. Both makers offer engines that are in the right horsepower/torque range and could be made to fit under the hood of our favorite pickup.

So, if you like your Cummins, make some noise with the corporate folks whenever you get the chance. Cummins should be tooting its horn loudly too, lest it lose this high volume business.



Lyle Cummins at the wheel.

Back to the Story and Insight on Early Cummins History with Lyle Cummins

We've digressed and also editorialized a bit, let's get back to the history lesson. I'll now excerpt some bits of Cummins company history from my book review in TDR Issues 33 and 43 of *The Diesel Odyssey of Clessie Cummins*, written by his son, Lyle Cummins.

Lyle's book gives a first-hand look at Clessie's struggles as an inventor, his ultimate success as America's only independent engine builder, and his subsequent unhappy departure from the company in 1957 when he resigned from the board over compensation and patent disputes.

Clessie was born in 1888 and died in 1968. As a young man, Clessie served as chauffeur of the W.G. Irwin family. When Clessie began to work on refining the idea of diesel engines as useful power sources, W.G. Irwin became the money man to finance Clessie's research. W.G. Irwin's goal was to increase labor utilization in the local economy, thereby improving the local standard of living and making Columbus, Indiana, a better place to live and raise a family. (The company has ultimately accomplished these goals in many locales worldwide.)

TDR writer Bruce Armstrong had a personal interview with Lyle Cummins in August of 2004, of which we are fortunate to have a transcript. This was done at Lyle's home in Oregon where he continues to write books. He covered Clessie's early history, then moved on through his time at the engine company and later to his retirement in California where he and Lyle began work on other ideas Clessie had always wanted to explore.

Lyle takes us back to those early days of Cummins Engine Company and comments on the Clessie Cummins' first exploits with the diesel. In the interview, Bruce poses the question, "For readers who have not read *The Diesel Odyssey of Clessie Cummins*, give us an overview of your father's role as the founder of the 'American Diesel Engine.'" Lyle Cummins responds: "Dad wanted to build kerosene or small diesel oil/kerosene-burning engines. He had experience going down the Mississippi River in a 15-foot boat and having to convert this little gasoline engine to burn kerosene after the engine got hot. He was an inveterate reader. He knew what was going on in Europe with the diesel. I doubt if he'd seen a diesel until maybe 1912 when he was in Florida. But, when he got back to Columbus he opened up a machine shop that Mr. Irwin, his financial backer and the person that Dad chauffeured for, set him up to do. On the side, he was thinking about building these little kerosene-burning engines. There were a number of them that were being built in this country under U.S. patent licenses from R.M. Hvid, a transplanted Danish engineer in Chicago. Clessie went to Mr. Irwin with the idea of buying a Hvid license to build these farm engines. This led to the founding of the 'Cummins Oil Engine Company' in 1919. And, for one reason or another, the engines that they built in the six-horsepower size, ran pretty well. They built less than 20 of them, maybe, and then he got this contract through Hercules down in Evansville, Indiana. They were making 'Therm-oil' engines for Sears & Roebuck, and Dad was already machining injector



Cummins signed an agreement to sell the Hvid through the Sears Roebuck catalog on a money-back guarantee.

parts (nozzles) for Hercules. So, one thing led to another and Dad got in over his head because this smaller-sized engine had never been built and there were leaks and so many fuel system problems that the whole thing became a debacle.

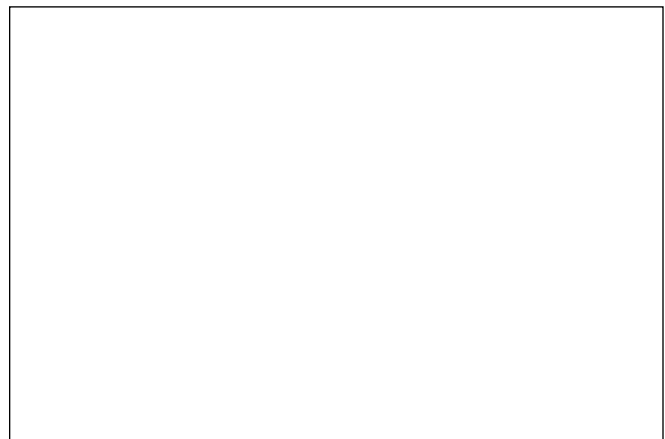
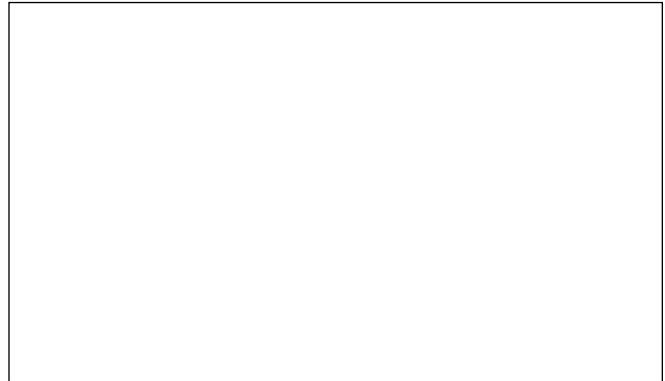
"In the meantime, Dad had ample engine-build capability going, so he decided to convert the engine to one for the marine market for the Gulf Cost shrimpers. They sold some down there that did pretty well at first and then troubles began. Only by doing contract machining were the doors kept open while a new fuel system was being developed during 1922 and 1923. In 1924 they came out with a diesel for generator sets and small boats in one, two, three, four and ultimately six-cylinders. By 1927 the engine had been accepted by the U.S. Light House Bureau as that specified for remote-powered, electric-powered lighthouses. But in 1929 the depression hit and they weren't selling many more of these engines. So Mr. Irwin said, 'We're going to close the company down.' That was where Dad got the idea, in desperation, of putting one of these diesels in a car, without the intention ever of really building an automobile engine, but just to keep the doors open. I mean, it was in the early stages, you might say, in desperation days, but with the publicity that he got for his actions it kept the engine company's doors open.

"Then came the Barnum & Bailey days, as Dad called them, of racing and setting new records down at Daytona Beach with the Packard Roadster and the Dusenbergs and then running non-stop at Indianapolis and taking that car to Europe. All the while they were developing, and finally building, a truck engine. The next events consisted of records across the country in trucks with this old, four-cylinder, marine engine. And so that is a brief genesis of getting into the trucking industry and totally pioneering it.

"In Europe, the diesels were very under-powered, their runs were short. There wasn't the need for heavy-duty, long-distance trucking. America needed a big rugged, strong engine and Europe's trucks were not like that. In fact, when I was working at American Bosch, the old fellow that was about ready to retire as the service manager had driven the first diesel powered Mercedes truck in the U.S. He said it was just horrible. Until the introduction of the Cummins 'H' engine in '32 no one had built a rugged enough engine that could deal with the long cross-country demands found here in the states. So that was really why Dad is to be considered as the father of the—and I stress this—the American truck diesel.

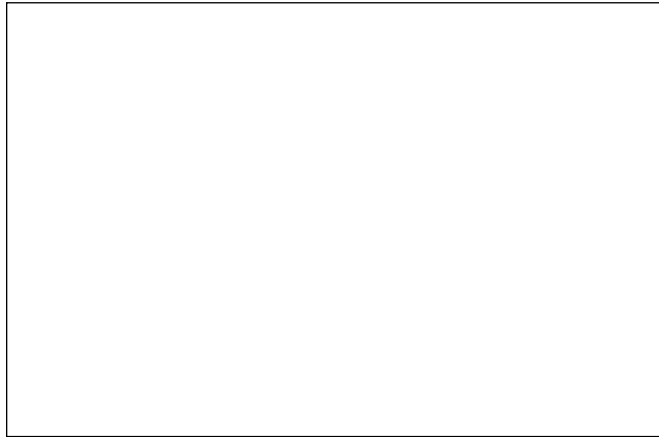
"I don't know how much more you want to cover, but the important thing about Dad was that he had the ideas. He was the genius behind the early fuel systems. He had barely an eighth grade education, but that didn't mean he wasn't educated. He knew; he had a seat-of-the-pants feel. He could visualize things and he could tell if it was going to work or it wasn't going to

On January 6, 1930, Clessie Cummins drove this 4 cylinder "U" powered Packard from Indianapolis to New York Auto Show on \$1.38 worth of furnace oil. Overnight he was a sensation: 800 miles, \$1.38 fuel cost, 33 MPG average. It was just the beginning of his promotional efforts.



In April 1930, he put the "U" engine in this Packard roadster. On sands at Daytona Beach, he set first diesel automobile land speed record of 80.389 MPH over 5 miles.

work. I mean, he could hire engineers to do the stresses and strains, but he could tell whether it was right. And he had the ability to charm people. He could sell an iceberg to an Eskimo because of his enthusiasm. There was something about him. Wherever he went, people liked him and people would help him. He called up people that were almost his competitors and he'd get information that would get him out of trouble. He could pick good people too. He hired an engineer from the Hvid Co., who had come down to help him out on something in the very early '20s, and stayed on and retired as head of engineering in the '50s. The head of sales was a White truck salesman that he met in the early '30s and he, too, retired from Cummins. He had an affinity to be able to draw people that would help him out and he understood everything. He was a journeyman machinist. He could make anything on the lathe or milling machine, or he could go out in the shop and reach into a barrel of parts and pick out the bad one. The shop people respected him because they knew he could get on that machine and make it work. So he had this broad spectrum of abilities."

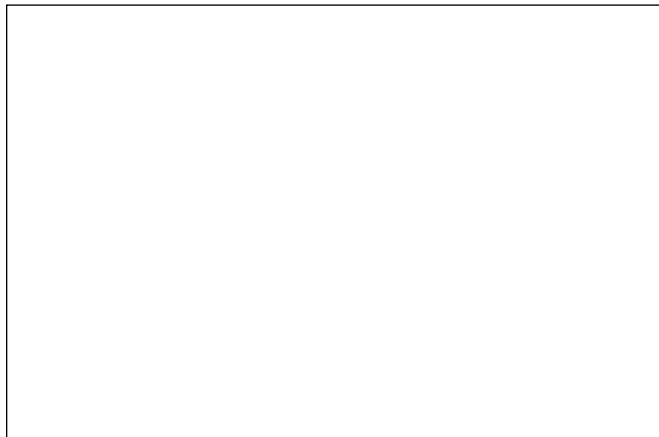


In December 1931, Clessie took this "H" engine-powered truck to Indy 500 track and drove it 14 days non-stop for 14,600 miles on \$17.54 worth of diesel fuel. All of his promotional efforts had begun to pay off. The H engine was 672 cubic-inches and produced 125 horsepower at 1800 rpm.

To continue with the history lesson, I'll refer back to Lyle's book, *The Diesel Odyssey of Clessie Cummins*. The time frame is the 30s and Clessie's next effort was to produce multi-cylinder engines for automotive use, and after many years of trying, he perfected a design that was installed in several cars and trucks that were driven around the country for publicity tours and endurance trials. All of his efforts finally led to the "dieselization" of America's truck fleet in the late 1940s and early 1950s.

As diesel engine manufacturing expanded in Columbus, new plants sprang up, and the labor force increased; but it wasn't until 1937 that the company turned a profit. All the while W.G. Irwin continued to supply money and credit.

Clessie Cummins' ever-inventive mind led to his patents for a unique pressure-time (PT) fuel injection using a low pressure "common rail" fuel distribution system. He contributed one facet of common rail fuel systems now using high pressure hydraulic injection on most automotive diesel engines of modern design. We call this system "new," but it's not. Such was the fertile mind of Clessie Cummins!



In 1937, Cummins added a supercharger to Model H. It increased horsepower to 180 (Later to 200.) The H was the first commercially available supercharged diesel sold in North America.

According to the book, Cummins did not play a very large role in WWII, despite turning most of their facilities over to military production. It seems that Cummins engines were mainly employed in generators rather than trucks or tanks as one might have expected (or hoped). For one thing, the government did not want diesel power in tanks even though Clessie had demonstrated its worth with a Cummins engine in a light tank. One of the main reasons was the military's concern over diesel fuel not being available in most theaters of war. Caterpillar had also designed a tank engine which was vetoed for the same reason.

After the war, Cummins benefited greatly from the rapid growth of the interstate highway system, which triggered demand for diesel construction equipment. The new roads of course generated a flood of truck sales. Many of the roads involved long, arduous grades of up to 6% or more, and soon the trucking companies were asking for more power. Initially Cummins worked on supercharging, but soon focused on turbocharging for efficiency reasons. The turbo had been developed well before WWII to boost power for ship diesels and by WWII for aircraft engines. Cummins saw it as a bright future for automotive diesels. Their early purchased turbos suffered many setbacks before succeeding. Their entry in the 1952 Indy 500 of a Kurtis Kraft-designed car with a 401 cubic inch turbocharged diesel set a track record of 139 mph, and held 5th place for 100 miles before retiring with engine problems. That time Clessie was not the driver and it marked the last race entry for the company. However, Clessie was a key contributor because that car had his newly invented PT (pressure-time) fuel injection system. The PT system was still in use at least 40 years later; it may have been his greatest invention. At any rate, it made lots of money for Cummins, but apparently relatively little for Clessie. It unfortunately triggered a disagreement between Clessie and the company, which contributed to his resignation in 1957 as Honorary Chairman of the Board. Another factor was the classic "N.I.H." factor ("not invented here") on the part of Nev Reiners, Cummins' head of engineering, with ideas Clessie was submitting to the company.



Post Resignation—Father and Son Work Together

Clessie had long ago identified a big problem with diesel-powered trucks. Since a diesel engine's air intake is unthrottled unlike that of a gasoline engine, there's no inherent "vacuum" braking on downhill descents. This led to many truck wrecks due to overheated brakes. Clessie intuitively knew there had to be a way to harness a diesel engine's high compression to make the engine do useful retarding work on downhill grades. In the late 50s Clessie and Lyle went to work on the problem in the basement of Clessie's California home. They tried one idea and then another, but finally they got on the right track. From the interview, Lyle explains how and what happened then: "What we were going to try to do was put something on the engine like a high pressure hydraulic pump with a distributor that would then open the valves and/or even a plunger pump, and I didn't like them. My dad called from Phoenix one night where he and mother had gone for a few days vacation. He was looking out the window when it hit him. Hey, the motion's already in the engine to do it, and by the time he got back, I had laid out some schematics and things. One thing led to another and then we got the idea of putting a J engine, one of the smaller Cummins engines, in a GMC '55 Suburban. With the test engine in place we then tied the rocker levers of two cylinders together mechanically and that proved the point on two cylinders."

Later, the Suburban could be heard descending the hills in Sausalito toward the Yacht Harbor "with two cylinders popping up through the exhaust

This car was a Kurtis-Kraft chassis built in California and driven by Freddie Agabashian. It was powered with a "J" Series engine laid flat on its side. The engine was turbocharged and it developed 430 horsepower at 4500 rpm. The engine marked the turbocharger engine era at Cummins. It was the first turbocharged car entered at Indy.

Freddie qualified car on pole position at 138.010 mph. Midway in race, car began to smoke. Several people inquired about the air cleaner. The car did not have one, there was no room. The car became known as world's most beautiful, most expensive, and fastest vacuum cleaner ever built. Air intake (low in the nose near the track surface) sucked in oil, rubber and grease from track into the turbo, disrupting air supply, It was pulled after 72 laps.

pipe, and you could hear it all over town." They immediately applied for a patent. Clessie and Lyle took their invention to Cummins, but at the time the company had no interest. The brake ultimately was produced by Jacobs Manufacturing Co., a drill chuck maker in Connecticut. That was the beginning of what is now called the "Jacobs Brake" diesel engine compression brake.

Lyle spent seven wonderful years working with his dad on the Jake brake and several other ideas.

In the interview, Lyle also told of several visits he had over recent years with Irwin Miller, and characterized Irwin Miller's and Clessie's relationship as one that sadly got "crossways on the runway." The breach was healed before Clessie's death, and Lyle Cummins had an amicable relationship with him before Miller passed away.

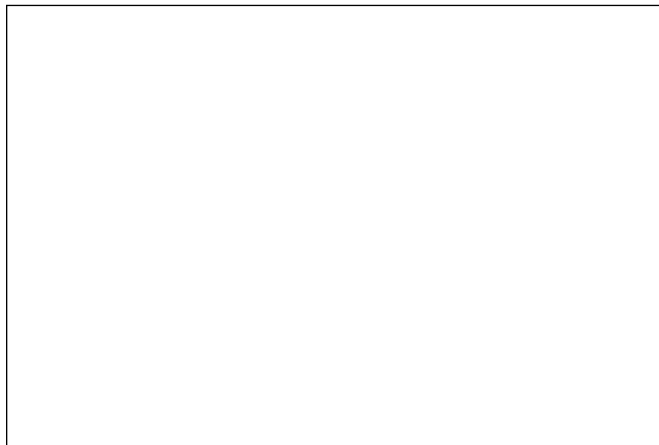
Today's Cummins

In his interview with Lyle, Bruce asked questions about the present-day Cummins and Cummins in the future. If you will recall last issue's discussion on brands and brand names, and specifically the Harley Davidson example, you'll have some insight into the line of questions that Bruce poses.

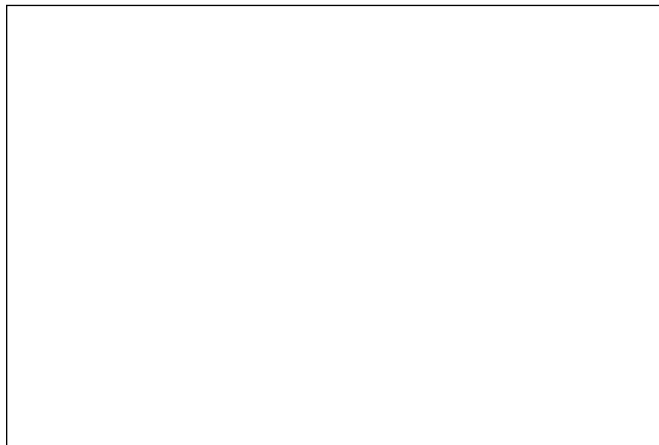
Q: You are aware of the Harley Davidson phenomenon of the last 25 years and its huge success. Their product can be described as being, at best, on a par with Japanese, certainly not better: in reality the Japanese product functionally is a superior product. But Harley Davidson makes more money as a company selling leather jackets than the Japanese do selling what are technically superior motorcycles because Harley Davidson has an aura of history, of being an American product. Do you feel that there's a possibility that an engine company like Cummins could achieve a like standing to compete against what are becoming increasingly effective foreign competitors—Volvo, Mercedes Benz, and others?

A: I feel as you do about Cummins drawing on its history to promote its products and perhaps the Dodge truck. However, I wonder if anything will move them to do it. They are focused on the future as, for the most part, they well should be but they, too, often turn a blind eye to the possibilities of drawing on a little from the past. Whatever might develop along this line that you folks could promote, would be terrific, but in no way should this be tied to any effort I might lend to it.

Q: As an engineer, you are no doubt aware of the looming 2007 emissions problems faced by diesels in this country. There are a number of different solutions people are looking at from exhaust gas recirculation, trap oxidizers, particulate filters, and urea injection. Who do you think is going to come up the winner in 2007 in solving these problems?



Clessie and son Lyle, who worked for him 1955-1963, in the office in Clessie's Sausalito, California, home.



In 1964, Cummins stock went on the NY Stock Exchange. The gentleman in the middle is the recently departed J.I. Miller.

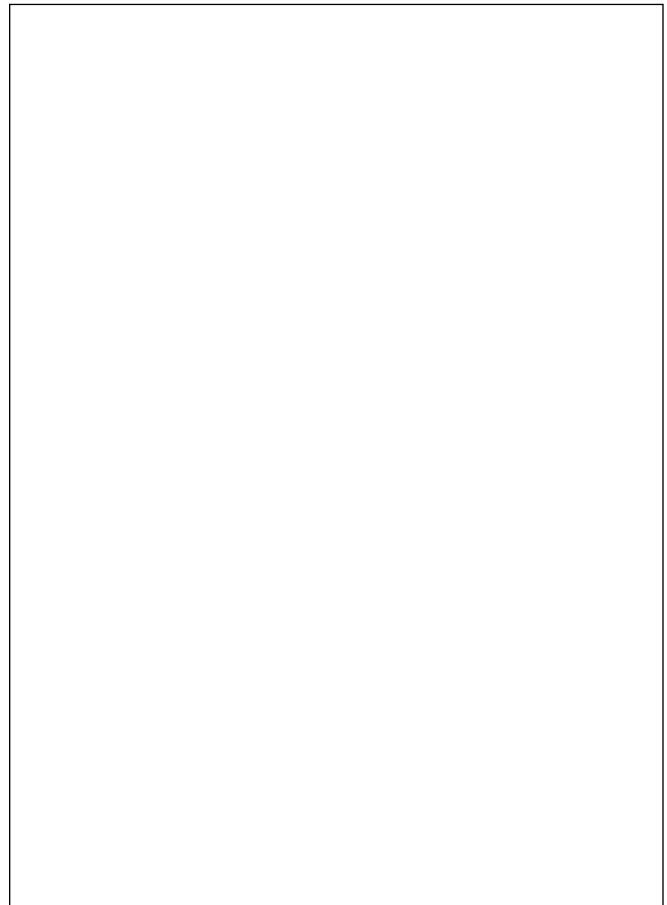
A: Oh, gosh. That's, you know, that's fortune telling, I have spent 99 percent of my time looking backwards rather than looking ahead. But I do feel that for the first time in it's history, Cummins has somebody heading its research, namely John Wall, who is an honest to God qualified man to be in that job. From what I gather John and his people have gone about things in the right way. Realize that there's more than one way to skin a cat—and pardon the expression with 'cat,' but I'd like to skin them over another matter. I think Cummins, the fact that they said what they were going to do with their approach to meeting the 2007 standard right now, made it work and it seems to be doing all right in the field.

Q: Any further thoughts on what Cummins should be doing to promote the brand?

A: Cummins has an absolutely fascinating story to tell. Do you realize that Cummins is the oldest diesel producer in this country? And it's one of a handful of the oldest diesel producers in the world. Cummins is still building under its original name and is not a division of somebody. And, you look at this—the biggest independent. Daimler and Benz merged in '29. So, I mean, if you just look at it from the standpoint of independence and autonomy, Cummins is the only one in the world. Now that's kind of unusual.

Epilogue

Cummins—Father of the American Truck Diesel. Cummins—American Diesel Innovation. Cummins—you fill in the marketing term. Cummins—perhaps nothing further is necessary. Speaking on behalf of TDR writers Anderson and Armstrong and interviewee Lyle Cummins, we have presented some portions of Cummins company history, and some snapshots of the folks who were intimately involved, as told from several viewpoints. Perhaps from these bits of information you can better understand how Cummins fits into the diesel engine world of today as Cummins, Inc., continues its "Diesel Odyssey."



Lyle poses behind Bruce's '02
2500 Turbo Diesel.

CUMMINS' INDEPENDENCE

Lyle Cummins on the oldest independent diesel builder in the world

by Lyle Cummins

"Of Rudolf Diesel's personal licensees, some original names remain, but they are not independently owned: MAN combined with Burmeister & Wain (banks have a share of the business too), Sulzer (Wärtsilä) and Mirlees. Deutz was a Diesel licensee and still builds engines under that name, but it is not an independent company. Some still make diesels and are older than Cummins like Daimler and Benz who separately built submarine diesels during the First World War and the name is DaimlerChrysler. Fiat built WWI sub diesels, but its large diesel business was sold off, and today it only makes car diesels (GM just paid 2 billion to get out of bed with Fiat and who knows if they'll survive). None in the US predate Cummins if you stick with either an original name and/or those who are an independent diesel maker. And so it goes. The original Swedish builder has gone through so many permutations it's not recognizable. Japan began building diesels in the early 1920s.

"So, depending on how you narrowly define things, Cummins is the oldest independent diesel builder, with its original location. DaimlerChrysler may even dispute this because the Chrysler name has been added. However, Burmeister & Wain, Deutz, Kolomna, MAN and Sulzer should always be mentioned because they are both historical and existing names going back to the beginning. All sell loose engines besides what MAN puts into its own trucks. The Daimler name, even though it's now longer, should be included because it was the second largest German sub diesel builder in WWI."

MR. CUMMINS

More about Clessie Cummins' early days

by Bill Millard

In later days Cummins Engine Company prospered, and could afford a staff of engineers. It's said one Friday afternoon the Company's founder (and original engineer) happened into a rather sizable meeting of those folks, and asked what they were doing. They told him that a newly upgraded engine had a low oil pressure problem, and they'd formed a committee to work out how to fix it. They'd appreciate his input, but the technical complexities would probably be too deep for him.

Well, he told them, it was getting late; why not just knock off for the weekend and sleep on it. Maybe it would be better on Monday. So most everyone left, and the founder asked his brother to quickly run up to their supplier and have them cut new oil pump gears a half-inch wider. Somebody else had the local foundry cast a new housing to fit. Parts in hand, they did the required machining and slapped the bigger pump on the engine. By Monday morning there was oil pressure to spare. The founder didn't much hold with committees: direct action was more his style.

Clessie was named after his grandmother. That's guaranteed trouble—must have triggered many schoolyard fights—but it didn't seem to do much harm in the long run, considering all he accomplished. He was to become an intuitive engineer and machinist, adventurous, intense, a master of the practical solution. That would be his life, and it would eventually ruin his health, but only after he'd made "Cummins" the road Diesel's most prominent first name.

Clessie Lyle Cummins was born on a farm near Indianapolis in 1888, in a generation that believed anything was possible if you just wanted to think and work hard enough. It was a generation that included Henry Ford, the Wright Brothers, and Charlie Nash; a generation who tended to achieve their own advanced degrees without benefit of formal education, a generation of people who were admired and respected for such accomplishments.

He grew up in Indiana—all over Indiana. The family was continually on-the-move, as his father was a partner in a barrel hoop factory, which relocated whenever the good elm was logged-out. So Clessie's schools were many and varied, as were his friends. Clessie was a personable guy, easy to meet, great sense of humor; those things would serve him well.

The family lived in the small town of Columbus, IN, when Clessie parted ways with school after the eighth grade. He had no patience with the classroom, but his real education had started early; He'd figured out quite young how to design and build steam engines and other mechanical marvels, some of which triggered calamities on his mother's cookstove. By the time he was a teen he was well on the way to being a self-taught engineer.

After dropping out of school he had short careers as a machinist, tester and inspector at a number of companies around Indiana—Reeves Pulley,

Marmon, Teetor-Hartley Motors (became Perfect Circle Piston Rings). But what he really wanted, at his still-young age, was to be able to live in Columbus near the family. That chance finally came (with a substantial pay cut) in the form of chauffeur duties with Columbus' Irwin banking family. Thus started his life-long, mostly happy relationship with William Glanton (W.G.) Irwin. He would be his friend for decades, his "second father," alternately his angel and his bane. So came financial backing for his engine enterprises, but with many strings attached.

Clessie was never "only a chauffeur," never even a full-time one, for that matter. Along the way he returned to Marmon several times, as well as repair automobiles and did job work in his own Columbus machine shop. And his experiments with engines never ceased. He settled on Diesel engines, but it could have been most anything and he'd have been successful, given a little backing. Such was Clessie's intelligence, persistence—and daring.

In 1912 he built a 16-foot boat, powered by a small gasoline engine. No big deal, except that after it was finished he recruited his brother-in-law (he'd married in 1910) to help him navigate it down the Mississippi to New Orleans. It was just a little boat ride that nearly got them killed a few times, but it taught him some of life's important lessons; one of which was that in places where gasoline was hard to find, an engine that would run on lesser fuels would have been great to have. (How things change! Now, with millions of diesels on the road, how often do diesel drivers have to prowl between the gas pumps to find their fuel?)

By 1916, contract machine work had crowded out auto repairs at the Cummins Machine Works, and Clessie had picked up a license to produce a Dutch Diesel design called the Hvid/Brons. Soon the Cummins Engine Company was making six-horsepower Hvid engines, which attracted the attention of Sears, Roebuck & Company. Clessie landed a Sears contract for more engines than he could possibly make, in largely-untried smaller sizes. Even with W.G.'s backing, Cummins couldn't keep up with Sears' demand, and the engines never worked too well anyway—Sears got lots of them back. (Editor's note: Folklore has it that Sears' money-back policy was the cause for many a return unit. The farmer would use the diesel pump engine for the season and post-season return it for a refund.) Finally, Cummins and Sears mutually gave it up as a bad job. This taught Clessie a lot about testing designs before marketing engines, but capacity would long be a worry in his small plants. It seems W.G. didn't want to saddle Columbus with a single, giant employer that could lay off half the town at a time. Not good for the community or the banking business, he said.

The Hvid episode made Clessie an expert on the problems of Diesel fuel distribution/injection and combustion chamber design, and by now he was busy working out ways to fix them—a life-long project that would produce dozens of patents, and ultimately make Cummins the leader in the business. By the early twenties Cummins was a rising name in marine and stationary applications.

But on the road? Well, imagine a day when everything out there that wasn't still horse-drawn was powered by gasoline, steam or electricity. The idea of a road diesel, if anyone mentioned it at all, would just have gotten a chuckle out of the average teamster. Diesels were just too heavy and unresponsive, and their power band was razor-thin. Well, Clessie was

thinking about it, thinking hard, and he wasn't chuckling. He could see a day when everyone's cars, not just trucks, would be propelled by strong, economical, cool-running, reliable Diesels. They only needed perfecting and he was almost there.

So, you can figure that when W.G. decided in late 1929 to stop backing Clessie's darn-fool, money-losing engine plant, Clessie knew he had to do something radical, and fast. He went out and bought a big, used Packard. He yanked out the engine, replaced it with one of his small, improved Diesels, and asked a highly irritated W.G. to go for a ride. W.G. couldn't see the point in any ride on a cold, January day ("About to be out of a job and you bought a what?"), until Clessie raised the hood and showed him what was underneath. That impressed W.G. and bought Clessie time to drive to New York for the beginning of the 1930 Auto Show. He made sure he did that in the beneficial company of news reporter friends. This famous ride, which grew into a 2,780-mile round-robin of the northeastern states (on \$7.70 worth of fuel) made national headlines that scooped all the automakers' latest offerings. At the end, Clessie was dead tired, but the road Diesel was on its way.

But it was by no means a shoo-in. Truckers are a "show-me" lot! After the Packard adventure came racing at Indianapolis and speed record competition at Daytona; 5,414 nonstop wintertime laps in a truck on the Indianapolis speedway; a record Coast-to-Coast run in the same truck; similar adventures in a bus; a race car tour of Europe . . . all to prove Diesel's potential advantages over gasoline power. Clessie personally manned the wheel for many of these strenuous escapades, preaching the cause at every opportunity.

Along the way he made many influential friends: guys like Eddie Rickenbacker, Jimmy Doolittle, Packard's Henry Joy, Henry and Edsel Ford. He was acquainted with Walter Chrysler, Charles Kettering and many other big names of his day. He did them favors, and they reciprocated.

And finally the message got through. The Company took off; in truck fleets, buses, trains, heavy equipment, just about everything made for hard work (except cars), diesel power became more and more widespread. Most often it bore the Cummins name: best in the business. Clessie's years of dedication finally bore fruit.

But hard work and strenuous adventure had taken a toll on his health. Something went wrong with his inner ear; he developed other worrying disorders, and his doctor told him he should get out of Indiana's climate. So after World War II he left. He tried Florida, found it too humid and buggy, and switched to California. He lived in Menlo Park, Gilroy, and Sausalito. He tried to keep his hands in Cummins Diesel, but found "out of sight, out of mind" soon took over. He was still full of good ideas, but his influence in his own Company slipped away.

Still, he wasn't really very good at retirement. For more than 20 years (with help from son Lyle) he continued his lifetime quest, the ultimate diesel fuel distribution and injection system. He came pretty close, too, but found that back in Indiana they'd come down with that well-known "not invented here" syndrome. That was the reaction from the other diesel manufacturers, too. Clessie did license his system to American Bosch, who found that it just

wouldn't sell as an aftermarket upgrade. (Is it coincidental that the fine injector pump on today's 5.9-liter comes from American Bosch?)

He also worked hard those days on something far better known today—something to make a truck's engine help the brakes slow things down. He'd learned that a diesel can be pretty poor at that: On that coast-to-coast record run his truck suffered a severe case of brake fade descending California's Cajon Pass. Skillful vehicle control and luck probably saved his life. So he worked out a way to harness compression to do the job, then demonstrated how effective it was. This time he did market the design to an outfit that makes drill chucks, and today the Jacobs Brake retards just about every heavy truck out there. (Oh, you know how truckers are—they've shortened the name!)

So this is a little story about one of America's automotive tycoons. Well, anyone in Clessie's position certainly became wealthy, right? Wrong! The Cummins family lived in very modest circumstances over the many years the company struggled, and Clessie never worked for more than a pretty ordinary salary, later a pension, plus far less in the way of patent royalties than he should have had coming. A life of opulence was not in the script: his efforts put his name on lots of engines, but they never made him rich.

Clessie left us in 1968, but I'm not through with him, nor should I be. He was far more than an engine geek, publicity seeker and master promoter of diesel power. He was also a devoted family man, faithful friend, experienced yachtsman, accomplished photographer, expert machinist; lots of things to crowd into a productive and eventful life. He tells you about himself in his 1967 book, *My Days With the Diesel*, and Lyle really fleshes out the story in *The Diesel Odyssey of Clessie Cummins*, 1998. They're both good reads, and I'd suggest you do that.

An Indiana boy named Clessie. He had no patience with school or committees, but he did pretty well for himself just the same—not to mention all of us who depend on trucks and our many other Diesel-powered servants. Let's not forget him.

DODGE HISTORY

The Dodge Brothers

by Bill Millard

In my volunteer job as Docent Trainer for the Towe Auto Museum I've played some category games (always fun) with the roster of pioneers in the American auto industry. I won't belabor it here, but they might be classified as the Visionaries, the Mechanics, the Entrepreneurs, the Managers, the Producers, the Artists and the Perfectionists. Of course, many of these guys straddled more than one category, but I went for the strongest traits. By this measure, the Dodge Brothers definitely fall under the 'mechanician' heading.

He's M'brother

They grew up poor in Niles, Michigan. Red-heads. Stout guys; reputedly pretty good in a bar fight. And close—about as close as brothers can be, John and Horace Dodge.

John and Horace were born into the machinist's trade, worked in their father's marine engine shop and learned their skills from childhood. That was their life story, really. They had the machine shop, and they had each other. John finished high school. Shakily, Horace dropped out. Their career would show that the machine shop had been a better teacher, anyway.

That particular shop wasn't their career, though. Dad was a good mechanic but a lousy businessman. John and Horace saw no future with him or in Niles. They wandered to Battle Creek, then Port Huron, and finally Detroit. The rest of the family came along. There was lots of work in Detroit. The brothers hired on as journeymen at the Murphy Boiler Works. The pattern was set even then. John "sold" the team and Horace furnished the skill to back up his promises. They did well as boilermakers: tough guys who could work metal. Their father did odd jobs around town.

They married late for that era; both at 28. Those unions (and subsequent ones) were apparently practical, if not too passionate. They didn't interfere much with their career.

Career. In the early '90s John came down with tuberculosis and had to quit boilermaking. Horace augmented their income by hiring on part-time with a local precision machine shop, Leland and Falconer. He learned the meaning of close tolerances from Henry Leland. John got better and the brothers moved with this knowledge to Dominion Typograph, on the Canadian side. They rode bicycles to work.

By '97 Horace got irritated with all the dirt fouling his bike's crankshaft bearing. He invented a new kind that kept the dirt out and John decided they should start their own shop to produce it. So began Evans & Dodge of Windsor, Ontario, somehow connected to Dominion Typograph (but no one remembers how). This enterprise moved the brothers around Canada, even separated them for a year. By 1901 it also finally raised some capital.

With that capital the brothers founded the Dodge Brothers machine works in Detroit. John and Horace were now car enthusiasts and the new business served the fast-growing automobile trade. One of their first orders was for a bunch of curved dash Oldsmobile transmissions. Ransom Olds had a third of the car business at that time. The brothers prospered.

Then the upstart Ford Motor Company came along. Henry Ford couldn't capitalize a manufacturing plant, so he asked John and Horace to build the engines and transmissions for his Model A Runabout. This would allow Henry to start up with 12 guys merely assembling cars. Nobody remembers why the Dodges were willing to jump in so deep; Ford sure couldn't pay cash until he sold cars. But something impressed them, and they were never afraid of risk.

The venture had a rocky start but it worked out pretty well. Dodge Brothers built the guts of most Fords for ten years and made everybody millionaires! John was appointed to the Board of the Ford Motor Company. Eventually, Ford elected to expand his plants and cut prices rather than pay dividends, which led to the big split.

Of course, that decision by Mr. Ford ended up in court. Don't they all? In 1917 John and Horace sued for the \$58 million they claimed the Ford stockholders should have gotten, but Mr. Ford had squandered it instead. The suit rattled around the courts for a year or so, then Mr. Ford counter-sued, and all the while the lawyers collected their fees. Finally, in 1919 the judge decided that Mr. Ford was wrong, that he owed John and Horace \$25 million. Mr. Ford didn't cry much when he wrote the check—it was a pretty cheap price for getting rid of those pesky Dodges.

By 1912-13 John and Horace wanted to build their own car, anyway. They'd had plenty of time to learn how to do a better job and the 1914 Dodge Brothers was indeed a much better job. It was half again more money than a Model T Ford and about three times the car. It had a great four-cylinder engine (it would power Dodge until 1928), sliding gears, self-starter, 12-volt electrical system, and all-steel body by Budd. It was one sweet automobile, right from the start. The new Dodge Main plant couldn't make enough of 'em.

Wealth hadn't changed these hearty brothers, though. They still liked long, hard work days and a few beers afterwards. They loved a good time, which eventually wore them down.

They went to New York in January 1920 to a Dodge dealers' convention, and Horace got pretty sick—the flu or pneumonia. Doctors thought they'd lost him. They said what he had was contagious and wouldn't let John into his room. So John sat outside the door for 96 hours. Horace got better but then John got sick. Two days later he was dead at 56 years old. Horace lingered poorly until the following December and died of what the doctors called hemorrhaging and cirrhosis. What do doctors know? It was a clear case of a broken heart.

Dodge Brothers never recovered. John and Horace hadn't let their families in on the business. They had no clue and apparently no interest. The sparkplugs were gone and eventually the bankers got it. Fortunately, the outfit limped along until 1928 when it passed to Walter Chrysler's able hands.

CHRYSLER: THE LIFE AND TIMES OF AN AUTOMOTIVE GENIUS

A book review of a must-read

by Jim Anderson

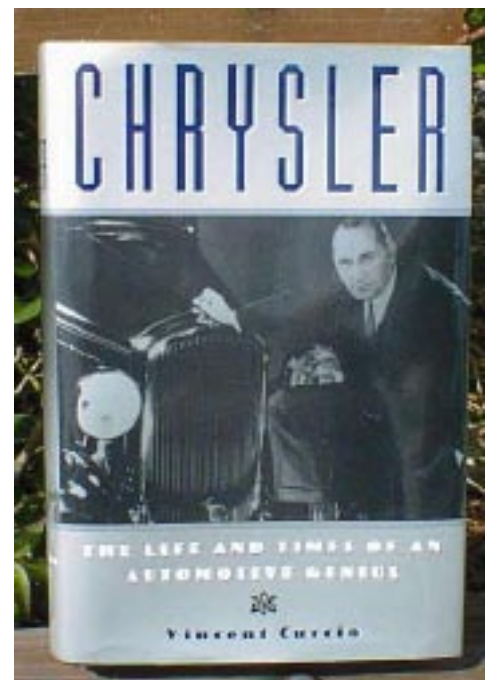
The book is simply titled *Chrysler: The Life and Times of an Automotive Genius*. It is written by Vincent Curcio, published by Oxford Press, and it contains 699 page in hardback.

The book outlines Walter P. Chrysler's life, but perhaps just as importantly, paints a vivid and detailed picture of the times and the places where he lived, worked, and eventually prospered. From the rough-and-ready railroad towns of the West in the 1890s (the bars and bordellos were the first buildings erected after the railroad came through), to the boardrooms of the mushrooming midwest automotive industry in the 1910s, 20s and 30s, to New York where Chrysler eventually ran his automotive empire, this book chronicles his walk (or race) through life.

His father was a railroad engineer, but Chrysler's interests were of a mechanical nature, and he rose through the ranks of the railroad roundhouse mechanics. There he learned how things work, and how to make them better. Later, he bought and disassembled his first automobile about 40 times until he perfectly understood just how all systems worked. This was the grounding in the automotive industry upon which he built his successful career.

Later, in the railroad industry, Chrysler learned how to manage organizations and people. Ultimately his management skills would make his name a household word. Author Curcio does an outstanding job in portraying the atmospheres in which Chrysler prospered as he and his growing family moved from tiny Western towns to the cities of the midwest and later to Michigan.

Large sections of this book deal with the evolution of auto manufacture, from its infancy to a mature industry producing thousands of examples each day. These sections also deal with other automotive greats such as Henry Ford, David Buick, the Dodge brothers, Durant, Hudson, Willys, and others, who either indirectly or directly had an influence on Chrysler's thinking or achievements. Another section deals with the evolution of mass production, which originally evolved in the manufacture of firearms. Mass production using standardized interchangeable parts is a technology taken for granted today, but in the early 1900s it was a brand new idea which the automotive manufacturers badly needed to master if the business was ever to become more than a cottage industry.



Curcio has skillfully combined the work of others with research of his own, just as Walter Chrysler was always careful to share the limelight with the others who helped him succeed by contributing to his various projects. Curcio's research took him six years to complete, and the resulting book will become a reference work for other automotive journalists in their future writings on a variety of automotive subjects.

Chrysler finally emerges in his 40s as an executive of power and great reputation with the solid skills to run a large company. He does this with great success at Buick and later at Willys and at Maxwell, before starting the company which bears his name. Along the way he accumulated rather large personal wealth, since he demanded and received a salary of a million dollars a year from one of his last employers, an unheard of sum at the time.

Of great interest to me is that Henry Ford was not the originator of mass production techniques. Nor was Ford's company a mass product manufacturer, since the Dodge brothers built most of the mechanical components, including engines and transmissions, that went into Ford's model T. Rather, Ford was an assembler in those days rather than a manufacturer. This is much like the large truck manufacturers of today that use engines, transmissions, and a host of other components, mostly designed and built by other companies. On the other hand, Chrysler became a manufacturer almost immediately, and pioneered many of the assembly line procedures still in use today. He also established new standards for the manufacture of parts, which made his cars better than almost any others.

Walter Chrysler was truly an automotive genius who always considered himself to be a mechanic. But, he accomplished more in one year than most automotive entrepreneurs of the time accomplished in a lifetime. He had the mechanical skills to recognize what was needed to make the automobile reliable and affordable, the manufacturing know-how to make plants run efficiently, the sales savvy to move products, and the organizational skills to build a budding dream into an automotive empire. He was one of the few who was able to make a profit on his products during the great depression of 1929-1933, all the while, taking care of his workforce for whom he genuinely cared. A rare person!

Of course, products move to the end user mostly through the efforts of salesmen, and while Chrysler was head of Buick, he had the best salesman (and trainer) in the business. The gentleman's nickname was "trainload," because that's how he sold Buick cars to distributors. At that time the Buick brand contributed more than half of the profits each year that General Motors posted. But GM president Durant spent money faster than the company could make it, causing Chrysler to strike out on his own path.

The book also describes the construction and occupation of the Chrysler building in Manhattan. The building is an "art-deco" example of Chrysler's personality, and stands as another of his successful business ventures.

Read the book and discover, as I did, the ins and outs, ups and downs, and the generally fun and exciting times of the automotive industry as it grew from a novelty to a necessity. No longer is a vehicle a toy for the rich; thanks to Chrysler, and the auto barons of the day, cars and trucks are universally affordable.

CHRYSLER HISTORY

Another perspective as a railroad man

by Bill Millard

Walter Percy Chrysler. (Did anyone ever call him Walt?) He thought up “process control” before anyone put that name to it—never saw a setup that couldn’t be improved. He had four careers, all successful. Most of us don’t do things like that.

He was born in 1875, grew up in small-town Kansas, and went to a public school. He worked in a grocery then signed on with the Union Pacific as an engine wiper. Didn’t wiper for long. In nine years he was the superintendent of motive power for the Chicago Great Western. But he was starting to get bugged—thought he could do better in the manufacturing end of the business. Most people never made that transition, but most people didn’t combine mechanical smarts with sharp management and financial instincts, either. Walter did, and when he found out that the American Locomotive Company’s Pittsburgh works needed a manager, he landed the job.

ALCO wasn’t sorry. Within two years Walter had carved so much waste out of the operation that it was turning its biggest profit ever. So, they made him general manager of the whole company. But he wasn’t forty yet, and still restless. The railroad business was good, but he knew that the future was definitely the automobile.

In fact, that didn’t dawn on him suddenly. While still with the Chicago Great Western he visited the Chicago automobile show, whose centerpiece was a great, gorgeous white Locomobile with red leather seats. \$5,000. He had \$700, and he also had a wife and two kids—might as well have wanted the Moon. So he forgot about it, right? Wrong! He borrowed \$4,300 and bought it. After his wife recovered, he took it all apart and put it back together again. About forty times. Until the car told him all it could about its technology. Walter was an intense guy.

There were some banker friends who’d noticed his ingenuity, and in 1911 when Charles Nash bumped Billy Durant as head of General Motors, they suggested that Walter should move to Nash’s old desk at Buick. He moved, and Buick took off just as ALCO had. Walter built a dynamic team and drove improvements in every corner of the company. Energy and brains. Took production from forty to almost 600 cars a day in eight years, and left Buick with profits better than \$48 million a year. But leave Buick he did, because by 1915 Billy Durant was back, and Billy’s butterfly management style drove Walter bonkers. He’d had a good salary and considered retirement, but at that moment John North Willys had fallen on hard times at Willys-Overland, and the bankers asked Walter in to save the company. While saving Willys, he was also picking up the threadbare reins of Maxwell-Chalmers. Only two jobs—no problem!

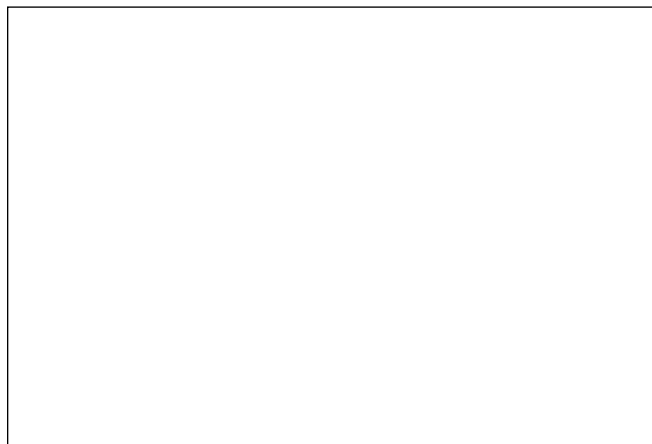
By then Walter had signed on a brilliant engineering team. Fred Zeder, Owen Skelton and Carl Breer, formerly of Studebaker, would cut a swath of

automotive advancement 33 years wide. They'd had a new Willys mostly finished, but Billy Durant got that. It became the Flint. Meanwhile, Walter junked the Chalmers and has his "three musketeers" build a powerful new engine for the Maxwell, put on hydraulic brakes and affix his name to its nose. The 1924 Chrysler Six was a great car from the start. And the new Chrysler Corporation was a winner, too. He brought in Dodge and invented Plymouth in 1928; then proceeded to put heat on Ford and General Motors. For the 1933-1934 Chicago Century of Progress the nine-year-old Chrysler Corporation built a pavilion almost as big as the Other Two. The Big Three had arrived!

The new company hardly stumbled when the Depression hit—they were debt-free, in fact, by 1936. The stumble came with the introduction of the Airflow series in '34. An engineering triumph, the Airflow: technically advanced, ultra-tough, smoothly aerodynamic—and bone-ugly. They gathered dust and sent Chrysler into a twenty-year conservative streak.

Walter stayed with it until he retired in 1935, avid as ever to spot and fix processes that idled man or machine, but managing to do that without being hated. He passed on in 1940.

Walter Percy Chrysler. Railroad man, High-burner. Last American to start a surviving car company.



The 1930's vintage Chrysler Airflow.

CHRYSLER'S "THREE MUSKETEERS"

Chrysler's famous engineers

by Bill Millard

I think you'd agree that Walt Chrysler was a genius. Anyone who could make a go of a start-up car company by the mid-1920s had to be a master of organization, finance and production. But, most importantly, he had to offer a product people wanted: An automobile several cuts above the competition. I could argue that Chrysler Corporation hit the pavement running exactly because of filling that niche. Right away Chrysler became the industry's leader in engineering innovation.

You might ask, how did Walt do this? He might have been one helluva mechanic and a born manager, but he certainly wasn't an engineer. Well, it turned out he didn't have to be, because he had the "Three Musketeers."

Excuse me—the three what?

Well, maybe you know that Walt left Buick in 1919 after he'd finally had enough of Billy Durant. At that point he had every intention of retiring, but he was still fairly young and full of energy, and some bankers were trying to get him to rescue struggling Willys-Overland. So off he went to Elizabeth, New Jersey.

There he found a mess, and most of that mess was the design of the outfit's cars. Seems John North Willys had always been stronger on sales than product, so Walt needed good engineering help, and he needed it quick. He happened to learn about these three sharp, young, engineers who'd been doing great things for Studebaker in South Bend, Indiana, so he gave them a call and here they came, their crew of 28 in tow. Hired guns, or should we say, hired slide rules? Thus started a long and distinctly productive association. Productive for about any car owner, even today.

Carl Breer, Fred Zeder and Owen Skelton: We'll call 'em "B-Z-S". The sequence doesn't matter much, because it's apparent that in 35 years this inseparable team never let ego get in their way. That's only one remarkable aspect of their truly remarkable story. Walt had made a fortunate choice indeed.

In Elizabeth B-Z-S quickly discovered that the Willys-Overland's defects could be isolated to the area directly between the front and rear bumpers. The chassis and suspension were full of serious flaws, but certainly no more than the engine and drivetrain! They pretty much had to start with



a clean sheet of paper, and in little more than no time. They went right to work and had things fairly well straightened out when they suddenly found out that Walt's Willys days were ended and the Elizabeth plant was, after all, going into receivership.

B-Z-S and crew were in a fair way to hit the street at that moment, but by then Walt had gone back to Detroit to take on Maxwell-Chalmers' trouble. B-Z-S talked Walt into a little interim help in keeping things together. With that help they opened a consulting engineering business in Newark, and in a short while were working for Billy Durant's fledgling Durant Motors: A new engine for the Locomobile; design work on the Flint and the Star. But they, too, soon despaired of Billy's butterfly management style, not to mention his last-minute payment habits. Besides, it was obvious that shoddy production practices had been well entrenched at Durant before they arrived on the scene. You can bet they were happy to hear a new summons from Walt Chrysler.

Walt had found a disaster at Maxwell-Chalmers as well, especially with the Chalmers part. Jon Maxwell was long gone from the Maxwell side by then, and things were seriously adrift. Chalmers had been purchased in even worse condition. To call their products junk would be over-complimentary, and potential buyers were treating them accordingly. It was a fertile field indeed for the likes of Messrs. Breer, Zeder and Skelton, and they came. And they brought along a brand new baby.

But—hold on a minute! Who were these guys, anyway?

Well, Carl Breer was born in Los Angeles in 1883 and grew up around his father's blacksmith shop. By the time he was seventeen he'd already designed and built his own steam car, a neat little rig that helped him get his first job with the Tourist Automobile Company. Soon he enrolled in the Throop Polytechnic Institute in Pasadena (today we know it as Cal Tech), then went on to Stanford, receiving his degree in 1909. On graduating he was selected by Allis-Chalmers Manufacturing Company in West Allis, Wisconsin, to take part in a two-year engineering apprenticeship program. There he met and became close friends with Fred Zeder (future brother-in-law). After that he returned to the coast to become superintendent of the Moreland Truck Company. By 1914 he had moved on to help form the Home Electric Auto Works; by 1916 he'd sold out of that and started his own engineering and fabrication business.

Fred Zeder was born in Bay City, Michigan, in 1886. He earned his mechanical engineering degree from the University of Michigan in 1909 and, as I've said, followed that with his stint at Allis-Chalmers. From there he worked for a short time helping build a power plant in Detroit, and then went to work for Walt Flanders at E-M-F, taking over his laboratory. When Studebaker took over E-M-F, Fred became a consulting engineer, then (in 1914) their chief engineer.

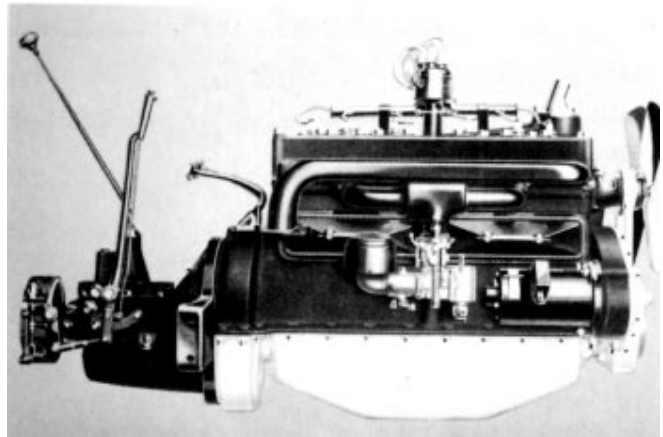
Owen Skelton was born in Edgerton, Ohio, in 1886, and entered the automobile business at a young age. From 1905 to 1907 he worked for Pope-Toledo, then Willys-Overland (same Toledo, Ohio, factory) as a design draftsman. Then he took his skills to the Packard Motor Company in Detroit, where he specialized in transmissions. This led him to be the "gears guy" of B-Z-S.

So we've set the stage for 1916, when Fred Zeder had been struggling with Studebaker's engineering mess and needed some really high-grade help. Thus came the call for Carl and Owen to join him. They did—and completed the legendary trio.

B-Z-S found lots of opportunities to exercise their skills. Before Studebaker took over, the jokesters had dreamed up many alternatives to the Everitt-Metzger-Flanders of E-M-F: "Every Mechanical Failure", "Every Morning Fixit", stuff like that, and the cars gave them ample ammunition. Barney Everitt was a coach builder, Bill Metzger a super-salesman and Walt Flanders an ace production man, but the engineering side had been a little weak. Studebaker, that old-line leader in the wagon business, didn't relish having its good name associated with dubious design and quality.

In short order B-Z-S found and fixed a long list of the Studebaker's faults, like engine block weakness, bad main bearings, iffy carburetion and manifolding, oil consumption, noisy valves, bad transmission and universal joints—problems all through the cars. It was a matchless apprenticeship for their future months with Willys-Overland, with Maxwell and in their years at Chrysler.

From their aforementioned Durant days they'd been working on a baby: A cast-iron iron baby. An in-line, six-cylinder, deep-breathing, L-head engine of 3.2 liters (195 cubes; small for those days), that made 68 horsepower at 3,200 rpm. That's twenty horsepower per liter, unheard of among production engines in the early '20s. Seven mains, counterbalanced crank, pressure lubrication, filtered oil and air, heads designed to tolerate a 4.7:1 compression ratio while burning that day's poor fuel. This thing was true, dyno-proven, gold. They used it to nudge Walt toward the idea of launching a brand-new car, and did that by dropping it into a nondescript beater of some kind (nobody remembers which) and prowling around the public roads picking off Cadillacs and Lincolns. Walt enjoyed that, and he also enjoyed the prospect of seeing his name painted on the Maxwell smokestack. So he told B-Z-S, "Let's go!"



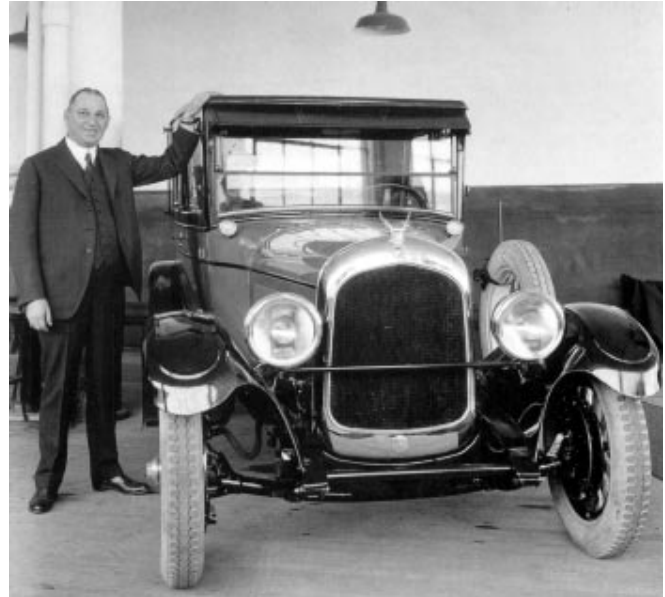
They worked out a car to go with the engine, and it was just as good: The industry's first production four-wheel hydraulic brakes (developed elsewhere, but perfected at Chrysler), great body, drivetrain, steering and suspension dynamics, top speed just behind that of a Packard. All this had a medium-range price tag and, best of all, the Chrysler name on its nose. It was introduced in January, 1924, as the Model B-70 (as in miles per hour). By 1925, 32,000 Chryslers had sold.

In 1926 the improved Maxwell was rebadged as the economy-series Chrysler Model F-58, minus four-wheel brakes and some of the other big-Chrysler goodies, but still a very solid car.

And did this lineup impress the car-buying public? Only enough to put this upstart producer in fifth-place within two years after launch. Now, remember that the auto industry was in a huge shakeout by this time,

years before the big crash of '29 would wipe out most of whoever would be left by then. You have to believe there were lots of neverwozzer cars out there, and people were getting real good at telling the good from the bad. The new Chrysler—along with Walt's reputation and some well-placed advertising—won this game hands-down.

We know how it went from there: Just about straight up. In 1928 Walt gathered in Dodge Brothers (to capture that great name and a fine automobile plant) and launched the Plymouth and DeSoto (to fill out the Chrysler line). The outfit was so strong that they weathered those deadly 1930-'33 years with hardly a stumble; they had the original corporate debt retired by 1936 when most of the few left standing were struggling to stay alive. The Chrysler Pavilion at Chicago's 1933-'34 Century of Progress World's Fair rivaled GM's, and arrived one full season before Ford got there. Strong stuff for a new outfit in tough times, and it couldn't have happened without B-Z-S's technical magic.



A list of things they pioneered over the years would be way too long for this space. Just skimming the top we find stuff like self-lubricating bearings, downdraft carburation, the automatic overdrive, the "fluid drive" torque convertor, shock absorbers, "synchronized" suspension and rubber spring shackle bushings, rubber/steel bonded engine mounts, all helical-gear transmissions, the production Hemi V-8 engine, electrical power windows, vast improvements in passenger comfort . . . it's about endless. These guys (and their staff) were a secret weapon!

Of course they were human, too, and occasionally they stumbled. Their real whopper was arguably their greatest technological triumph. It was called "Airflow."

The dynamics of air flow in the early 1930s was a foreign notion when it came to that day's boxy automobiles. Indeed, B-Z-S, taking their cues from birds and airplanes (and some primitive wind-tunnel work) had discovered the typical car had better aerodynamics going backwards! They were also convinced that a unitary body-chassis structure—pioneered years earlier in Europe—was the coming thing (right again!). So they prototyped and secretly tested their wildly-advanced creation—smooth, curvaceous, headlights in fenders and fenders blended to body, tough enough to drive away after rolling down a cliff. In production form it was an engineering tour de force and a huge attention-getter at the Century of Progress.



But all wasn't as smooth as that body. First of all, Walt was afraid GM was going to scoop him with a streamliner of their own, so he made a rare

mistake: He pushed for production before things were fully sorted out, and quite a few 1934 Chryslers and DeSotos were lemons.

Then there was that matter of looks. Engineering powerhouse that Chrysler was, they cut stylists little slack (only GM had a Harley Earl . . .) and the buying public tended to lose focus on technical excellence while their '30s eyes were seeing pure old bone-ugly. Carl Breer went to his grave thinking his dream car was the prettiest thing ever built, but he was darn near alone in that. (Ironically, in today's angular/bulbous "retro" world the Airflow would probably be red hot!)

Thus at the end of 1936 the Airflow and the Depression had dealt the Company a serious whack, and a no-longer-healthy Walt Chrysler had retired. The reins passed to the hands of Walt's long-time lieutenant K.T. Keller and the Chrysler line fell into a 20-year conservative streak. Oh, the B-Z-S technology kept coming, but in my early years I saw Chryslers as cars even my grandfathers would be too cool to drive. Keller, after all, demanded as late as the early '50s that Chryslers roofs be tall enough to clear men's hats. My, how li'l ol' Mopar has changed!

Walt Chrysler died in 1940; Carl Breer, Fred Zeder and Owen Skelton retired in 1951. All three are gone now, of course, but their legacy surrounds us whenever we drive: In any number of ways it's no less than the modern automobile.

So let's raise our swords to Walt's Three Musketeers!

DAIMLER CHRYSLER MERGER

A book review of “Taken for a Ride”

by Jim Anderson

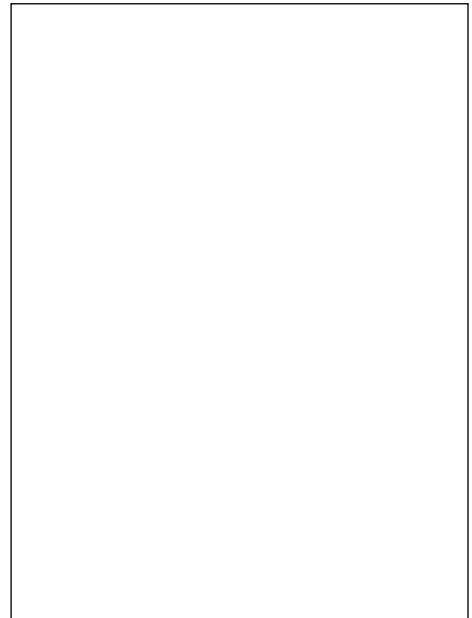
The following is a book review of the latest glimpse into the takeover game in corporate America. This book is by Detroit newspaper automotive journalists, Bill Vlasic and Bradley Stertz, and is published by William Morrow Company, and will cost you \$26 at your local bookseller. It is aptly titled *Taken for a Ride: How Daimler-Benz drove off with Chrysler*. The book details how Daimler-Benz of Germany and Chrysler Corporation of America became joined in an event called a merger. If you are looking for simple entertainment, reading this book may simply leave a bad taste in your mouth as it did in mine. It chronicles the demise of two respected automotive names as independent entities. In the end, it isn't a “merger.” Life at Chrysler will never be the same again, while life at Mercedes Benz will change very little.

Let's take a quick look at the corporate histories of both Daimler-Benz, home of the three-pointed star logo, and at Chrysler Corporation, home of the Pentastar logo.

Carl Benz built one of the world's first motorcars in 1896, naming it after his daughter, Mercedes. The company eventually grew into a worldwide concern selling automobiles, heavy trucks, airplanes, and other high-tech products. Daimler was the money man, and also built a car, so they combined to form Daimler-Benz. They have long been known for quality and engineering prowess in the automotive world.

Under its new corporate head, Juergen Schrempp, Daimler-Benz began acquiring companies a few years ago. Daimler-Benz would then inject those subsidiaries with its aggressive (some say “blitzkrieg”) tactics and corporate culture. Each acquisition was carefully researched, the attack well planned, and any resistance by the recipient company was quickly overwhelmed. Call it the “General” effectively directing his troops to win the war.

While the company is undeniably very successful, there are many bodies littering the roadside along its path to power as one of the world's largest automotive companies. Corporate acquisitions affecting us in America include the purchase of Freightliner Corp, one of America's largest truck manufacturers, who in turn purchased (using Daimler money) the venerable American La France Fire Truck Company (an ego trip for Freightliner president Jim Hebe who used to sell ALF fire trucks). Freightliner also purchased Ford's heavy truck division (again using Daimler money), renaming it Sterling. They have also recently purchased Western Star of



Canada, another medium size truck manufacturer, and have purchased Detroit Diesel, who own about a third of the American heavy-duty truck diesel engine business. Along the way, as we all know, they also acquired Chrysler Corporation, the subject of this book.

Chrysler Corporation, primarily based in the US, is an amalgam of several companies formed under the auspices of Walter P. Chrysler in the 1930s. In the 1950s Chrysler earned a reputation for well-engineered popularly priced cars. They became a solid player in the "big three". The 1960s and '70s, the company slipped and was known for poor engineering, quirky styling, and very poor assembly quality. America's automakers began sorting themselves out as the "big two". Customers stayed away in droves, and Chrysler nearly went under until a government loan saved the day. Lee Iacocca, father of the Ford Mustang, and perhaps the world's best known car salesman, was brought in to rescue the ailing automaker. He accomplished the task and turned the company around. Chrysler again became known as a major player in the domestic auto market, with some audacious moves further enhancing its image in the marketplace. An example is the installation of a Cummins diesel engine, known for its reliability and longevity, into its stodgy, aging, pickup line. The Turbo Diesel stole almost all of GM's diesel pickup truck business and now accounts for about 40 percent of the diesel pickup market. Later styling changes made Dodge a successful competitor against Ford in the hotly contested pickup truck market segment. Other examples are the recent introduction of the radically styled P.T. Cruiser trucklet, and the Prowler sports car, of which there are no competitors among the big three domestic automakers.

In the mid 90s Chrysler Chairman Robert Eaton was surprised to find his company was the subject of a takeover move by Las Vegas multi-billionaire Kirk Kerkorian, who had teamed up with the aforementioned Iacocca. The Chrysler board quickly moved to block any such maneuver by Kerkorian, who just happens to be Chrysler's largest stockholder. The thought of being owned by a Las Vegas gambler, and again being run by Iacocca, who was hard enough to get rid of in 1992—galvanized the Chrysler board to act to avoid this hostile takeover attempt. Firewalls were erected on all fronts.

Eaton, however, realized that Chrysler had to join hands with somebody in order to become a global company. So far, its overseas marketing attempts had netted nothing but losses. He felt that if Chrysler continued to go it alone, the company would disappear within 20 years.

Therefore, Eaton was open to the timely overture of Daimler-Benz Chairman Juergen Schrempp. The Daimler-Benz motive: Schrempp felt his company badly needed a mass manufacturer of lower cost automobiles and trucks in order for his company to survive. He had identified that Chrysler would make a good fit, although he was also approaching Ford and Nissan.

While Eaton thought he was looking at a partial merger, that is, the sharing of technologies and purchasing, Schrempp was cagily looking at nothing short of total dominance and absorption of a major company into the Daimler organization—and he was going to run it all!

The merger of Daimler-Benz and Chrysler was heralded as a milestone by the automotive press. Schrempp stated it was not Daimler's intention to make any changes, as they simply wanted to share engineering and parts

purchasing power, and gain a window into the American mass automobile market. Lest you still believe this was an equal merger, look who is calling the shots and has the money! There have been several recent articles in automotive publications detailing the corporate infighting, and Chrysler's corporate resistance to the new culture that is slowly but surely being imposed on it by its German relatives. This book tells you how it went, and how the Daimler "wolf" dined at the corporate dinner table with the Chrysler "Little Red Riding Hood." Red Riding Hood was simply out of her league when it came to the big worldwide (or worldwide) player. The merger was said to have been accomplished in just three weeks.

The story twists and turns through the many trips back and forth across the Atlantic, the many meetings of staffs and division heads, the votes of boards of directors, and the personalities and egos of the big players who put their names on the merger agreement. It looks at the emerging new company, and who the players are, and who has fallen battered and broken like a worn out Plymouth taxi by the wayside.

As the thorough newsmen that they are, the authors have painstakingly sifted facts from rumors, then checked the facts with more than one source. We the readers have the distilled story, as straight as it can ever be told without having been there ourselves. It moves along faster than other books of the same type of subject such as *On a Clear Day You Can See General Motors*, and the book outlining the buyout and dismantling of RJR-Nabisco, or *Fire and Ice*, the description of the Revlon empire created by eccentric Charlie Revson.

While reading *Taken for a Ride* you may laugh at the corporate antics, or be saddened over the loss of good and talented people. You may be simply indifferent to it all, but this book will also give you some insight into modern corporate maneuvering inherent in the constant quest for position, market share, and dollars

DAIMLER CHRYSLER TODAY

TURBO DIESEL REGISTER

How the TDR membership group got its start

by Robert Patton

How did the Turbo Diesel Register get its start? First off, I'm a car nut. A car nut that was in search of a tow vehicle for my admittedly small collection of automobiles. As you can imagine, the search for the right tow vehicle took me in the direction of the Dodge/Cummins Turbo Diesel. My search was aided by the fact that my real job was in the diesel engine profession as a Cummins distributor product support representative. Do I have a good knowledge of the Turbo Diesel engine? Well, maybe. I'll let you be the judge.

Back to the story. As an automotive enthusiast, I am a member of a handful of car club/register type publications. In addition, I subscribe to just about every car and truck monthly publication in hopes that I can learn something more about my vehicles. The only vehicle I owned that didn't have its own club was the Turbo Diesel. The light went on. Why not start a Turbo Diesel club? The light flickered. I knew the immediate answer: not enough time, no money, and who would write the articles? Needless to say, the idea got put on the back burner. Another great idea, but . . .

Positive discussion with other club/register publishers and an unofficial "good luck" or two from the manufacturers, and, well, I was still hesitant. Back to the all important concerns: time, money and writing skills. Time? It is nothing to stay up until 2:00 a.m. Money? What the heck, take out a second mortgage. And writing skills? You've heard the saying, "If it is to be, it is up to me." So, here goes.

The Turbo Diesel Register. As a membership group we need your input to make the register a publication that meets your expectations for entertainment, information and insight. Also, I'll need your help in recruiting new members. I must take this opportunity to thank those at Cummins and Dodge for their input and their help too.

With member and manufacturer support, the TDR is now 13 years old with over 20,000 members.

As we continue into our 14th year, it is rewarding to have so many of you send us your comments saying that you look forward to future issues. I've had a most enjoyable time putting the TDR together for you. Enjoy the Register, and spread the word about the TDR!