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An (Ir)rational Alternative.

BY KYLE GIVEN With joysecs being harder and harder to come by on public roads, the attraction of ownercreated, VW-based kit-cars is almost irresistible

How do you see them? Out there on a clean, white strand shading to cerise in the magenta twilight of a Pacific sunset? Is that it? Does the girl have to be a long-legged, tawny blonde with perfectly sculpted features and a languid smile?

Possibly in the desert, being driven hard -as they were admittedly designed to be driven-soaring high over soft dunes and the shale outgrowths of the Southwestern desert scrubland? The girl is a small and volatile brunette, hanging onto the sissybar and squealing when the buggy thumps down to earth

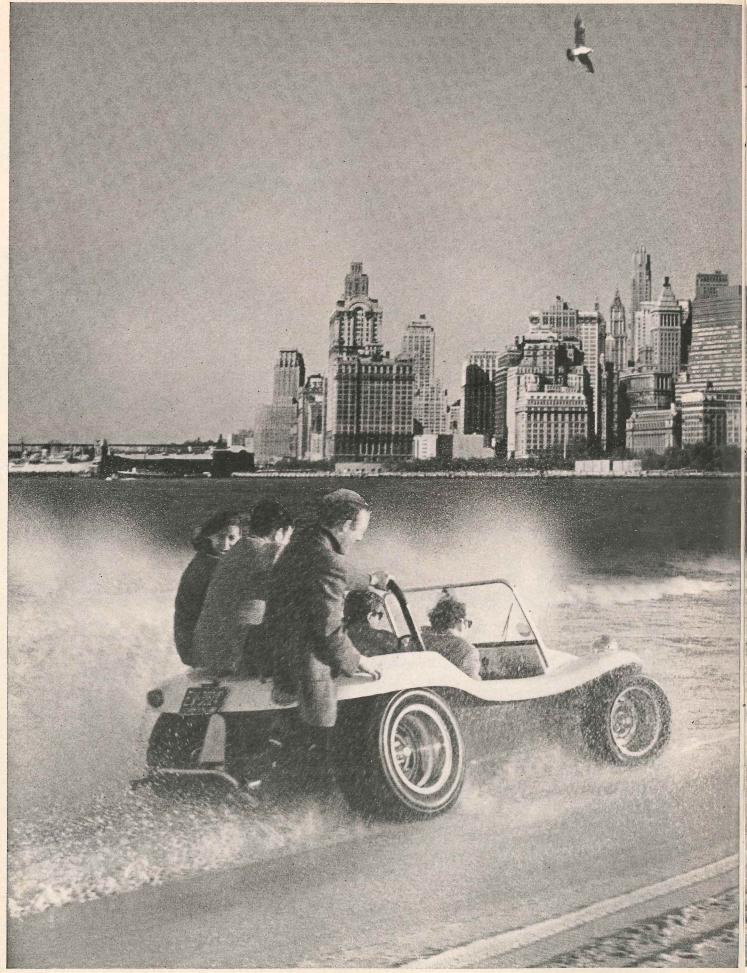
Interesting, intriguing even. But, why not a Brookes-clad Yalie in a yellow dune buggy on the East River Drive. Unacceptable?—it's only 180° from the other extreme which is equally unobtainable to maybe 80% of the population. It's a matter of conditioning, and salivating at purely enjoyable experiences shouldn't preclude modifying them into the practical.

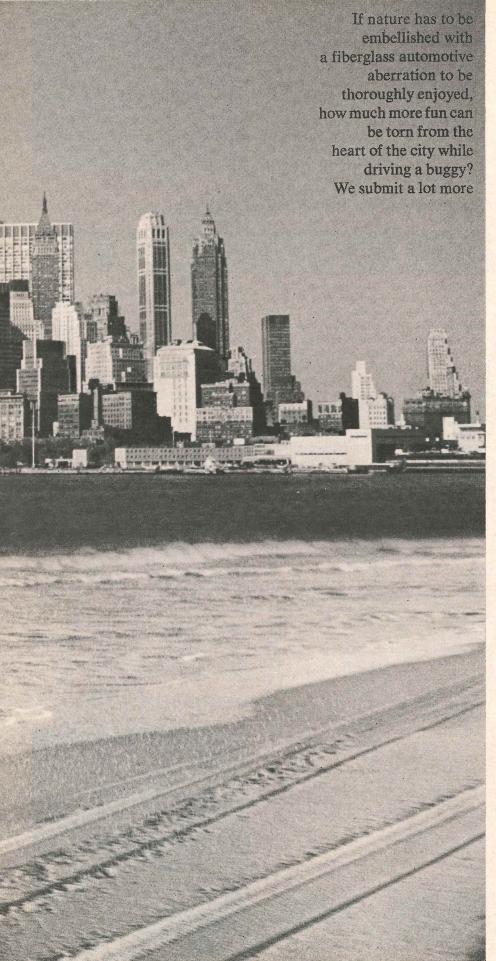
The very things which make dune buggies a delight in their natural environment can make them universally exciting. If a dune buggy can be driven on the beach, or the desert, it can be driven anywhere, cities included. If nature has to be embellished with a fiberglass automotive aberration to be thoroughly enjoyed, how much more fun can be torn from the heart of the city while driving a buggy? We submit a lot more. In an age in which everyone bemoans the absence of the city car, no one wants to notice the lowly dune buggy. Simply a more expensive and less practical Western fad seems to be the conclusion. A mechanical surfboard. When in fact, nothing in this world, in our lifetime, could be more right for the city.

To begin with, they are cheap to buy, make and repair. Dune buggies have been built for as little as \$500. Good ones. As they are made of fiberglass and Volkswagen parts, they are inexpensive and easy to repair. Fiberglass does not rust, Volkswagen running gear seldom breaks. There are no moving parts in a dune buggy body. No windows, trunks, decklids or doors. Hence, in the cut and tear of city traffic, there is nothing difficult or time consuming

for the body man to replace after a blind side block by a cabbie. The buggies are small. They have a wheelbase of either 80 or 84 inches—the same as a Lotus Elan. No matter what engine is used, their power-toweight ratio makes them very responsive in traffic. They are easy to park. They don't take up much room on narrow city streets. They can get into and out of lanes of traffic with agility. They are not worth enough for the average car thief to bother with (besides, they are simply too identifiable to be resold easily—it would not tax even the most indolent police officer to look for a purple dune buggy with a floral-pattern upholstery once it had been reported stolen). As for smog. Well, internal combustion engines do contribute to that. But at 74 cu. in. a crackas compared with a Garment Center average of 472 cu. in.—you could breathe easier.

Sincere thought can evoke nothing but praise for the dune buggy as applied to city conditions. Weather? Eastern dune buggy marketeers have developed tops, side curtains and heaters that work more effectively and easily than those on the MG-





TC. And, most importantly, "city driving" and "fun" no longer have to be mutually exclusive. No one has ever taken the ramp onto the Brooklyn Bridge until he's taken it in a fiberglass tub. No one has ever buzz-sawed against the grain of crosstown traffic until he's gotten out there and jousted with the cabs and trucks on 32nd Street in a dune buggy. Forget about Monaco. Graham Hill couldn't beat you in a dune buggy up Park Avenue, particularly if he was in a Gold Leaf Lotus. Want to resign with a flair and go live in a communal in the Carolinas? How about driving a bug-eyed monster onto the office building elevator and then, when you reach your floor, loading the stuff from your desk directly into the right hand bucket of your dunie and splitting?

It's just that preconditioning is against us. Even the dune buggy ads always show the same old tired stuff—the beach or the desert. Maybe there is a helluva market amongst the Navajos-and maybe that's one of the reasons why the buggies are selling so well in the East. (They are, even though no one ever sees one on the city streets.) Maybe the city-weary thousands along the Eastern seaboards aren't buying fun or the perfect form of transportation for short hop trips. Maybe they're buying those ads with the blondes and brunettes and the surf and the dunes and forgetting that the success of the species depends on adapting to the environment—or adapting the environment to the species.

Inveterate anthropologists that we are, C/D rounded up a pair of buggies for the express purpose of seeing if they were divisible from the Big Sky mentality; to see if we could use and enjoy a buggy in the Big Apple. For this not-too-scientific scrutineering, we set a limit of two machines; first we got the man who built the buggies for the Thomas Crown Affair, Alex Dearborn, to donate one of his Corvairpowered monsters used in that film to test ultimate performance, then we arranged for a garden variety buggy, a Fibrefab Clodhopper from EDP Enterprises on Long Island. And as is the wont of dune buggy builders, even our everyday, ordinary, runof-the-mill Clodhopper was somewhat splendid—at least in comparison with the basic kit. The Fibrefab creation had been built as a sales demonstrator by EDP Enterprises, and, in the best traditions of the demonstrating biz, it was equipped in Southern California trim—fat racing tires on chromed reversed wheels. Inside there was a complete set of VDO instruments measuring everything but the excitement level, a wood-rimmed steering wheel and a pair of upholstered fiberglass bucket seats. The 40-hp, 1192cc VW engine hadn't escaped untouched, either. External devices are easy to add to VW engines and this one had a Scat intake manifold with a Rochester 2-bbl from a Chevy V-8, a centrifugal advance distributor and header exhaust system resembling nothing less than an armored giant squid. The whole

AUGUST 1969

CAR and DRIVER



CLODHOPPER

Manufacturer:

Fiberfab 2365 Lafayette Santa Clara, California 95050

Price as tested:

\$2500 (completely assembled including all options listedbelow)

DIMENSIONS

Wheelbase	80.0 in.
Length	132.0 in.
Width	70.0 in.
Height	50.0 in.
Curb weight	1260 lbs.
Weight distribution, F/R	38.5/61.5%

PERFORMANCE

Standing start 1/4 mile . . . 19.1 sec @ 67.1 mph

BUILT FROM SCRATCH

BODY:

Body kit, \$395.00 (plus \$17.50 tax); roll bar, \$35.00; convertible top, \$75.00; side curtains, \$75.00; headlights and accessory lights, \$34.95; bumpers, \$49.90; skid plate, \$26.95; emblem, \$3.00; bucket seats, \$120.00; shift knob, \$3.95; mirror, \$3.95

SUSPENSION AND WHEELS:

Front end drop kit, \$22.50; rear suspension kit, \$34.95; steering wheel, \$24.95; horn adaptor kit, \$7.95; Koni shock absorbers (4), \$78.00; Pacer chrome wheels (8-in front, 10-in rear), \$199.80; Firestone tires (4.50/10.40 x 15 front, 12.50 x 15 rear), \$166.00

ENGINE AND DRIVELINE:

Hi-rise exhaust system, \$49.95; cable shortening kit, \$6.95; air cleaners, \$7.95; chrome fan belt guard, \$9.95; toggle switches, \$3.75; Scat dual manifold, \$49.95; Rochester 2-bbl carburetor, \$25.50; Bosch centrifugal advance distributor, \$19.50; VDO gauges, \$100.00

Unassembled cost, \$1652.80 (less VW com-



package made a very rich noise, but, because of poor carburetor calibration, generated less power than a standard VW. So handicapped, the Clodhopper surmounted the quarter-mile in true Clodhopper fashion, in 19.2 seconds at 67.1 mph—faster than a standard VW, to be sure, but only because (at 1260 pounds) it weighs about 650 pounds less.

Handling was equal to most sports cars in terms of results, but totally different in application. (Front engine placement as opposed to rear.) However, the big Indy tires, the low center of gravity and effortless response to muscular input, made the Clodhopper much more stable and fun to drive.

The Deserter GS offers another solution to the problem with its mid-engine application of Corvair power. Even though this current ultimate-in-performance dune buggy Deserter has a special square-tube frame, it's built to take the standard VW front suspension and transaxle units. Longer trailing arms with adjustable pivots and coil spring/shock absorbers are used, along with the standard swing axles in the rear. Since the molded fiberglass floorpan and the body shell are riveted and bonded to the frame in the construction process, the GS is, in effect, a unit construction car. The body details, with the exception of the engine cover which takes up what would normally be the back seat, are exactly those of a conventional buggy except that the whole thing snuggles closer to the ground. The seats are buck-shaped recesses in the floorpan, upholstered with snap-in padding-all very much in keeping with a Group 7 car image.

The Deserter we drove is the company's prototype and is aimed at SCCA road racing. Eventually a Porsche engine will be used, but this car had an awesomely detailed and much modified Corvair engine mated to a VW transmission via a Crown adaptor. The engine, originally the turbocharged, two 3-bbl, 140-hp unit, has been modified by increasing the compression ratio to 10.5-to-one, opening up the ports, installing a racing camshaft, and a 600 cubic-feet-per-minute Holley 4-bbl carburetor on a special manifold. Of course, exhaust headers are used and, since the car was set up for racing rather than the street, Porsche-type megaphones were inserted into the pipes instead of mufflers.

All of the suspension and brake parts are either stock VW or available from Dearborn Automotive Corporation. Rear suspension is made of the normal GS components except for the optional Z-bar-a bit of science adapted from the Formula Vee racers. A lowered VW front end is used with the Beetle front anti-sway bar. This particular car had about 10° of negative camber in the rear, which can only be found by machining the torsion bar tubes and the trailing arms for clearance. Brakes, too, were standard VW parts, Karmann-Ghia discs in the front and Beetle drums in the rear. (Continued on page 78)



DESERTER G.S.

Manufacturer:

Dearborn Automobile Co., Inc. 2 Barnard Street Marblehead, Massachusetts 01945

\$4400 (completely assembled including all options listed below)

DIMENSIONS
Wheelbase85.0 in.
Length
Width65.5 in.
Height44.0 in.
Curb weight
Weight distribution, F/R43.1/56.9%

PERFORMANCE

Standing start 1/4 mile . . . 14.4 sec @ 94.3 mph

BUILT FROM SCRATCH

BODY:

BODY:

Deluxe body kit, \$1495.00 (kit includes: space frame, body, hood, dashboard, floorpan, engine cover, toe box, shift linkage, brake cable tubes, engine and transaxle mounts, tubular body braces, trailing arms and rod ends, Koni rear shock absorbers, rear coil springs, windshield and frame, fasteners, accelerator cable, steering column lowering kit, headlights, headlight brackets); roll bar and hardware, \$30.00; bucket seat upholstery (2), \$50.00; bumpers (2), \$49.90; mirror, \$4.50; license plate light, \$5.50; parking and directional lights, \$5.00; chrome taillights, \$24.95

SUSPENSION AND WHEELS:

Z-bar and hardware, \$47.00; Koni front shock absorbers, \$39.00; quick steering kit, \$13.50; steering wheel and horn, \$23.00; front end drop kit, \$19.00; VW front disc brakes, \$75.00; monocoque wheels (6-in front, 8-in rear), \$280.00; Goodyear tires (4.25/7.00 x 15 front, 5.50/9.20 x 15 rear), \$166.84

ENGINE AND DRIVELINE:

Corvair engine (new), \$450.00; exhaust system with headers and megaphones, \$110.00; Crown engine/transaxle adaptor, instrumentation, \$160.00; Eelco manifold, \$50.00; Holley 4-bbl carburetor, \$55.00; air cleaner, \$7.50

Unassembled cost, \$3378.69 (less VW com-



CAR and DRIVER

Sports cars were graceful, dramatic, subtle machines and their golden age was the Fifties. It was not just that the Maseratis and the Ferraris and the Jaguars came from overseas, but surely that was the kind of heritage that made them what they were. What we have today arbitrarily classified as endurance cars were then cars of all trades. They ran Le Mans and they ran sprint car races at Watkins Glen and Pebble Beach.

The C Jaguar was almost the prototype of the breed, winning Le Mans in 1951 with Peter Whitehead and Peter Walker driving (the Stirling Moss car wore out four of the opposition's six 4483cc Talbots in the race). The C Type had a tubular chassis and a fine vintage feel. It was a small car, weighing only slightly over 2000 lbs.

American sportsman Briggs Cunningham's dream was to win the 24 hours of Le Mans, and he went about it with all sorts of overwhelming machines. The first of the full-scale Cunningham attacks was mounted in 1952





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AN (IR)RATIONAL . . .

(Continued from page 40)

As might be expected, racing tires were used. Monocoque wheels, available through DAC, were used to reduce unsprung weight and also to provide additional strength.

All bolted together with enough head-lights, taillights, windshield wipers and rear wheel-enveloping fairings to be legal for Massachusetts' streets, the Deserter GS weighed 1196 pounds. It was no phony racer with standing quarter-miles of 14.5 seconds at a bit over 94 mph. As you would expect of a car with a center-of-gravity at ankle-height and racing tires, the handling is way beyond the realm of any but sports/racing machines. It has strong initial understeer which changes to who knows what at ten/tenths. Even in the rain on New York National's handling course, we couldn't spin it out.

Two very different test cars, both typical of the essential point of dune buggydom—each had been built as a unique expression of its owner's desires. One, the Clodhopper, an eye-arresting, on-or-off-the-road mechanical realization of a rebellion against the norm. The Deserter, a paved-road-only econo model Group 7 racer. That's why Detroit hasn't gotten into the game—dune buggies are only appealing as kit cars, with all that's good and almost all that's bad about doing-it-yourself.

There is nothing new about the kit car game. The line has always been "Snap one of our Voyeur GT bodies on your old chassis and have the looks and performance of a \$15,000 European sports car for only \$3.98." The project looks like child's play—on paper. But once confronted with the hardware (or lack of it) only Colin Chapman stood a chance.

But now we have the dune buggy. It's a simple kit car and it looks like nothing else in this world. To begin with, the dune buggy body doesn't have any moving parts to worry about or to fit. Even better, the body is self-supporting. No tubing or plywood is needed under the skin for structural rigidity. (The body's styling contour gives it enough strength so that the fenders can be sat on without undue flexing.) Some of the buggy kits can even be pieced together without painting—and without the allied tasks of sanding, filling, sealing and priming. These dune buggy bodies have the coloration impregnated in and only smoothing the edges is required.

Of course, the body is only a part of the project. You can say whatever you like about VWs: that they've destroyed our balance of payments, that they are ugly and maybe even unsafe—they're still perfect for making dune buggies. Without its body, a VW is the essence of simplicity. It becomes a flat platform chassis with the drivetrain and rear suspension on one end and the steering on the other—there's not even a radiator to worry about. Just cut on the dotted line, bolt on the body of your choice, and away you go.



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CAR and DRIVER

It is a bit more complicated than that, but not much. However, since there are two basic elements to the buggy—the VW and the body—each should be chosen with some care. Possibly because most of the buggy bodies are outright copies of the Meyers Manx (May, 1967), the number of body makers has mushroomed in the last year. Subtle refinements in styling have been made in most instances, and some very unsubtle revisions in the production methods have been made—resulting in cost cutting. Like any suddenly flooded field there are things to look for when you buy.

Two-piece bodies are considered the way to go because bolting the hood between the front fenders greatly stiffens the structure. Whatever else, make certain the cowl area is reinforced so that when the steering shaft reacts to each chuckhole and gully in the pavement it does not transmit them directly to your shoulder sockets. That's very unpleasant and could be the end of anyone's romance with a buggy. Aside from design features and styling tidbits, quality of workmanship is the most important factor. Knowledge of what constitutes good workmanship can be picked up by visiting several dealers before writing out a check.

When it gets time to find something to hang the body on, nothing older than a '61 Beetle should be used (from '61 up, Volkswagens had at least 40-hp and an all-synchro gearbox). Make certain the floorpan, suspension, steering, transaxle and engine aren't damaged if the VW has been in an accident. The condition of the body doesn't matter, because it will be disposed of, anyway.

Once the body is off—a matter of 30-odd bolts to remove and a few wires and cables to unhook—comes the only difficult part. Almost invariably, buggies are made for a wheelbase of 80 or 84 inches—to provide adequate ground clearance for the floorpan along the ridges of the Great Outdoors. As all the kits come with complete instructions (some of them with templates showing exactly where to make the cut), the shortening job is relatively easy. Providing, of course, that you have access to, and know how to use, an oxy-acetylene torch. Even if you don't or can't, most dealers will do the job for you, charging in the neighborhood of a hundred bucks, including the shortening of the clutch and remote control gear changing cables. There's even a kit for shortening the cables which makes that whole process very simple.

Since the fiberglass body is much lighter than the original Beetle body, the suspension has to be lowered to get the proper ride height. This can be accomplished at the front by cutting half of the strips in each of the laminated torsion bars or by removing the center anchor on one of the bars. Removing the anchor allows that bar to function as an anti-sway bar, but not (alas) as a spring. In the rear, torsion bars can be reindexed in their sockets. Height adjuster kits are available which allow a simple wrench adjustment to compensate for

changes in load

Once the chassis is shortened and lowered, it's all a bolt-together process and a helluva lot more simple than most plastic gluetogether model car kits. Even the wiring has been provided for, as there's another kit available which makes up a buggy wiring harness and tells which wire to connect to which accessory.

That's it. One dune buggy.

Construction time takes from three days to three months, depending on the amount of special equipment you desire and the amount of spare time available. The inexpensive way out is to use the standard VW instruments, wheels, tires, seats and other bits and pieces. (A word of warning: This combination would not be socially acceptable in California where the street buggy demands the *full* treatment.)

For our test we short-circuited the build-

ing and ended up with two ready-made vari-

ations on a theme. Of the two, the GS is the more practical for the enthusiast. It's also very much more expensive—which to a certain degree negates the whole idea of a kit car. The Clodhopper-style car is the more practical for the average person-offering as it does the combination of low initial cost, great fun, good reliability and general purpose usage. However, there are other aspects to the average man's involvement with a vehicle combining off-the-road design features with sporting car abilities. It may be that the average Eastern city dweller is simply too self-conscious to drive a nutball looking car. Perhaps he's been too brain-washed by the sort of thinking which decrees a place for everything and everything in its place. For that reason, there is evidence to suspect the buggy will never reach the height of acceptance which it deserves in places other than the Southwest. Other factors, too, enter into the problem traffic conditions around the population centers which, realistically, make a small, maneuverable vehicle ideal, may make also its driver feel vulnerable. Then, too, the extreme seasonal changes and the true lack of generally available and proper places to drive them as they were designed to be driven also arbitrate against their popular acceptance. Finally, there is an attitude on behalf of motor vehicle licensing bureaus which—except (again) in the Southwest regard the dune buggy as a curiosity rather than as the transportational panacea it could prove itself to be.

And, in terms of price and ultimate accessory decoration—the hidden bear trap which ensnares the designers of all special purpose vehicles—the dune buggy may simply be in the process of pricing itself out of contention.

Still it's possible to build a buggy for \$500 that can be fun. Spend \$1000 and shut down the super cars. Spend \$4000 and go racing with old Group 7 machines. That's the thing about a buggy. You can build one exactly for the purpose you desire. And still drive it to work. Try that with your SS/f street rods.

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