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the dynamics of autodynamics

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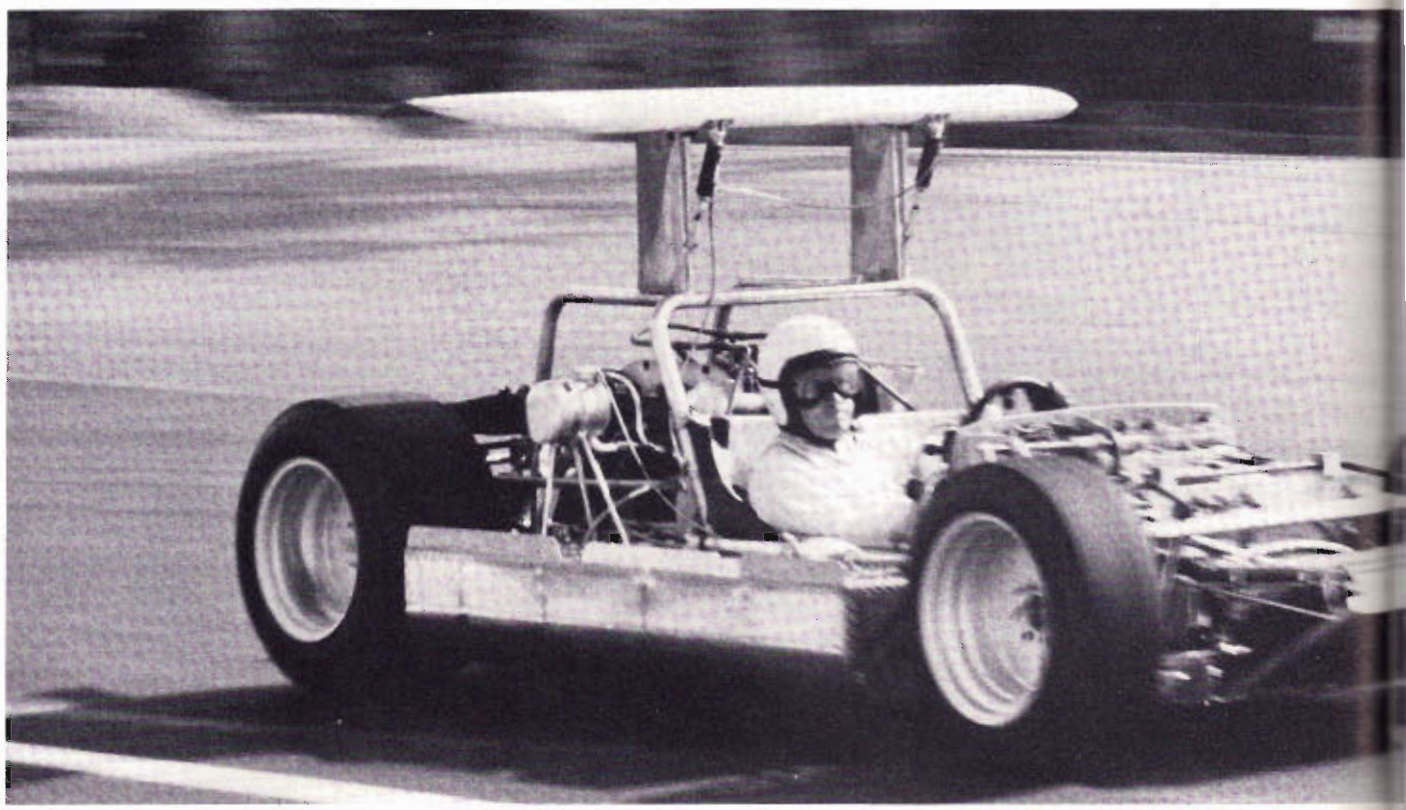


The Dynamics of Autodynamics

BY DAVID KAPLAN

Autodynamics, Inc. is the largest race car manufacturer in the United States. Its cars have won five National Championships and have successfully completed full seasons in Can-Am, Continental and Trans-Am competitions. Its racing cars, Deserter kit cars and performance equipment are sold world-wide.

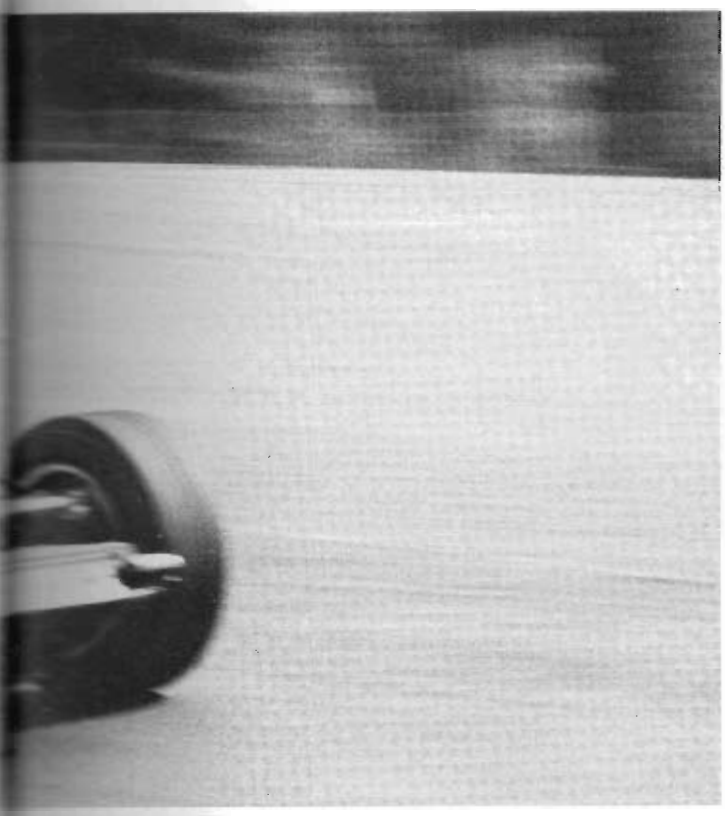
Present plans include non-polluting urban transit vehicles, to be produced in limited quantities in 1973, and other "Automotive Ecology" activities including a unique fuel injection system, are beginning to show up on Autodynamics' horizon.

The spark plug for all this activity is 37-year-old Ray W. Caldwell, Jr., president and founder of the company. Ray acquired his taste for racing from his father. They attended many races, especially those big-bore sports car races on the public roads around Elkhart Lake, not too far from the family home in Fond du Lac, Wis. Caldwell still gets wide-eyed when he talks about John Fitch, Phil Walters, Briggs Cunningham and the Ferraris of "Gentleman Jim" Kimberly.

Thoroughly hooked, fourteen-year-old Ray began to eye the family car, a 1951 Ford convertible. Soon its flathead V8 sparkled with the chromium paraphernalia of the era. Most of the goodies came from Andy Granatelli's Gran-Cor Speed Shop in Chicago. Next came a "Deuce Roadster," Ray's first car, which he raced and won and put himself into drag racing's "100 mph Club."

Schoolwork largely pre-empted motor racing for the next several years; though in 1959, while he was attending the Harvard Business School, Caldwell joined the SCCA's New England Region. But the duties of an Air Force com-

Caldwell testing his D-7 at Bryar in 1967. The hydraulic wing controls are activated by engine oil pressure. Photo: Karl Ludvigsen.



PRODUCTION TABLE

Design Number	Description	Year	Number Built
D-1	Mk I Formula Vee (full tail) (National Champion)	1964	186
D-1A	Mk II Formula Vee (partial tail)	1965	194
D-1B	Mk III Formula Vee (Bobtail)	1966	98
D-2	Formula Vee Trailer (wood ramps)	1964-69	386
D-3	Formula B (Porsche-powered Vee)	1966	8
D-4	Mk IV Formula Vee (Nassau Model)	1967	94
D-4A	Mk V Formula Vee (Wider cockpit)	1968	148
D-4B	Mk V Formula Vee (last of original series)	1969-70	65
D-5	Hustler (Street convertible on VW chassis)	1968	43
D-6	Mk I Deserter Dune Buggy	1967-69	802
D-6A	Mk II Deserter Dune Buggy	1967-72	410
D-7	Caldwell D-7 (straight axle Group 7 car)	1966-67	2
D-8	Caldwell D-8 (straight axle Formula A car)	1967-68	2
D-9	Caldwell D-9 (Formula Ford) (National Champion)	1969	55
D-9B	Caldwell D-9B (Formula Ford) (Canadian & IMSA Champion)	1970-71	48
D-10	Caldwell D-10 (Super Vee)	1970-71	17
D-11	Mid-Engine Deserter Autocross Car	1968-72	138
D-12	Electric Future Transportation Vehicle	1970	1
D-13	Caldwell D-13 Aerodynamic Formula Vee	1971-72	74
D-14A	Vee & Super Vee Trailer (1500 lb capacity)	1971-72	48
D-14B	General Purpose Race Car Trailer (3000 lb capacity)	1970-72	8
D-15C	General Purpose Race Car Trailer (double decker)	1970-72	3
FVE	Formula Vee Engines	1964-69	107
FFE	Formula Ford Engines	1969-70	98
CHE	Chevrolet 305 cid Engines	1969-70	12
COE	Corvair Engines	1968-70	7
FSV	Super Vee Engines	1971	3
Other Projects			
Dodge Challengers (Trans-Am)		1970	3
Style Fitch Supersprint		1964	1
Fiberfabs Mid-Engine Chassis		1965	12
Racing Motorcycle Chassis		1965	5
Low Emissions Turbine Engine		1970	1
OD 11 Boat Hulls		1972	48

mission didn't prevent him from running a TR-3 at several midwest events in the next few years; and later, stationed in Europe, he purchased a Super 90 roadster. He ran the Porsche in open practice sessions at Monza and the Nurburgring, and placed well in some rallies, his best being a second overall in the renowned *Februar Fahrt*. On his return to New England in 1962, Caldwell took an engineering job at General Electric in Lynn, Mass.

He had been following with considerable interest the emergence of the new SCCA Formula Vee class which was to crown its first champion only two years later. Working with Del Trott and Don MacSorely in a 1½-story garage on Lindsey Street in Marblehead, they began the construction of the first Caldwell Formula Vee. They put their time in evenings, after their regular jobs, and they laughed uneasily at the improbability of selling as many as twenty copies of their exceptional new car. The laughing comes easier, today; a look at the production table that follows explains why. Forming a company with Fred Jackson, Caldwell took an ad in *Sports Car Graphic* to determine the interest in the proposed Autodynamics Mark I Formula Vee. Thirteen hundred people wrote for further information and deposits totalling $10,000 were quickly in hand.

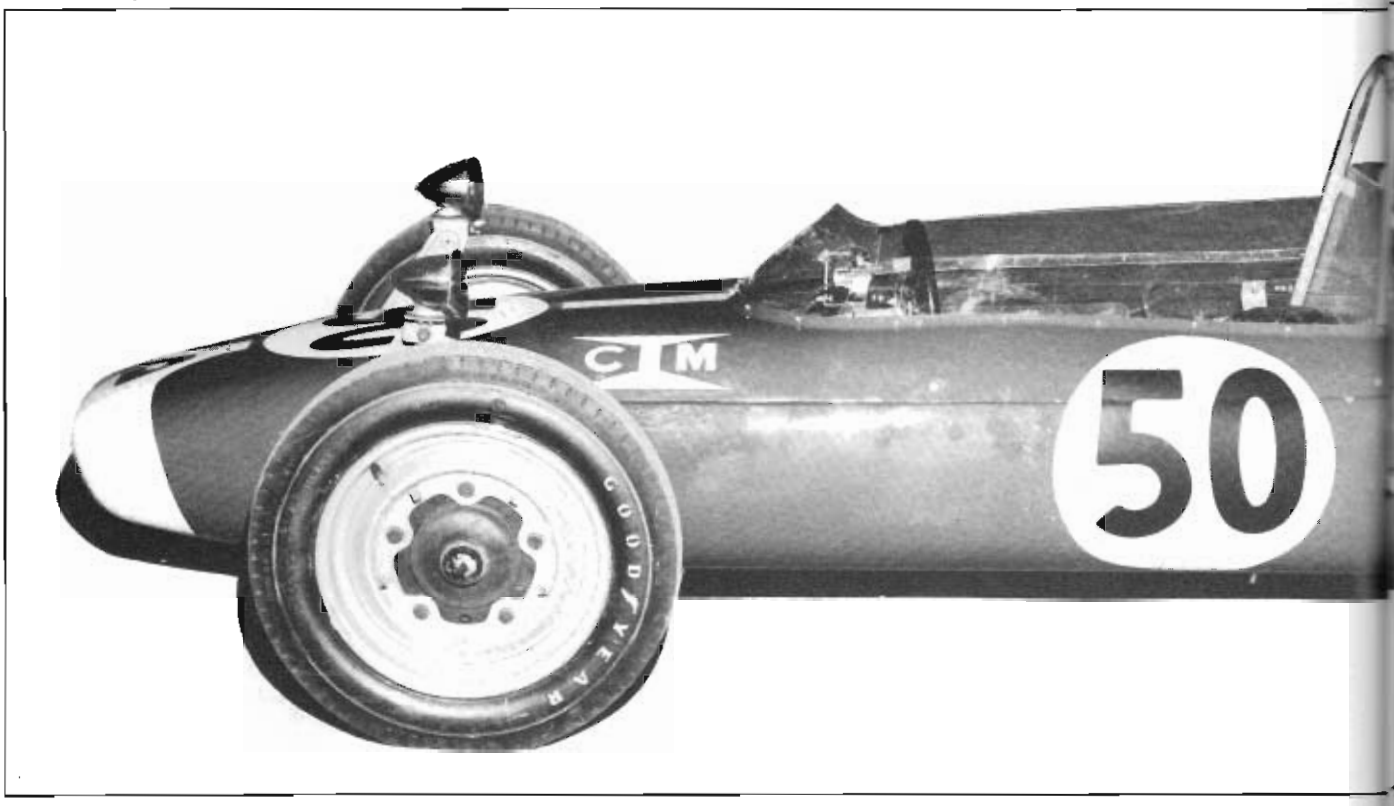
The company struggled to establish itself while Caldwell drove himself to the 1964 Vee National Championship, becoming, in the process, Castrol "Rookie of the Year," winning five of the seven races with his Mark I. They were learning—Caldwell and Autodynamics—how to put together a race car and how to put together a complete racing program. Caldwell's performance stimulated sales of the Mark I, prompting the company to gear up for full scale production.

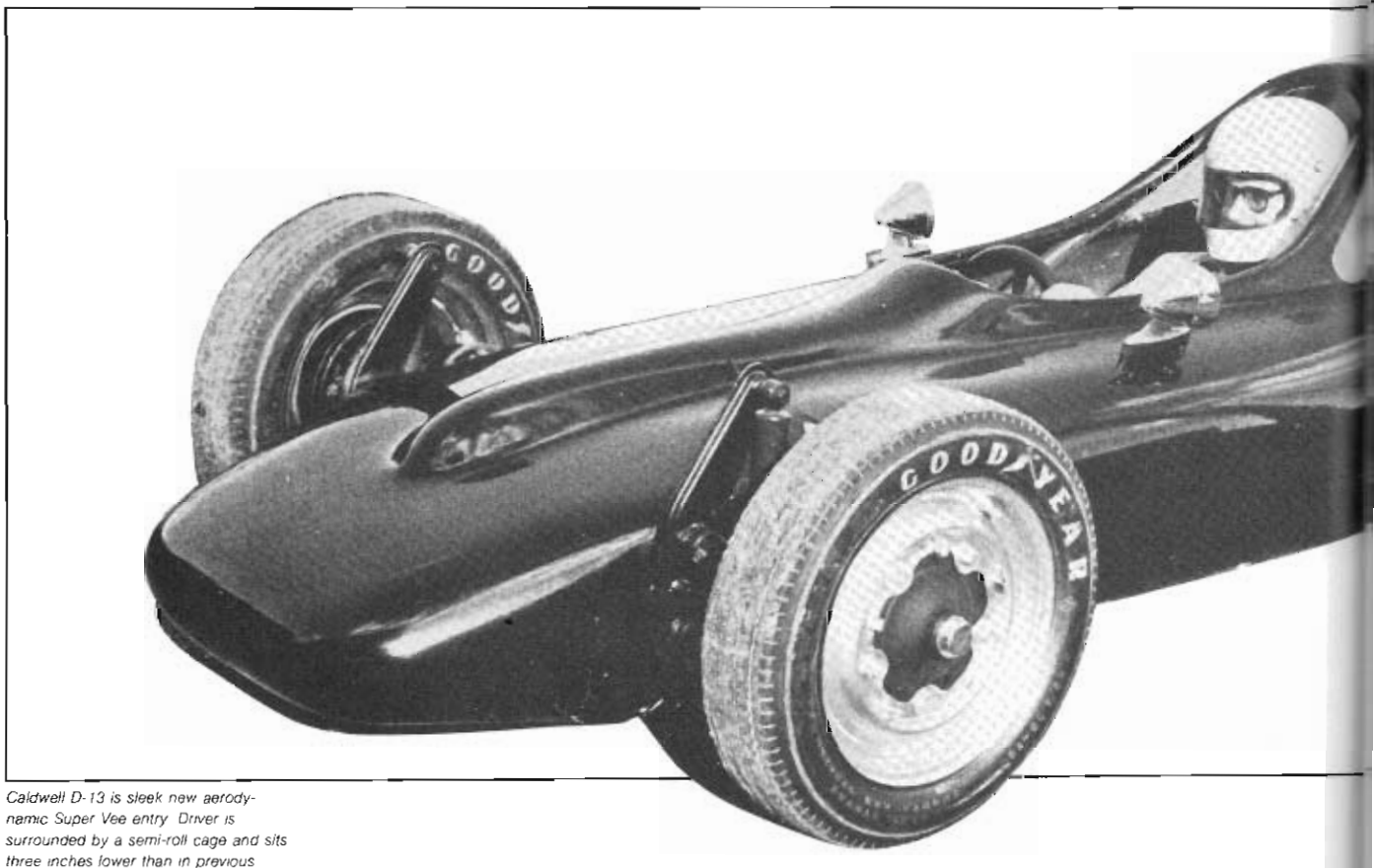
Two new business associates boosted the 1965 growth of Autodynamics along even faster. Alex Dearborn, a skilled engineer and competition driver, set up shop next door to Caldwell, partly so that Autodynamics could supply Dearborn with fiber glass bodies for his Deserter car kit. Recognizing that his Deserter had to outpace the look-alike dune buggies from California, Dearborn parlayed his proximity to Autodynamics into a versatile line of all-weather economical kit sports cars with performance reputations and the hardware to make them go. In 1970 Autodynamics acquired Dearborn's company and continues development and production of the VW-based Deserter GT and mid-engined Deserter GS.

But even as he was getting involved with Alex Dearborn, Caldwell, characteristically, was on the prowl for a new challenge. He found it in the person of a young driver he'd once been assigned to instruct at an SCCA Driver School, Samuel Felton Posey of Sharon, Conn.

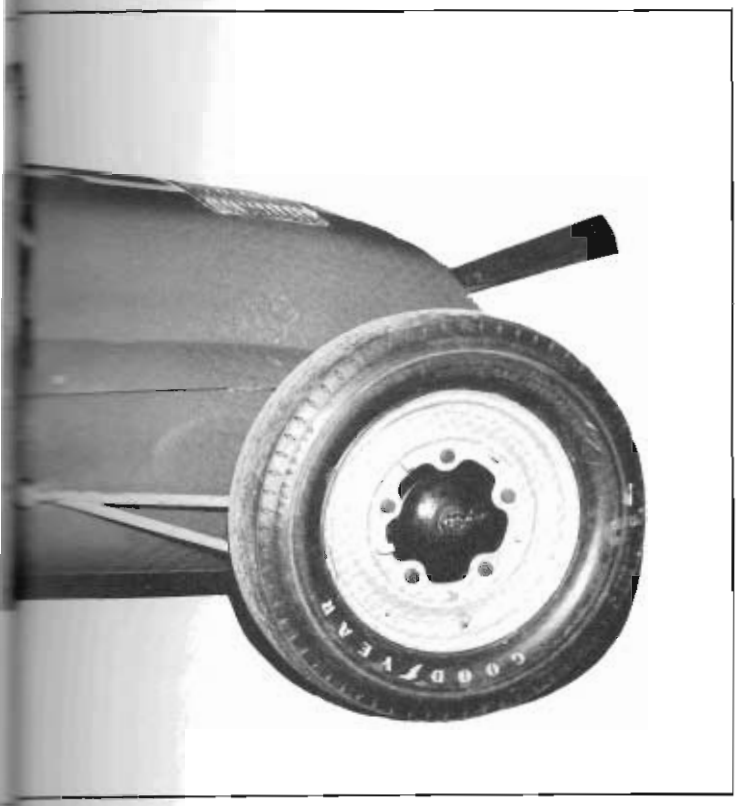
Posey had trailed Ray by a few slots on the grid at Red Crise's 1965 Vee races in Nassau. Although Caldwell crossed the finish line half a length ahead of Bruce McLaren, Crise disqualified him for "non-VW valve spring shims." Caldwell and Posey, who was fast developing as a serious driver, were good for each other. Caldwell contributed his invaluable years of driving, engineering, and organizing. Posey, seeking to fill the gaps in his technical knowledge of race cars while acquiring valuable SCCA racing experience, anteed his considerable driving skills, enthusiasm and racing budget.

Prototype for the Mk II Vee. Fast enough to edge Bruce McClaren by half a length at Nassau, the car was disqualified for "illegal" valve spring shims. Photo. Vaughan's Studio.





Caldwell D-13 is sleek new aerodynamic Super Vee entry. Driver is surrounded by a semi-roll cage and sits three inches lower than in previous models.



Through 1966 Posey continued to race in Formula Vee. He co-piloted his Porsche 904 with Caldwell in the Glen 500 that year, an event they won with cool, no-mistakes rain driving. At the same time Autodynamics was pushing preparation of a McLaren Mk II for Sam to run in the USRRC and the new Can-Am series. The McLaren was intended to be an interim car until Autodynamics could come up with their own Group 7 car, designed and built for Posey. They did, and the Caldwell D-7, with its solid axle suspension, stirred controversy everywhere it ran.

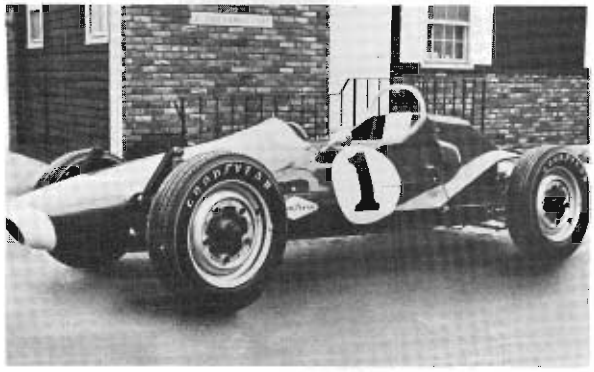
Incorporating major changes while campaigning the car taught them how to "track sort," but their small team was unable to keep up with the rapidly changing Group 7 technology. There was a pay off, but it came in the 1969 Continental series, after two years of rebuilding, reworking and finally retiring the D-7.

Posey was kept in contention in the 1969 Continental series right up to the last race, despite the loss of two Autodynamics-prepared Eagles in on- and off-track accidents. In the season's closer, Sam clipped a course marker with the new McLaren Mk10's front suspension and had to take a DNF. Tony Adamowicz also DNF'd at this race, but he won the marbles. Nevertheless, the Caldwell-Posey combine emerged from their efforts with a contract to run the Dodge factory-sponsored Trans-Am effort. Caldwell, Posey and Autodynamics had lost the battle but won the war.

A smiling Sam Posey with an equally happy Ray Caldwell after qualifying for the pole at the Stardust USRRC in 1967

The McKee Engineering prototype electric car Autodynamics will produce in limited quantities in 1973. Vehicle promises over 60 mph with an urban range of 100 miles per charge.

One of 200 Mk V Vees built by Autodynamics.



Ray Caldwell's first car, a "Deuce Roadster," shown at his family's Fond-du-Lac, Wis. home in 1953. The car turned 100 mph standing quarter-mile

The Dodge contract was not Autodynamics' only triumph of 1969, which also happened to be the first season of SCCA competition in Formula F. The new Caldwell D-9 FF took three Divisional Championships and Skip Barber drove it to the first National Championship. Two years later, David Loring drove an updated version, the D-9B, to 26 wins out of 29 starts and four out of five U.S. and Canadian championships.

Like most new race cars the Dodges were unreliable, at first, but the Caldwell-Posey sorting procedure worked smoothly and well, especially with the added staffing and budget of a Detroit-supported effort which brought many highly-skilled people into the Marblehead racing shops. Carroll Smith moved mountains. Jack McCormack did a highly professional job of wrenching the cars.

Almost all of the shop and racing personnel were enthusiasts who began staying late in the evenings, at first without Caldwell's involvement, to return Autodynamics to the top of the Vee heap. Other programs had shouldered aside Vee development, prompting staff members Del Trott, Bill Woodhead and Bob Fletcher to nurture a new design. The car took shape and proved incredibly fast after a brief sorting session which Caldwell conducted. Simultaneously, the race car, Deserter and accessory ends of the business expanded; and Autodynamics ventured into urban transit with a module built for Alden Self-Transit Systems. By the end of 1970 the company was very firmly part of the racing establishment—comfortable and maybe even a little fat—when Dodge pulled the rug.

Along with other Detroit manufacturers Dodge withdrew from racing, a crippling financial and personal blow to

Prototype six-place urban transit system vehicle built by Caldwell for Alden Self-Transit Systems.

Caldwell's organization and others. Sam Posey, Fred Jackson and the extensive Dodge crew were forced to terminate their association with Autodynamics. And the message was very clear to Caldwell, a man who could always read well: The race car industry was not sufficiently stable to maintain itself without a firm base of non-race car sales.

In the crisis that resulted from Dodge's pullout, Caldwell's first concern was to get cash flowing again. MacArthur and Company, a Boston concern, planned and executed a reorganization and recapitalization which became possible after a successful private placement of company stock. Then, almost immediately, Caldwell intensified his efforts in the field where he'd already been involved, the practical non-polluting rapid transit vehicle. He bought a highly sophisticated electric car prototype developed by Bob McKee of Palatine, Ill., and secured McKee's participation in the future development of this and other designs. Which is not to say that Autodynamics racing department is not as active as ever. Production of the Formula Vee D-13 looks promising, as word spreads about this innovative racer. In 1972, the accessory catalog swelled to a record eighty pages with the steady increase of the parts lists. The electric car won't replace the race car at Autodynamics; it will insure the financial security of a company which racing alone cannot support.

But racing will do more than just pay the freight. Autodynamics and Ray Caldwell are committed to improving the breed by racing, which has already provided the skills to venture into transportation of the future. Racing and Autodynamics will continue to be good for each other.

David Kaplan, 28, hails from Boston, Mass., and since he was eleven, has pursued his passion for exotic machinery down various paths. Following an apprenticeship under Peter Seferian at his Cambridge service and restoration shop, he worked as a Porsche service manager, Group 7 mechanic, turbine instrumentation technician, formula and production car tuner and sometime technical writer. After four years as an Air Force technician Kaplan studied psychology at the University of Massachusetts. David has paid his SCCA dues since 1967 and has competed in formula and production cars. This year he's been announcing races for the New England Region. He is currently employed as Director of Marketing for Autodynamics, Inc.

David Kaplan