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Bucky Fuller & Spaceship Earth

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Treats for Gear Heads

By ALICE RAWSTHORN
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NEW YORK — One car survived a spectacular crash in which its driver died, only to be destroyed by fire when the gasoline tank cap was accidentally left off. Another enjoyed a brief burst of glory when it ferried H.G. Wells around Manhattan before it crashed too. It was left to rot in Arizona until being rescued, and restored by local engineering students. A third car was driven around the United States to promote the Allied cause during World War II, then sold for scrap by a Kansas junkyard.

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Roger White Stoller

Buckminster Fuller with his Dymaxion Car #2 in front of his Snowmass Dome in Colorado.

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Billing himself as “a maverick thinker, a gentle revolutionist, a loveable genius, an anti-academician, doctor of science, doctor of arts, doctor of design,” among many other roles, he aimed to build the most fuel-efficient car on the road. As you would expect of a loveable genius, many of Fuller’s claims for his designs were wildly exaggerated, but he succeeded in achieving his objective with this one.

Three-quarters of a century after the last of the original models, Car #3, rolled off the production line, a new Dymaxion Car has been created, Car #4. Based on the drawings of Car #3 and painstaking analysis of Car #2, it was built in the English countryside in the East Sussex workshops of Crosthwaite & Gardiner, which specializes in restoring 1930s racing cars. The new car was commissioned by Norman Foster, the British architect of such modern landmarks as Beijing Airport, the new Reichstag in Berlin and the “Gherkin” in London. A passionate car collector, he undertook the project as a labor of love and an homage to Fuller, who he met in 1971 and collaborated with until Fuller’s death in 1983.



Gregory Gibbons/Courtesy of Ivory Press

Top and head-on views of the new Dymaxion Car, #4.

Car #4 is now on display in “Bucky Fuller & Spaceship Earth,” an exhibition of Fuller’s work running through Oct. 30 at the Ivorypress Art + Books gallery in Madrid. The



Marc Newson Ltd., top; Jerome Kelagopian
Two creations from Marc Newson, an Australian designer: A rendering of his concept for a space plane and his Aquariva speedboat. Similar projects are on view at the Gagolian Gallery in New York.

story of all four models is told in a new book “Dymaxion Car: Buckminster Fuller” published by Ivorypress, which is owned by Mr. Foster’s wife, Elena Ochoa Foster.

What a story. It begins with Mr. Foster’s moving description of Fuller as “a dear friend — as far as it is possible to be with someone who is also one’s mentor.” Jonathan Glancey, the British architectural critic, then recounts Fuller’s struggle to produce the cars that he envisaged as being but one component of a dazzlingly futuristic “Dymaxion world” for which he also intended to design housing, boats, maps and something sounding startlingly like a hovercraft.

As Mr. Glancey points out, it is a complex, often confusing tale. By 1933, when Fuller opened the Dymaxion Car workshop, he had made his name as a gifted and charismatic, but rambunctious, design maverick who had twice been expelled from Harvard and had started several ill-fated entrepreneurial efforts to manufacture his designs.

To develop the car he collaborated with two nearly as colorful characters. One was W. Starling Burgess, a Harvard dropout who had become a brilliant aviation engineer, yacht designer and poet, but also a womanizer, alcoholic and morphine addict. The other was Nannie Dale Biddle, a wealthy socialite and aviatrix who financed the project until she clashed with Fuller (an occupational hazard for his business partners) and fell for the dashing Burgess, becoming the fourth of his five wives.

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This was nonsense, but Car #1 did make a triumphant journey to Manhattan before its fateful crash a few months later just outside Chicago, where it was to debut at the 1933 World’s Fair. It wasn’t to blame, but the tragedy cast a cloud over the Dymaxion project at a time when Car #2 was still under construction.

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By the time it was completed in January 1934, Fuller had ousted the Burgesses and was preparing to start work on Car #3. He refined the design of each model and, though none of the three was quite as fast or fuel-efficient as he boasted, they could be driven for 35 miles a gallon, twice as far as a typical car of the time. The Dymaxion Car was also, as Mr. Foster puts it: “So visually seductive that you want to own it, to have the voluptuous physicality of it in your garage.”

No easy thing for Crosthwaite & Gardiner to replicate. The second half of the book describes how they did it, helped by the bodywork specialists Roach Manufacturing in the nearby county of Hampshire.

It is an automotive nut’s dream, packed with photographs, drawings and technical specifications of the old and new Dymaxion Cars, as well as the restorers’ account of the problems they faced. There were technical challenges, of course, but intellectual ones too. Which of the original designs should Car #4 be modeled on? How accurate a replica should it be? Should they try to anticipate how Fuller might have modified it? And should they use modern technology, or replicate 1930s techniques? Their conclusion was to strive for authenticity, wherever possible.

Culture

Treats for petrol heads

NEW YORK

A passion for cars leads to re-creation of a model by Buckminster Fuller

BY ALICE RAWSTHORN

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MARC NEWSON ILLUSTRATION



BERNARD KILGOPPIN ILLUSTRATION

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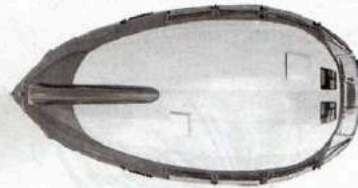
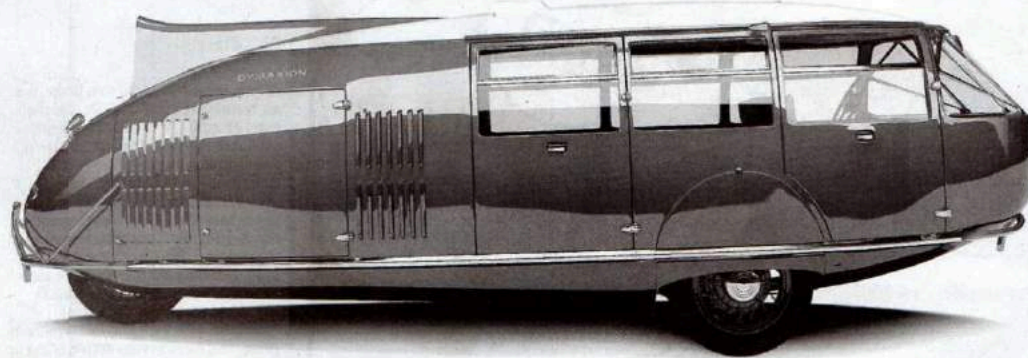
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Above and left: top, head-on and side views of the new Dymaxion Car, #4. Below left, Buckminster Fuller with his Dymaxion Car #2 in front of his Snowmass Dome in Colorado.



GREGORY GIBSONS/COURTESY OF IVORY PRESS (CAR #4); ROGER WHITE STOLLER (CAR #2)

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Car #4 is a splendid tribute to Fuller, and its debut coincides with another treat for petrol heads in the exhibition of transport projects by the Australian designer Marc Newson that opened Sept. 14 at Gagossian Gallery in New York. He is famed as the record-breaking star of the "design art" auctions, but his heart — and finest work — lies in transportation. The New York show, which runs through Oct. 16, includes a new speedboat, as well as older projects such as a concept car, prototype space plane, concept jet, surfboard and a pair of Nike trainers designed — with Fulleresque bravura — for the cosmonauts on the International Space Station.

ONLINE: MORE ON DESIGN

▶ A collection of the design columns by Alice Rawsthorn. global.nytimes.com/arts

Norman Foster

Norman Foster's back-to-front car

It's the 1930s car that was meant to change American lives. And now the Dymaxion's back - courtesy of Norman Foster.



Driving ambition ... Norman Foster and his Dymaxion. Photograph: Nigel Young

Jonathan Glancey

Tuesday 5 October 2010 22.30 BST



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Richard Buckminster Fuller had a lot of nerve. In the 1930s, the great US inventor secured the first \$1,000 he needed to build a giant futuristic car, called the Dymaxion. The socialite who gave him the cash was told: "If I want to use it all to buy ice cream cones, that will be that - and there will be no questions asked."



i The nearly completed Dymaxion No 1 outside the Bridgeport factory in July 1933. Photograph: The Buckminster Fuller Archives.

Fuller, born in 1895, is best known for his geodesic domes, but his ultimate hope was that the three-wheeled Dymaxion - which looked like a VW camper van crossed with a pinball flipper - would fly, allowing Americans to leave the highway vertically and touch down at lightweight aluminium homes, scattered wherever they fancied by a fleet of Zeppelins.

The Dymaxion was meant to be phase one of a social revolution, fuelled by the latest technology, but only three

were ever built. No 1 caught fire and No 3 was turned into scrap; only No 2 survived. It now sits in the National Automobile Museum in Reno, Nevada - or it did until 18 months ago, when the architect [Norman Foster](#) decided he wanted to fulfil a dream, and build Dymaxion No 4. So he borrowed No 2 for inspiration.

"The Dymaxion had the same engine and transmission as the Ford Sedan of the time," says Foster, who worked with Fuller, his design hero, from 1971 until his death 12 years later. "However, at three times the volume, with half the fuel consumption and a 50% increase in top speed, it not only did more with less, but anticipated the 'people mover' of several decades later."



i Foster's Dymaxion in progress. Photograph: Nigel Young, Foster + Partners

Foster's Dymaxion, which the architect has just unveiled, is striking and spacious. Boasting an emerald green body topped with a white roof, it looks part porpoise, part wingless aircraft, part beetle - like something from the 1930s sci-fi film *Things to Come*. And, until the end of October, it's parked not in Foster's garage, but at the Ivorypress Art+Books gallery in Madrid, the centrepiece of its Bucky Fuller & Spaceship Earth exhibition.

Hopefully, the show will travel the world, although whether it will encourage further orders for Dymaxions is anyone's guess: they were never cheap, even though Fuller, with typical bravado, once told a reporter, even before the first lacquered aluminium creation emerged from the factory, that 100 were under construction and would soon be selling for as little as \$200 (half the price of a run-of-the-mill Ford Sedan at the time). In reality, the cost of building each car was about \$8,000.

I watched Foster's Dymaxion No 4 being made in East Sussex, at racing car restorers Crosthwaite & Gardiner. Foster was introduced to this haven of automotive engineering by David Nelson, one of his partners and the co-designer of the elegant McLaren Technology Centre in Woking. It was a marriage made in heaven. "As a child," says Foster, "I lived in a fantasy world inhabited by these cars and their legendary drivers: Bernd Rosemeyer in the rear-engined Auto Union and Rudolf Caracciola in the Mercedes-Benz, racing at Nurburgring, Tripoli and Monaco."



i The finished product. Photograph: Nigel Young, Foster + Partners

The C&G team had many questions. Restorer Phil King went off to Reno to take 2,000 photographs of No 2, which was in a sorry state. Eventually, with the promise that Foster would create a new interior for the car, No 2 was shipped to Sussex. Meanwhile, Foster's team worked through the Buckminster Fuller Archive at Stanford University, while King and co improvised when clues were unforthcoming. The Dymaxion,

says King, "was unlike anything I'd seen before: you almost have to forget everything you've learnt about car engineering to understand how it works."

Why? Well, as with the originals, No 4's shell comprises an ash frame sheathed in hand-beaten aluminium. This sits on the chassis of an old 1934 Ford Tudor

Sedan, but front to back, so the back wheels of the Ford form the front wheels of the Dymaxion. Much of the detailing echoes Zeppelin design, while its V8 Ford engine is mounted at the rear, under a long tailfin designed to both cool the engine and increase stability. It is steered by the single rear wheel, which acts like a boat's rudder. This is, without doubt, the Dymaxion's weakest point.

"The interior seemed extraordinarily roomy," says Allegra Fuller Snyder, daughter of Fuller, remembering her rides in the original. "It felt almost like a living room. Riding in it was much more like floating." Foster echoes Allegra's sense of wonder. "Driving the Dymaxion is a revelation," says this lifelong sci-fi fan and Fuller's perfect disciple. ["At slow speeds, it can turn on itself, almost like a spinning top."](#) Moving faster, it is extraordinarily well-cushioned and feels more like a boat than a car."

The Dymaxion Corporation sank, heavily in debt, within a couple of years of its founding. It had enjoyed a rollercoaster existence, with Fuller and his business partner, William Starling Burgess, notching up parties, affairs and engineering sorcery right to the end. Allegra believes that her father lost heart with the project after he crashed No 2, injuring her. Having lost his first daughter to polio, he was horrified at the thought of causing Allegra harm.

Whatever the ultimate reason for the Dymaxion's fall from grace, Fuller's magnificently optimistic fusion of architecture and invention never did fly - either from showrooms or in skies above America.

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Norman Foster Rebuilds Buckminster Fuller's 1933 Fuel Efficient Vehicle

October 19, 2010 · 4:00 am PDT

36 responses

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A few weeks ago, we [mentioned](#) that British architect Norman Foster was painstakingly reproducing the Dymaxion Car, a famous 1933 vehicle designed by design icon Buckminster Fuller. According to a [recent story in the *Guardian*](#), the car is now complete and on [show](#) at Ivorypress Gallery in Madrid, which has published a book chronicling its history, [Dymaxion Car: Buckminster Fuller](#).



When it was originally produced the Dymaxion Car was part of a larger line of Dymaxion products, each of which Fuller designed to improve the well-being of their users. Due to its light frame and aerodynamic shape, Dymaxion Car got 35 miles per gallon, which was twice as fuel-efficient as other cars on the road (and not too shabby by today's standards). Only three versions of the car were made, and two are no longer with us—one crashed and then later burned, the other was scrapped. But #2 (above) is housed in an auto museum and was part of the [Buckminster Fuller show](#) at the Whitney that opened in 2008. Foster had to borrow car #2 and the plans for the others to reproduce the vehicle, which he built with a car restoration company.

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Foster's not advocating that manufacturers should bring back the Dymaxion—he was a friend and protege of Fuller, and wanted to pay homage to his mentor by bringing the car to a new audience. But Foster's blast-from-the-past does present a timely reminder of the future of fuel-efficient autos. As new [efficiency and emissions standards](#) have been stipulated by the government, many of Fuller's principles, like using more lightweight materials, are definitely already being employed by car designers.

For a briefing on Bucky, read our [GOOD Guide to Fuller](#), which will give you plenty of background on the designer and his geodesic genius.