

A man in a light blue suit and dark tie stands with his arms crossed in front of a Formula Vee race car. The car is white with red and blue accents. A Goodyear logo is visible on the side of the car, and the number '31' is prominently displayed. The background is a grey brick wall.

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Ray Caldwell:

**Producer of the No. 1 Formula Vee race car—
user of the No. 1 tire. Story inside**



Autodynamics Corporation
'Vee' for victory

RAY CALDWELL is a Henry Ford with a head start.

Ford built his first car in a shed in Detroit in 1896, when little was known about automotive engineering and a lot of people were learning about it in their stables and sheds.

Caldwell built his first car in half of his two-car garage in Marblehead, Mass., in 1964, when a lot was known about automotive engineering and most people were leaving auto making to the factories.

Ford's first car was a 500-pound run-

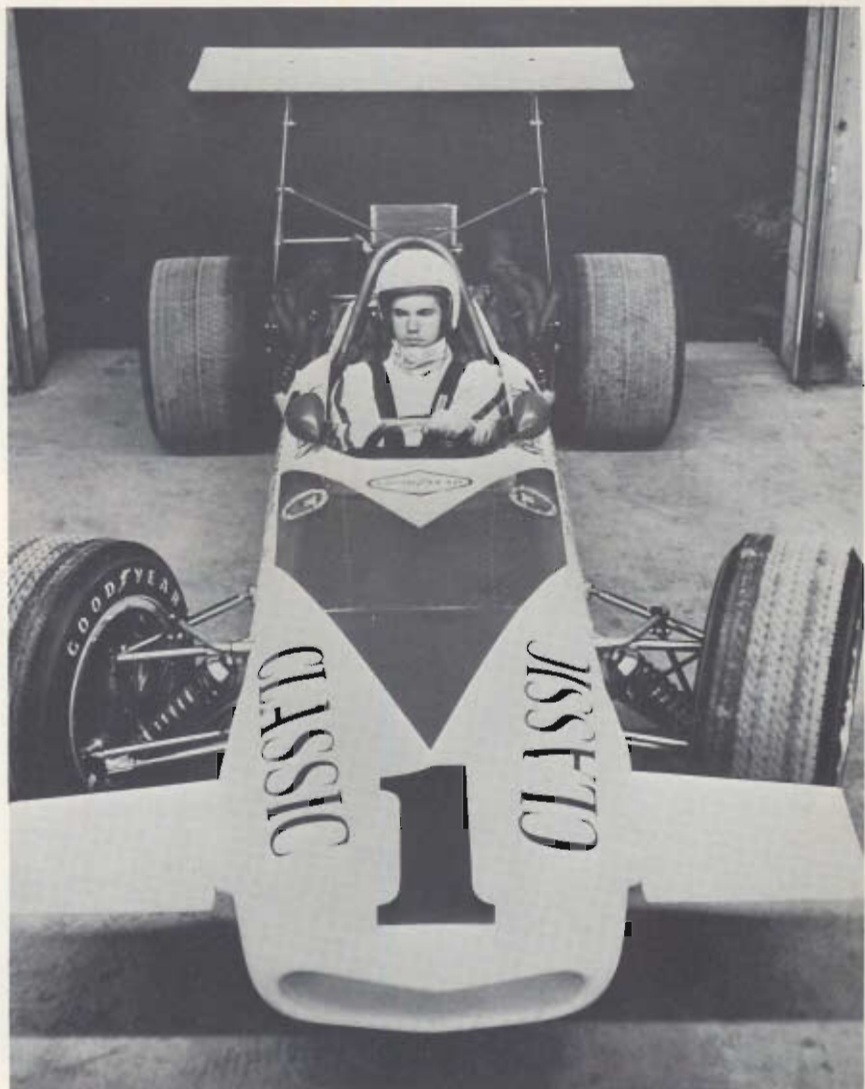
about that ran about 15 miles per hour. Caldwell's car weighed only a little more—825 pounds—but, thanks to 68 years of accumulated engineering knowledge between times, it ran more than 100 mph. It was a Formula Vee open-wheel race car, built around a standard Volkswagen engine, transmission and suspension.

Caldwell built the car purely for fun, to drive in the Formula Vee category newly sanctioned by the SCCA (Sports Car Club of America). "If I won, I didn't think I would win much," says Caldwell,

"and if I lost, I wouldn't lose much, either."

Although he was bound by rigid Formula Vee specifications, Caldwell built in a few ideas of his own, mostly to improve handling. They were good ideas. He finished his first season behind the wheel (his first season behind the wheel of any race car) with an impressive array of hardware from various contests and—most impressive of all—the SCCA's four-foot-high "Rookie of the Year" award.

A new car, a new driver and an im-



Left: The car is No. 2, but the driver is No. 1 in the production of Formula Vee race cars: Ray Caldwell checks out one of his products at speed. Above: Sam Posey, Autodynamics' top driver, rolls out of the shop in a company-prepared Formula A Eagle with wind deflectors.

pressive first-year record. "It has to be the car," the racing fraternity reasoned. Caldwell began to get orders for Formula Vee cars like his. The orders have never stopped.

Caldwell today is president of Autodynamics Corporation, the largest manufacturer of Formula Vee cars in the world. More than 550 have been built since 1964 and have earned more championship points than any other brand.

All Formula Vee cars leave the little factory at 2 Barnard Street in Marblehead on Goodyear tires. Why Goodyear?

"We keep abreast of race car technology," says Caldwell. "Goodyear keeps abreast of race tire technology."

The association is valuable to Autodynamics, Goodyear and Goodyear dealers, Caldwell believes. For Autodynamics, the tires help the cars perform well, making them high placers in competition, and producing satisfied race car customers. For Goodyear and its dealers, the white-lettered tires get much favorable exposure.

Auto racing is the nation's second largest spectator sport. Sponsor identification

is an accepted part of it, and its followers buy the sponsors' products. An SCCA poll of its members showed that 92 per cent buy — and recommend that their friends buy — products associated with racing.

Other cars, developed since Caldwell forsook jet-propulsion engineering for full-time auto making, have joined the Formula Vee in the Autodynamics line, and also come Goodyear equipped: The "Hustler," a sporty two-seater; the "Deserter," a dune buggy; the Caldwell D-7, a sports race car; and two open-wheel



Two views of Autodynamics' Volkswagen-powered "Deserter" dune buggy. It performs equally well on the beach, in the woods and even on the highway.



Autodynamics

Sam Posey visits a friend in an Autodynamics "Hustler" built on a Volkswagen chassis.



race cars — a Formula A (stock-block 305-cubic-inch U.S.-built engine) and a Formula Ford (stock Ford Cortina engine).

Caldwell's idea in the "Hustler" was to build a street model sports car that would equal the style of European sports cars, but would come at a much lower price tag. He made it: Complete, the "Hustler" sells for \$3,500. Do-it-yourselfers can buy a "Hustler" kit and breathe new life into an old Volkswagen for \$1,295. It uses standard VW-size tires.

The "Deserter" dune buggy was the brain child of another Marbleheader, Alex Dearborn, who took the West Coast version and adapted it to East Coast specifications: side curtains and a heater kit to combat rain and cold, and a longer wheelbase for greater road comfort, since Easterners drive more on roads than on beaches. Autodynamics builds the "Deserter," too, either in kit or complete. The kit, for VW components, sells for \$635. Complete, it sells for \$1,800 up, how far up depending on the accessories. It can be bought with a variety of 70-series tires.

Then came the Caldwell D-7 sports car, not to be confused with the Caterpillar tractor of the same model number. The D-7 Cat is a crawler; the D-7 Caldwell is not. Caldwell's D-7 can hustle along at 225 mph and, since it is a sports car designed for slow curves and fast straights, can smoke away from a standing start, reach 100 mph, then screech to a halt, all in 9.6 seconds.

The D-7 is a Group Seven car, meaning that it must have two seats, full lighting and doors, but is unlimited in weight and engine displacement. The D-7 is pushed by a 427 Chevy engine that churns out 650 horsepower.

The car was developed in 1966 for the then-new Canadian-American Challenge Cup series. Caldwell estimates D-7 development costs at \$50,000, but the stakes make it worth a try: the purse for this year's 11-race series is between \$750,000 and \$1-million.

Caldwell literally designed the D-7 around Goodyear's 15-inch-wide racing tires (and fuel cells, too). Like his Formula Vee cars, the D-7 incorporates some strictly-Caldwell suspension ideas: he resurrected the solid axle, front and rear.

He reasoned — and rightly so, as it proves out — that the solid axles would hold the policeman-sized footprint of the tires flat against the track on corners, whereas individual wheel suspension allows the tires to roll under so that only a portion of the footprint is holding on.

Sam Posey, of Sharon, Conn., was elected to drive the D-7, partly because he helped underwrite its development cost, partly because Caldwell has been reduced from driver to team manager by the press of administrative and engineering duties, and mostly because he is good at it.

Posey first drove professionally at age 20. Now 24, he is the youngest driver on the Can-Am circuit and is ranked as one of the world's leading drivers. "One of," however, is not good enough. Posey's avowed aim is to be THE world's leading driver.

Posey and the Autodynamics team finished in eighth place in the Can-Am series and second in World Challenge Cup competition on the Mt. Fuji circuit in Japan last year.

The latest car to roll out of the Autodynamics plant is a winged Formula A Autodynamics-prepared Eagle with a fuel injection, 500 hp Chevy Camaro engine, sponsored in part by TV personality Steve Allen. Posey is a part of the package and will drive the car in the 14-race Continental Championship series held in the U.S. and Canada.

"Complex" is the word to describe the rambling Autodynamics offices and plant. The mild-mannered, brown-shingled facade that fronts the street might indicate a job printing firm. But the shrieks and snarls of exhaust pipes that emit from the three concrete-block additions at the rear bear little resemblance to the rumble of presses.

Inside, Caldwell's 35 employes move at a seemingly leisurely pace—the studied gait of careful men accustomed to working with precision machinery. Specialists in their fields, the men fabricate metal into race car frames and other parts, rebuild engines, transmissions and suspensions, and form fiberglass bodies and body parts.



Above: The Caldwell D-7 sports car features solid axles; can hit 225 mph.

Above right: A painter applies pin stripes to a Formula Vee race car.

Right: A mechanic assembles a Volkswagen transmission and rear-end in the well-equipped Autodynamics workshop.

Fiberglassing is the most colorful part of the operation. The Autodynamics warehouse is a flower bed of color: Dune-buggy bonnets blossom here, Formula Vee noses spring up there, all in hues ranging from standard yellows and blues to psychedelic metal-flecked purples and pinks.

For the most part, Autodynamics employes are dedicated to auto racing. Caldwell selects only two as paid pit crewmen for each race, but before the race is over, the crew has swelled to a half-dozen — volunteers from the plant who drift in and work for personal satisfaction.

Despite the array of exotic machinery turned out by Autodynamics, Formula Vee cars continue to be the firm's bread-and-butter products. One reason: they continue to be the best-handling and eas-

iest-to-maintain Formula Vee cars on the market. Another: Formula Vee is the lowest cost way to break into professional auto racing. An Autodynamics kit costs \$1,295, a complete car \$2,995. Caldwell estimates that a driver can compete all season for about \$5,000, including the cost of car and trailer (which Autodynamics also makes and sells).

Since he has attained distinction as the world's largest builder of Formula Vee cars, Caldwell has raised his sights to new targets: He intends to place the Autodynamics name alongside the great race car names in the U.S. and Europe in all categories of racing. Like Sam Posey, he first would see Autodynamics as one of the leading names in auto racing, then THE leading name.

And going along with Autodynamics will be another good name: "Goodyear."