SPECIAL TIME TRAVEL ISSUE!

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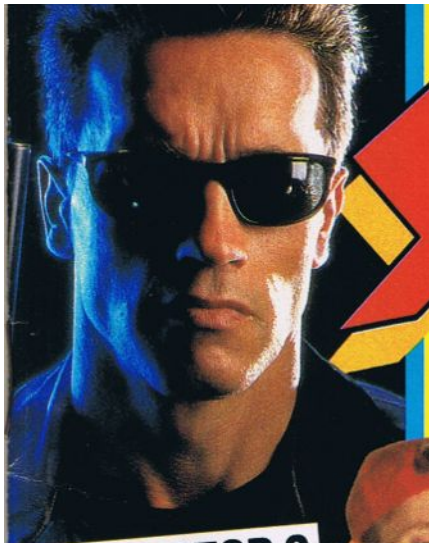

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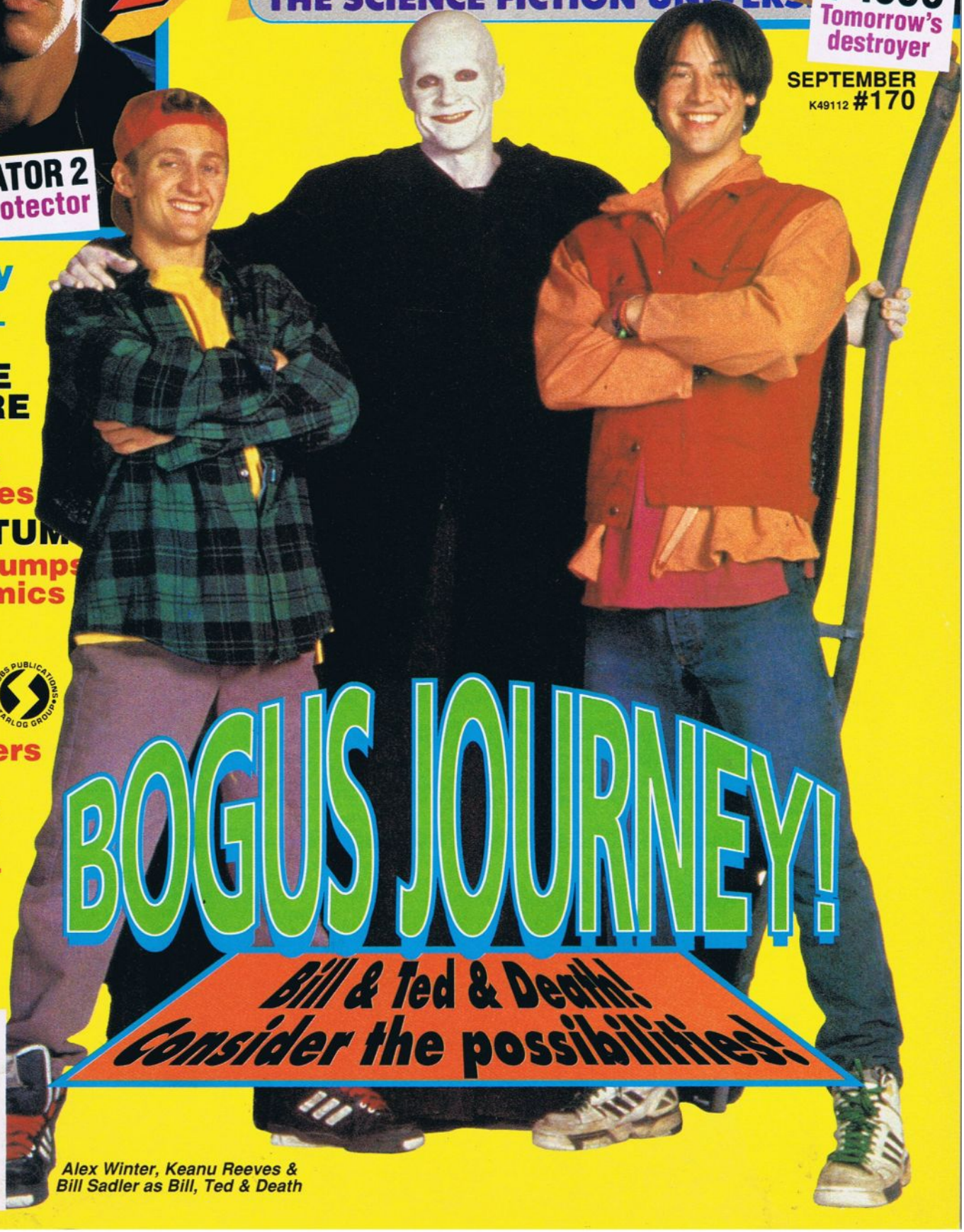

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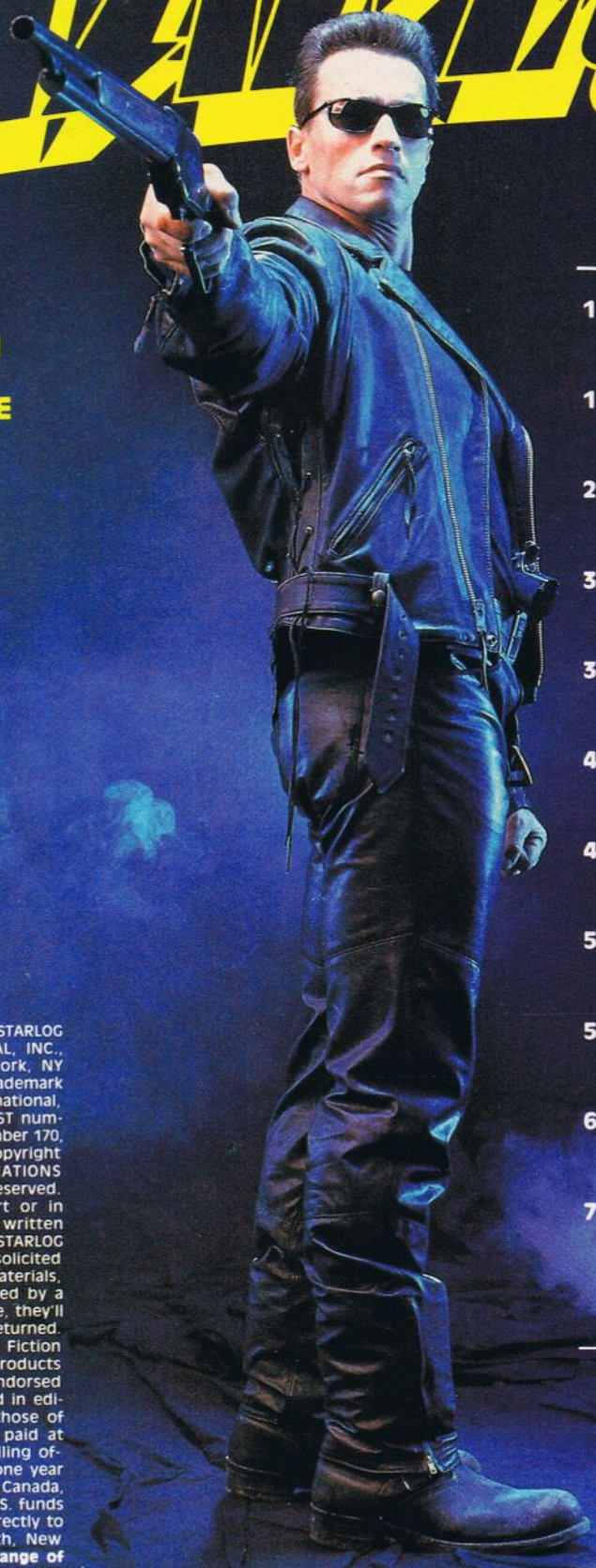

This time, there are two terminators in town—Arnold Schwarzenegger and Robert Patrick (see page 50).

FEATURES

DEPARTMENTS

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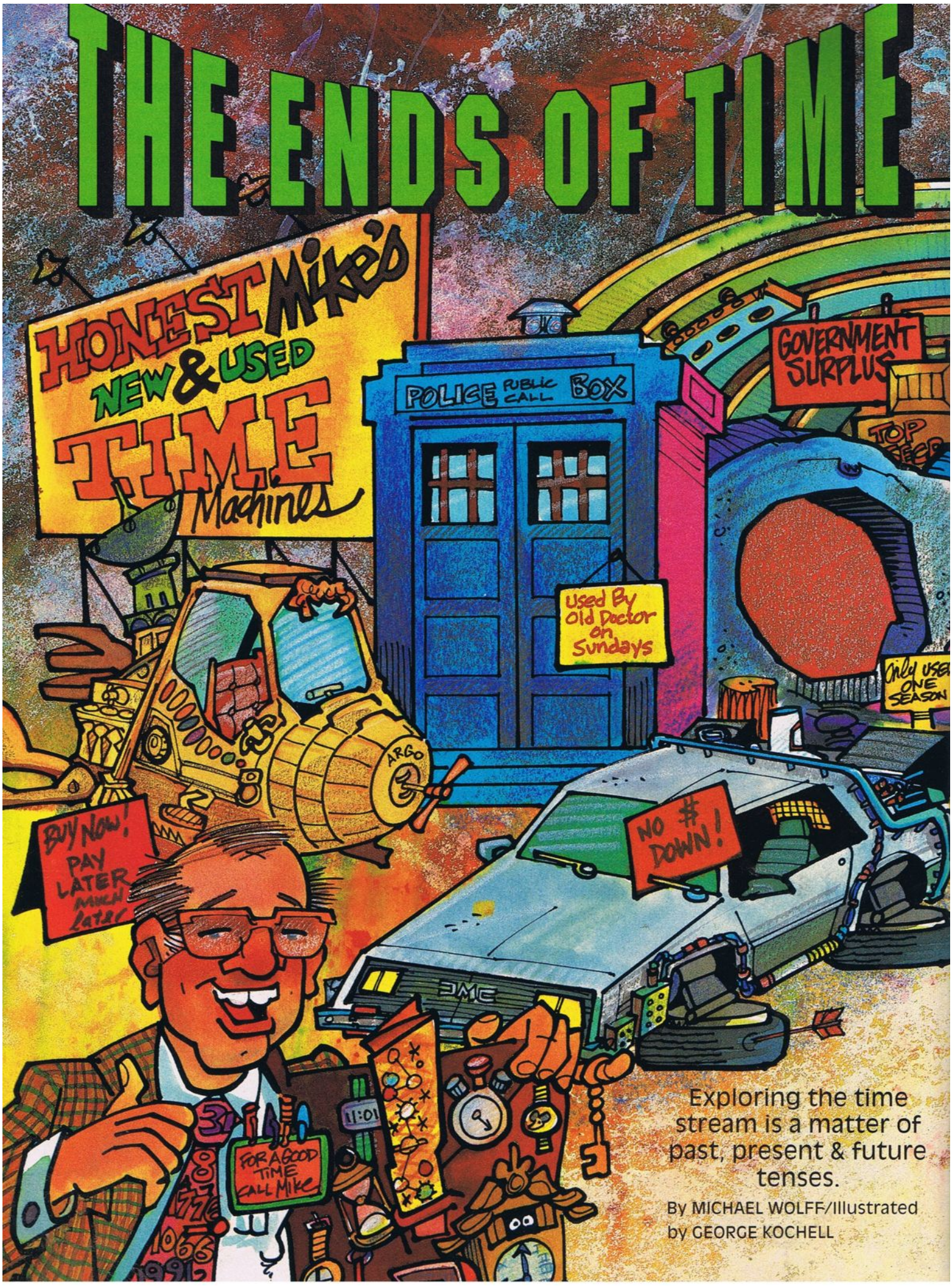
THE ENDS OF TIME
HONEST Mike's NEW & USED TIME Machines
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11:01
FOR A GOOD TIME CALL MIKE
Exploring the time stream is a matter of past, present & future tenses.
By MICHAEL WOLFF/Illustrated by GEORGE KOCHELL

Actually, according to John Korty and Charles Swenson's 1983 film *Twice Upon a Time*, it's all rather simple. Time is controlled by the Cosmic Clock, which just happens to be hanging on the back wall of a corner loan shop in a big city. Remove the glowing mainspring from the clock and *everything* grinds to a halt.

It has been said that the problem with Life is that it doesn't come equipped with a musical soundtrack. The problem with Time is that it's always traveling in the same direction equally for all things and all places. Or at least that's the common belief. But make a statement like that, and certainly someone will set his or her chin and try to do something about it.

Time travel maintains a fairly popular hold within SF and fantasy stories and films. Writers can bypass the nasty mechanics of actually getting from moment A to moment B and concentrate on the situation's fun aspects, while filmmakers are limited only by what they can locate in the prop department, plus the decision on just how complex to make the time travel system itself: running the spectrum from the drug-induced transport of Chris Marker's *La Jetée* (1962) to the enormous electronic caverns of Irwin Allen's TV series *The Time Tunnel* (1966).

What makes time such a difficult nut to crack is that, even though we've all been traveling through it for centuries, we're only *now* beginning to figure the arrangement out. Time, however, isn't so much a medium as it is a dimension. It's usually listed as the Fourth Dimension, the three previous ones being, of course, length, width and depth.

Stephen Hawking, Professor of Mathematics at Cambridge University, and perhaps the only person living outside of Looking-Glass land who actually understands how Time works, speaks in terms of *space-time coordinates*. We move from event to event, with each event occupying a point in space-time specified by its particular time and location. Space-time becomes a four-dimensional area defined by events.

Before Professor Hawking, there was Albert Einstein, who observed that time, space and motion are only measurable in relation to one another. Time is measured by motion in space, motion is measured by time and space, and space is measured by time and motion. Einstein's theories point out that the nature of time can be altered by very high speeds, intense gravitational fields, or both.

Right on Time

Starship engines, which bulldoze their way across interstellar distances, tend to do double duty as time machines. The starship engine which was "liberated" from the UFO in 1985's *My Science Project* could warp time and space to a fantastic degree, creating overlapping areas from various locations and periods. The engine, operating on its own built-in instructions, would offer its ship a selection of time-space alternatives (rather like a gearshift lever in a sports car). If the film's heroes had managed to engage a specific "gear" within the engine's directional system, they might have found themselves transmitted to another star system.

At a much lesser velocity, Dr. Emmett Brown's modified DeLorean only needed to hit 88 miles per hour in order to have "some serious shit" happen. The secret of Brown's process lay in a capacitor which converted 1.21 gigawatts of electricity into a massive energy flux which was shaped through a laser-guided magnetic field into a gravitational mass placed directly in the car's path. The mass was sufficient to distort space-time locally. Direction through time was controlled by simply rotating the gravitational mass at half the speed of light (93,136 miles per second) and traveling perpendicular to it. Traveling against the rotation would send the car into the past, traveling with the rotation, into the future.

Even more powerful gravitational fields have assisted one of the most famous of all SF time travelers. *Doctor Who*'s Time Lords first received their powers when the Gallifreyan engineer Omega created a supernova explosion in 1054, indirectly forming the Crab Nebula. Energy from this explosion was harnessed to provide the immense power needed to create artificial time warps, the precursors to the TARDIS.

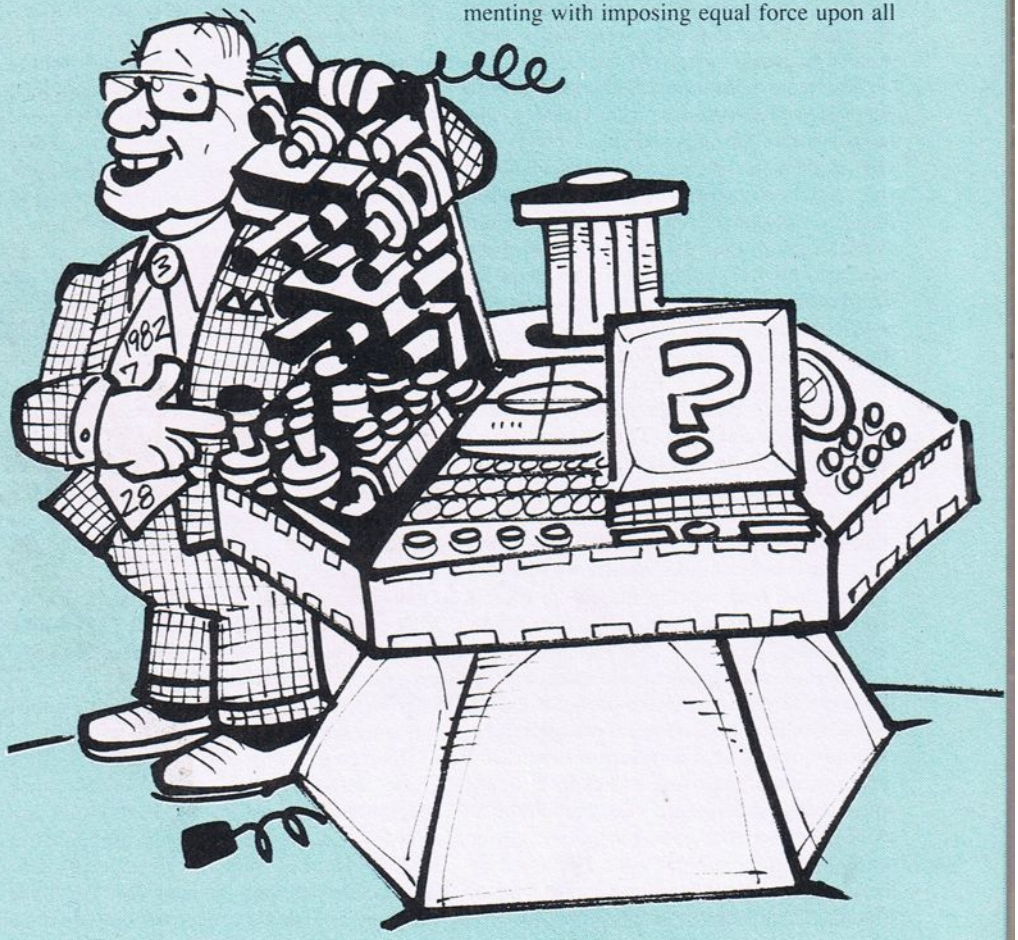
Omega's process was refined by Rassilon, who managed to capture a black hole and trap it within Gallifrey's center. The gravitational stress which the hole exerts in all directions upon Gallifrey provides a constant source of power for the TARDISes, enabling them to create warps in space-time while disguised as various things, such as phone booths. A recent movement even believes that the Time Lords actually exist in San Dimas, California, circa 2688 AD, and that, rather than Omega and Rassilon, they were inspired by an excellent rock group known as Wyld Stallyns. This may be an area for further study.

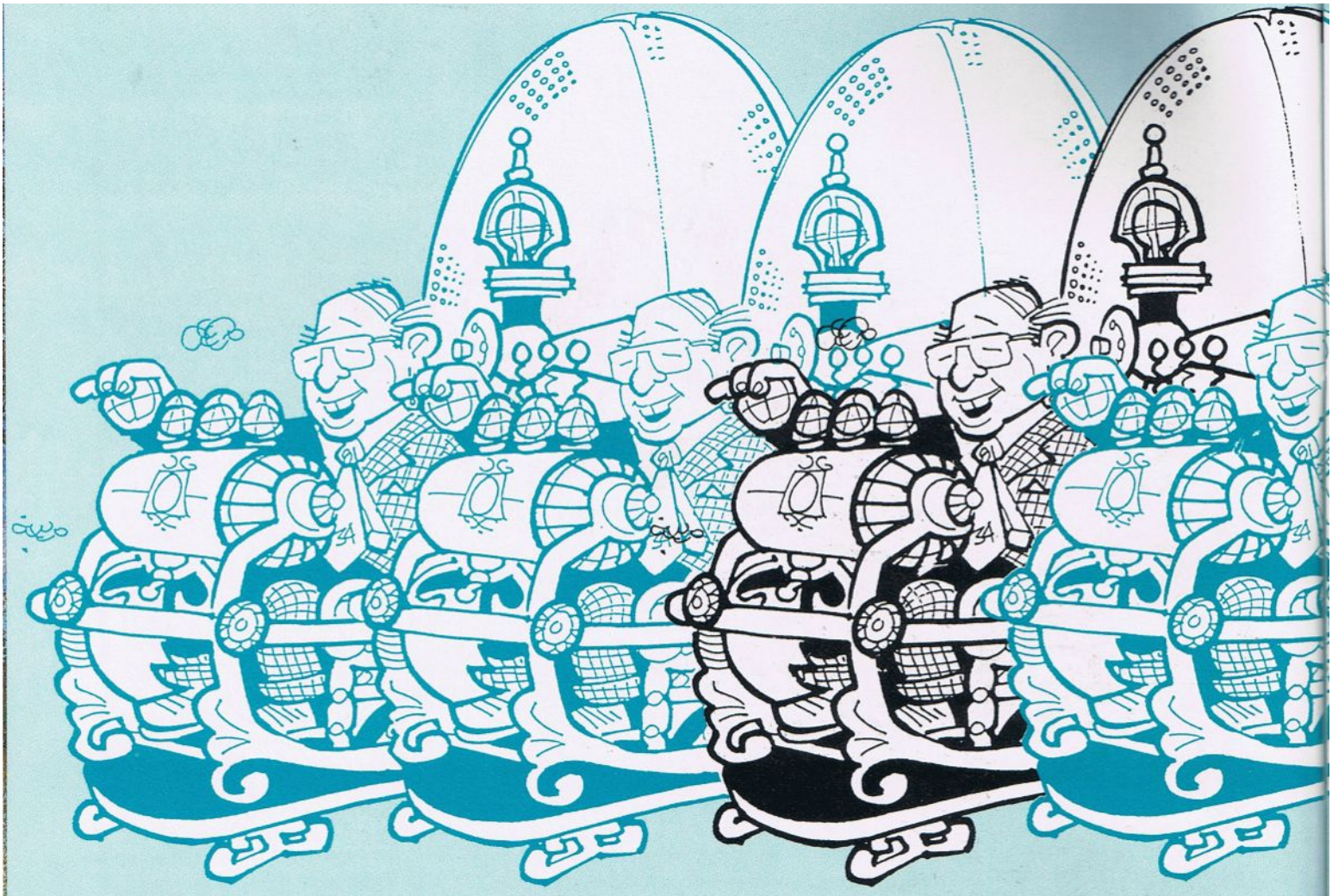
Nick of Time

Time machines, not being limited by known principles of engineering, have appeared in various shapes and sizes. In 1895, H.G. Wells designed his machine to be constructed out of ivory, nickel and rock crystal. It was described as being an open-air contraption and remarkably easy to operate: One lever sent the machine into the future, and another into the past.

Perhaps to preserve his scientific secrets, Wells glossed over how his machine moved through time, but George Pal's 1960 film version of the novel provided a clue in the form of the spinning copper disk which dominated the device piloted by Rod Taylor. The disc was part of a mechanism which produced a powerful localized gravitational field that the machine rotated against, creating a time warp. To produce a field of such strength would require some sort of incredibly dense material, and yet the Time Machine could rather easily be pulled and pushed about by a single human or a couple of Morlocks. An alternative solution would be to consider that the Time Traveler may have accidentally stumbled upon the method of traveling through dimensions by experimenting with imposing equal force upon all

Would you buy a used TARDIS from this man?





spatial coordinates of a gyroscope (a system expanded upon in Robert Heinlein's 1980 novel *The Number of the Beast*).

Nineteen years later, Nicholas Meyer's adaptation of *Time After Time*, based on the novel by Karl Alexander, updated Wells' design to provide several additional features: solar power, a vaporization device to insure that the passenger would remain fluid enough to withstand the voyage, and a safety mechanism which automatically returned the machine to its point of origin. The cabin was both completely enclosed and, best of all, roomy enough to allow Mary Steenburgen to perch on one's lap.

Other time machines reflected a trend towards unique designs. The time sphere of Alain Resnais' *Je t'aime, je t'aime* (1967) appeared more organic than mechanical, whereas the whirling device in 1962's less-than-classic *The Three Stooges Meet Hercules* seemed more suited to washing clothes than transporting people to ancient Greece. *The Twilight Zone* episode "Execution" featured a machine with a transparent receiving booth designed by Russell Johnson (always the professor).

DC Comics' *Time Masters* are forced, by circumstance, to seek a variety of time travel methods, including using a backpack mechanism and a "time sphere" which could be an antecedent to the gone-but-not-forgotten transparent time bubbles once employed by the Legion of Super-Heroes. Over at Marvel Comics, Doctor Doom developed a time machine involving a glowing square that appeared and passed down over the travelers.

In *Cyborg 2087* (1966), Michael Rennie traveled from the future in a machine which resembled a milk can, while the *Voyagers!* of the short-lived ABC TV series relied on a device worn on the wrist. In the 1980 TV film *The Girl, the Gold Watch and Everything*, Robert Hays inherited a watch which could freeze time altogether, a situation similar to "A Kind of Stop Watch" on sale in *The Twilight Zone*. That series also presented Buster Keaton "Once Upon a Time," wearing a time machine helmet which looked as if it could transport the Three Stooges—to meet Hercules, or just about anyone else.

Some machines are not so much vehicles as they are transmitters. In Robert Heinlein's *The Door into Summer*, a scientist developed a method of time travel using polarized gravitational fields. The Guderian Tau-Field Generator of Julian May's "Pliocene Exile" saga closely imposed a dynamic field within the coordinates of "normal" space-time. The process had a serious drawback—it was a one-way trip; travelers attempting to return the same way were ultimately destroyed.

Everyone's absolute favorite time machine, however, has to be the Wayback Machine developed by Mr. Peabody in Jay Ward's classic "Peabody's Improbable History" lectures. A genius by anyone's definition, the canine devised the Wayback Machine as a means to give his boy Sherman some "running room." The resulting device dominated an entire wall, yet was fiendishly simple to operate. Simply turn the dials until the desired place and date appeared, then step through the adjoining doorway and be whisked away. The Wayback Machine also automatically made it possible for Mr. Peabody and Sherman to communicate in the common language of wherever they went, overcoming a problem which many time travelers overlooked, although it never seemed to bother Tony Newman and Doug Phillips as they went through *The Time Tunnel*.

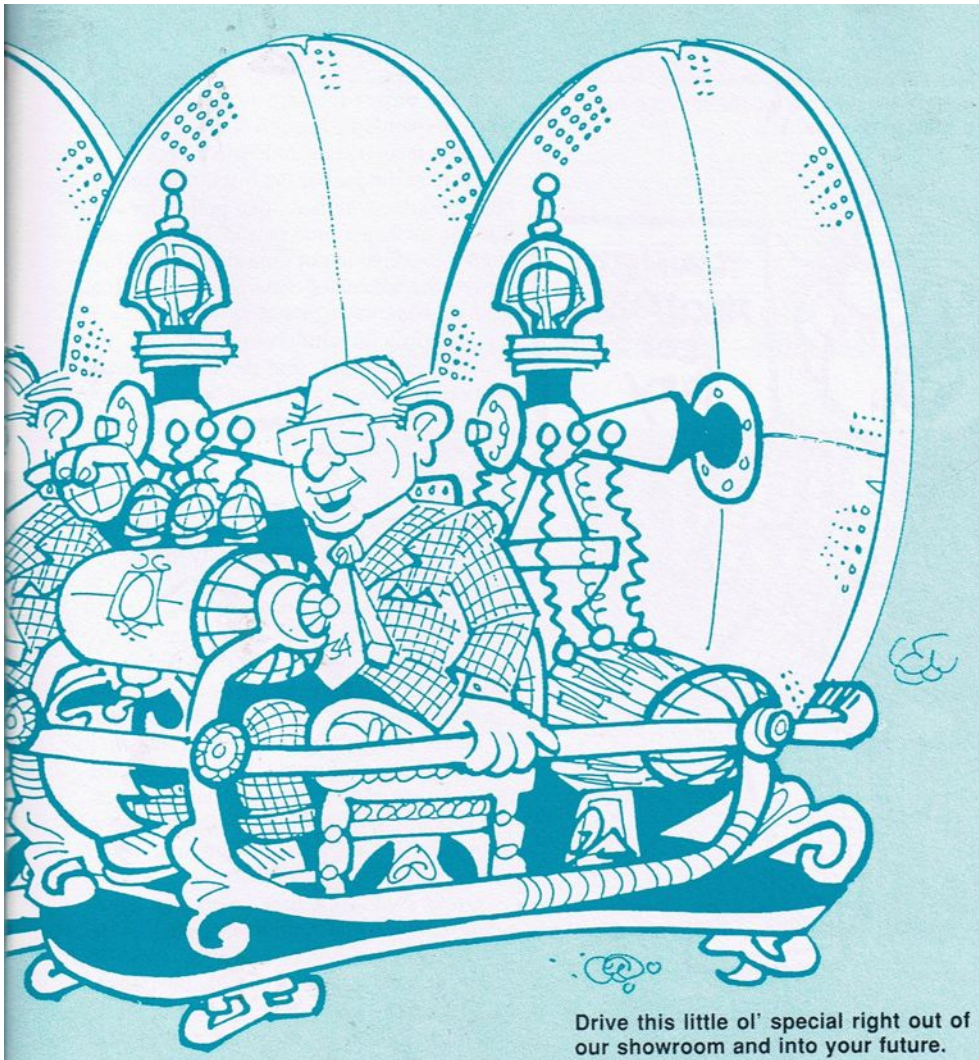
And then, there's *Quantum Leap*.

Stitch in Time

Sam Beckett is certainly time traveling. But, instead of stepping out of a milk can, he's materializing *inside* the bodies of people and assuming control of their lives for brief periods. What would Mr. Peabody say?

Well, he might opine that the Project: Quantum Leap process searches for memory transmissions still floating through space long after the people who "thought" them have passed on. These transmissions are boosted and rebuilt into a semblance of reality within Sam's own mind. So, in a sense, he's not so much time traveling as he's acting as a receiver for images recovered from the past. When the images arrive, his personality kicks in to achieve greater control.

Or: Sam's consciousness is actually sent through a time warp (thought processes be-



Drive this little ol' special right out of our showroom and into your future.

ing better able to survive such a journey than physical objects). But humanity is composed of several subgroups all unknowingly connected through common mental fields which stretch from generation to generation (something like Kurt Vonnegut Jr.'s concept of *karass*). Sam is being shunted about through the various people in his subgroup. Since the subgroup's mental field is so firmly shared, Sam feels he's *completely* in control whenever he leaps into someone.

Then, again: Sam may be "unstuck" in time, like Billy Pilgrim in Kurt Vonnegut Jr.'s 1969 novel *Slaughterhouse Five* (filmed in 1972 by George Roy Hill). Like Wells, Vonnegut tended to gloss over the method of his hero continually moving from one time period to another. As with Sam, Billy Pilgrim's consciousness slipped up and down time, but, unlike Sam, Pilgrim's mind remained in its own body.

There's a subgenre within time travel stories of people who manage to move from one period to another *without* having to resort to *any* type of mechanism. Poul Anderson's 1972 book *There Will Be Time* established an entire group of people who had the ability to send themselves through time, and who were building a conspiracy to control the world. Jack Finney's novel *Time and Again*, and Richard Matheson's *Bid Time Return* (filmed in 1980 as *Somewhere in Time*), also dealt with people who could literally will themselves into the past. Finney has often explored the corners of time—as have such other SF writers as Ray Bradbury, Fred Saberhagen, William R. Fortschen, James R. Hogan and Simon Hawke.

On a more personal note, Ken Grimwood's 1986 book *Replay* tells of a man who suffers a heart attack at age 43, only to awaken and discover that he has gone back to being an 18-year-old. Not only that, but he continues to die at age 43, repeating the cycle time and again. Similarly, a heart attack sent Kathleen Turner back to high school in the 1950s to possibly undo her fate in *Peggy Sue Got Married.*

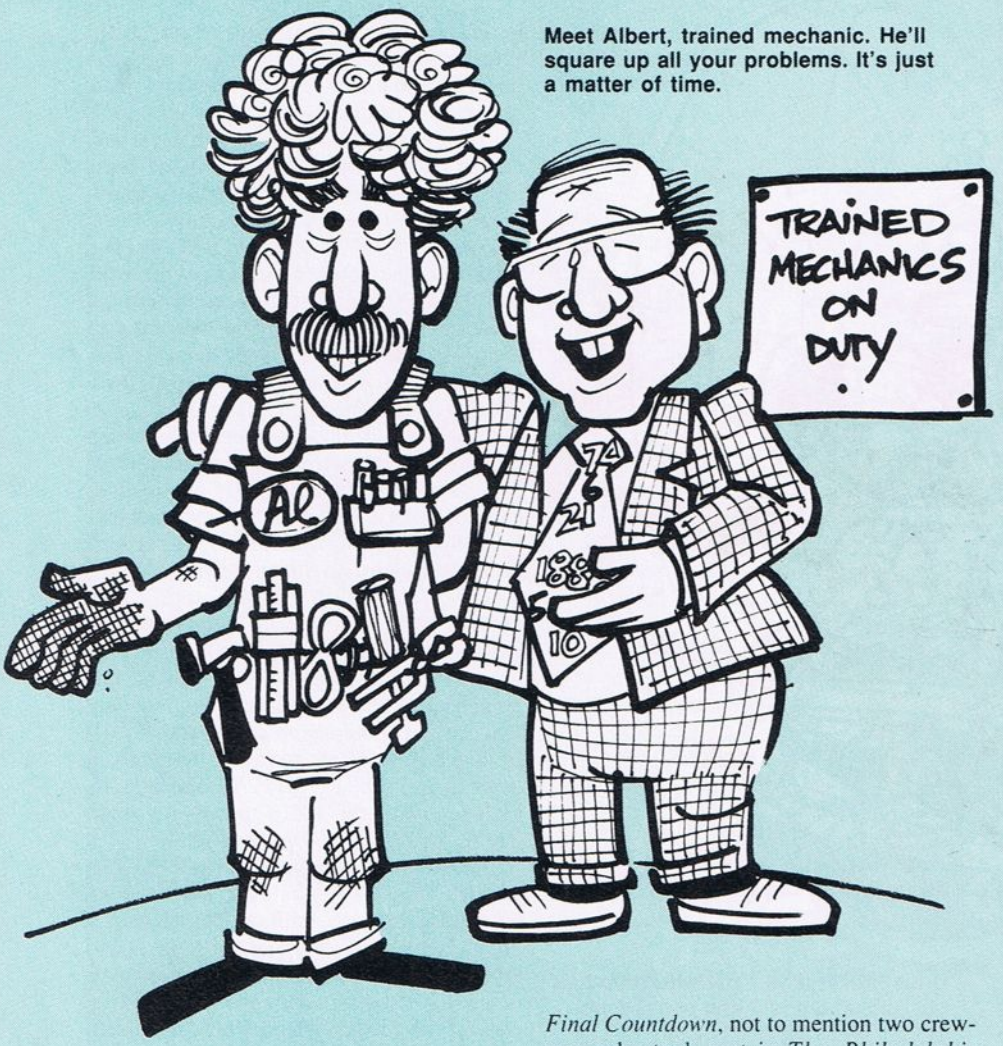
Elsewhere in the universe are the dragons of Anne McCaffrey's tales of the world of Pern. Possessing the ability to teleport across great distances, the dragons, with the assistance of their human partners, advanced their power to the extent where they could move across time. Dragon teleportation, it seemed, had its foundation in the ability to establish a mental fix upon a different set of physical coordinates, and then draw upon some sort of internal power source in order to physically teleport from point A to point B. If this becomes possible, then the next step, that of establishing a mental fix upon a different set of time coordinates, becomes easy.

The exact biological mechanism which might allow a living creature to move itself through time is hard to nail down, our knowledge of biology limited to life forms living in normal space-time. But there are some cases where it seems that hard physical contact is required. In Mark Twain's *A Connecticut Yankee in King Arthur's Court*, a man is transported to the sixth century AD after being struck in the head. This brain concussion triggered some hitherto unknown process which made time travel possible. There was a time when my mom threatened to knock me into the middle of next week, so apparently there's something to it.

Time travel requires brute power in order to create a working warp. Madeline L'Engle's novel *A Wrinkle in Time* introduced Mrs. Whatsit, Mrs. Who and Mrs. Which, three ladies who were able to *tesser* or *wrinkle* their way through time and space. Since they had begun their lives as stars, they had the power to get the job done.

Want an inexpensive trip? Try the Connecticut Yankee model.

MICHAEL J. WOLFF, STARLOG's Interplanetary Correspondent, played games with Death in issue #168.



Meet Albert, trained mechanic. He'll square up all your problems. It's just a matter of time.

Out of Time

Apart from time machines, and people getting hit on the head, there has been the problem of warps occurring naturally, or though accident. Einstein demonstrated that time was elastic, and that the presence of forces, such as excessive gravity, could warp it out of shape. *Time Bandits* (1981) postulated that these warps were due to God's having to perform a rush job on the Universe. The warps were thoughtfully indicated on a map which a repair team (scrupulous or otherwise) could use in locating them.

Spaceships usually stumble upon these warps. The starship *Enterprise* discovered a number before utilizing the Sun's gravitational field to produce a "slingshot effect" to facilitate further time travel. To the list could be added the one-man expedition in *The Outer Limits* episode "The Man Who Was Never Born," a similar mission which ended up *Beyond the Time Barrier* (1960), a two-man ship which crashed in prehistoric times for the benefit of the CBS sitcom *It's About Time* (1966), a slightly more populated spaceship which traveled to 2508 AD in *World Without End* (1956) and two spacecraft, carrying six humans one way and three intelligent apes the other, in three entries from the *Planet of the Apes* series.

The U.S. Navy nearly lost the carrier *Nimitz* and all hands not far from Pearl Harbor because of a time warp in 1980's *The Final Countdown*, not to mention two crewmen who took part in *The Philadelphia Experiment* (1985). *The Twilight Zone* began with a visit to Pearl Harbor in Rod Serling's "Time Element," (a precursor to the series); in fact, Pearl Harbor is a popular time travel destination, along with the *Titanic*, the Crucifixion, Nazi Germany, the Alamo, Ford's Theater and November 1963 Dallas. They're all places where events occurred that we still somehow yearn to change.

Of course, *The Twilight Zone* was a frequent way station for people going back and forth through time in episodes such as "Walking Distance," "The Last Flight," "A Stop at Willoughby," "Back There," "The Odyssey of Flight 33," and "A Hundred Yards Over the Rim." In most cases, the trip was deceptively simple. The travelers were involved in nothing more complicated than walking across a desert to find the future or stepping off a train and into the past.

Slightly more complicated was a recent adventure of *The Flash* where the hero was hurled 10 years into the future after being struck by a missile. The missile had the characteristics of a Sidewinder air-to-air weapon, which flies at supersonic speeds. Sidewinders have hit targets before without sending them—as far as we know—through time. And if the Flash was hit by the missile, then he wasn't running fast enough to take advantage of relativistic effects. What happened?

The answer was at the journey's end: a reactor mishap at S.T.A.R. Labs. A nuclear reactor, especially one in trouble, would have the power to warp time locally. The warp expanded through time from the troubled reactor, encountering a "pot hole" 10 years in the past at the instant the missile hit the Flash, who was then pulled forward into the mishap's time period. His presence altered the direction of time slightly to where the reactor, instead of undergoing its original mishap, went through a blow-up because of the viliain's machinations, creating yet another warp which sent the Flash back to the period of the original "pot hole."

Time travel creates the problem of altering history, often with disastrous results. Julian May solved the problem in her "Pliocene Exile" saga through the simple expedient of placing her travelers in a time period which would eventually be wiped clean by the Ice Age.

Another answer comes in the idea of "alternate timelines." For instance, we know that in the series' first film, Superman traveled back in time to save Lois Lane from the earthquake. But the fact that he had to do so meant that a timeline existed in which Lois died. All Superman did was to return through time, save Lois and establish a second timeline where she lived. But his action didn't erase the previous timeline, where Lois is still dead as a doornail.

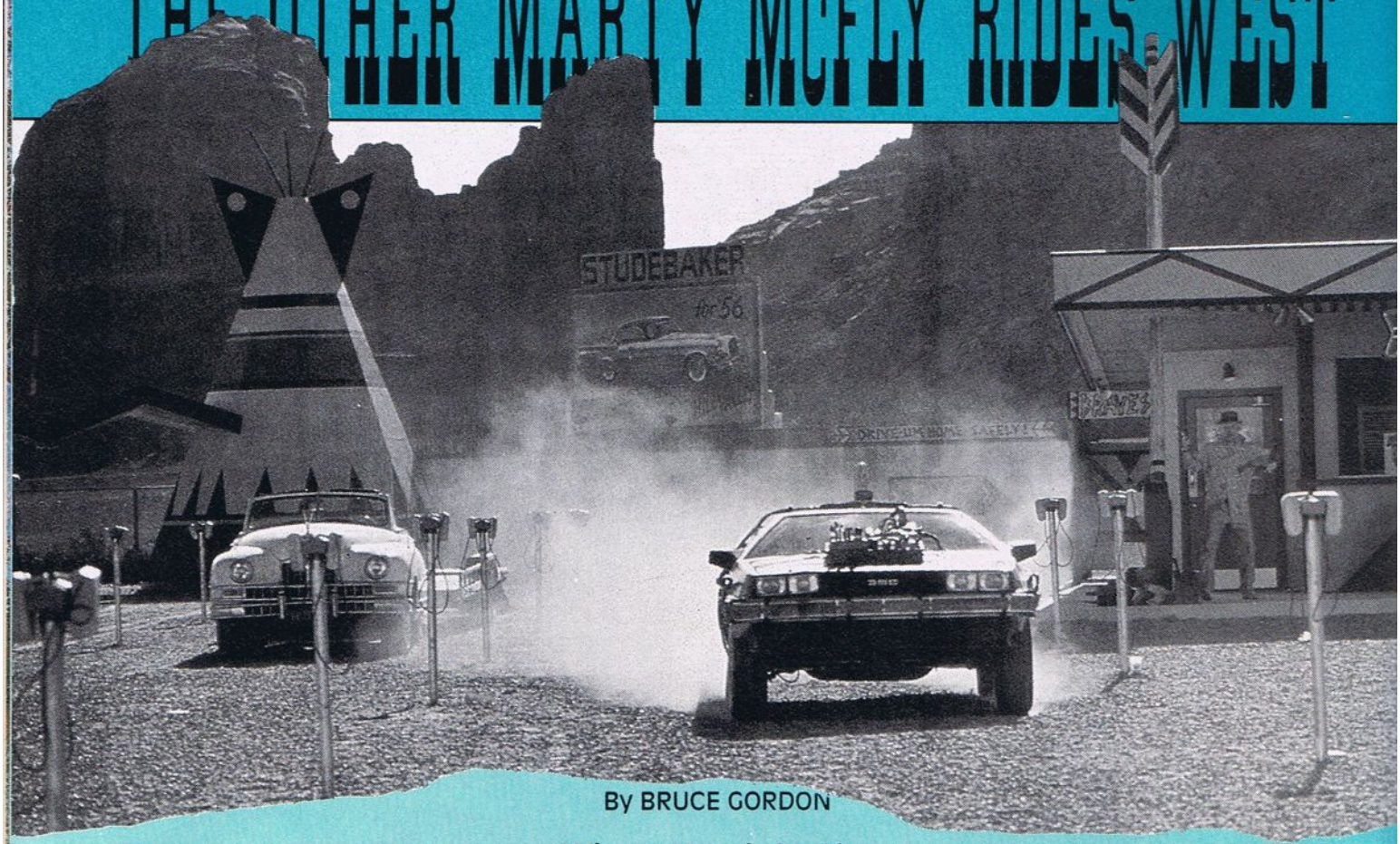
Often, travelers in time go off with a particular mission—to right some wrong in the time stream (as in *Voyagers!*, *Quantum Leap*), to serve, protect and study the past (as in Connie Willis' "Fire Watch"), or to specifically change history (the goal of those Terminators charged with dispatching Sarah and John Connor).

Each event in space-time is capable of producing an infinite variety of conclusions, the fiction of parallel worlds which offers the tantalizing possibility of what *might* have been. Variations are continually being explored: a world where the Byzantine Empire never fell (Harry Turtledove's *Agent of Byzantium*), a world where the dinosaurs never died out (Harry Harrison's *West of Eden*) and one where the Confederacy won the Civil War (Ward Moore's *Bring the Jubilee*). There are countless others—even a Marvel comic (*What If?*) to examine superheroic variations.

Nazi Germany has earned its own subgenre within this field. In Jerry Yulsman's *Elleander Morning*, Adolph Hitler is assassinated before his rise to power, while Len Deighton's *SS-GB* explores an England which lost World War II and lives under Nazi domination. An entire anthology, Gregory Benford and Martin Greenberg's *Hitler Victorious*, is devoted to Nazis coming out on top.

The problems of time travel, like its solutions, involve a complex variety of directions that writers have been dealing with for centuries, and quantum physicists are only now beginning to scratch at. The efforts of SF and fantasy have shown the audience the possibilities that could be, and the physical answer, when it arrives, may be as practical as a clock, and yet as surprising as a grin without a cat.

THE OTHER MARTY McFLY RIDES WEST



By BRUCE GORDON

A funny thing happened on the way to the theater. We got there in the wrong time. Not *at* the wrong time, but *in* the wrong time.

It happened last year, on Tuesday, April 3, 1990, to be precise. In all our excitement to get an early look at *Back to the Future III*, which wasn't due to open in theaters for another month, it seems we somehow managed to cross over into an alternate dimension of time: one with an alternate version of *Back to the Future III*.

That's right, there's another timeline with another *Back to the Future*. And amazingly enough, this other *Back to the Future* answers every question ever raised in our previous essays!

Right about now, you're probably asking yourself, "How could such an amazing (and convenient) coincidence come to be?"

Well, it's really quite simple.

There's no doubt that we live in a world of impulse and instant gratification. Being charter members of that not-so-elite club, we couldn't just sit around and wait for *Part III* to come out. So, we did what comes naturally—we made a quick trip over to the Universal Studio Tour in Hollywood and hijacked their time-traveling DeLorean.

While some friends created a diversion aboard the Glamor Tram, we jumped over the barriers and hopped into the DeLorean. With a flash of light and trail of flames, we shot across the parking lot at 88 miles an hour—which, coincidentally, is also the exact speed it takes to elude studio security!

When "Back to the Future III" opens in another timeline, it offers all the answers.

In an instant, we were transported forward to May 25, 1990, just in time for the opening of *Back to the Future III*.

But there was a slight problem.

As we have all learned from Doc Brown, whenever you go forward in time, you wind up arriving in your own *most likely* future. Or, to put it another way, your most likely future is simply an extension of the way things are *today*.

Now, here's the important part: At the moment we went forward in time, on April 3, 1990, "The Return of the Other Marty McFly" had just been published in STARLOG #154. However (and it's a big however), on that date, *Part III* had not yet opened in the theaters.

So, when we went forward in time, we wound up in *our* most likely future, a future with a version of *Back to the Future III* that was exactly the way the article had predicted it would be.

Ahead of Time

At 8:00 p.m., on May 25, 1990, *Part III* screened for a loud and passionate crowd. Clutching our souvenir Marty McFly rainbow caps in our hands, we anxiously waited for the story to unfold.

This is the film we saw in that alternate dimension:

As expected, the film opens in 1955, at the moment the lightning hits the clock tower and sends Marty back to 1985. Doc is dancing a jig in the street, when out from behind a parked car jumps another Marty McFly. "I'm back *from* the future," Marty hollers, as Doc falls to the ground in a dead faint.

The scene changes, and we see a flying DeLorean rushing through the clouds. We move in on the car, and see it's not Doc at the controls, it's Old Biff! He has just given a copy of *Gray's Sports Almanac* to his younger self, and right now, he's busy trying to find his way back to 2015.

Just as Old Biff hits 88 miles per hour, the Destination Time Panel shorts out. If only Doc had gotten that panel fixed! With a major memory flashback jumbling its circuits, the panel resets itself to Doc's previous destination, October 27, 1985.

But this time, because Old Biff has given himself the *Sports Almanac* and altered the future, it's October 27 in the *evil* 1985.

In one of those great cosmic coincidences, Old Biff lands on the roof of Biff's Pleasure Palace at the moment his younger self—Rich Biff—is regaining consciousness after Doc knocked him on the head with the DeLorean's door.

As Rich Biff stumbles to his feet, Old Biff comes fuzzily into view. Rich Biff stares for a second, then realizes that this old man is the same guy who gave him the

Sports Almanac back in 1955.

Rich Biff grabs Old Biff, demanding some answers—and also demanding the keys to that flying DeLorean. Old Biff struggles with Rich Biff—he's well aware of what kind of an adversary he's up against—until Old Biff clubs Rich Biff over the head with his cane. The cane cracks, but doesn't break off. Rich Biff stumbles backwards and falls through the skylight to the floor of his penthouse below.

Old Biff climbs back into the DeLorean, starts it up and takes off once again.

Twenty feet below, Rich Biff lies dying on the floor.

Realizing he may have just killed himself (literally), Old Biff can only think of one thing to do: Go back to 1955, retrieve the sports book and return everything to the way it was. Old Biff takes off in the DeLorean and disappears in a flash of light.

At the very moment Old Biff leaves 1985, Rich Biff dies on his penthouse floor.

The scene changes to 1955. It's 6:00 a.m., 22 minutes before sunrise, and Doc and Marty have just arrived from the evil 1985. Marty sets off to retrieve the *Sports Almanac*—but winds up getting trapped in Young Biff's garage instead.

Just down the road, we see Old Biff also arriving in 1955. He stashes the DeLorean—something everybody must be old hands at by now—in a hiding place down at Old Man Peabody's Twin Pines, er, *Lone Pine* Ranch.

Finally, at 6:00 p.m.—after 12 wasted hours in 1955—Young Biff opens the garage and takes his car to the Enchantment Under the Sea dance, with Marty hiding in the back seat. Moments later, Doc rides up to the Tannen house on a bike. "Marty!" he calls. "Where is that kid?" Finding no sign of Marty, Doc rides off.

As Doc pedals away, out of the bushes steps Old Biff. He has been trying to figure out a way to retrieve the *Sports Almanac*, but now it looks like somebody—namely Doc and Marty—is going to do the job for him! Old Biff figures it's time to get back to 2015, before anything else goes wrong. He heads back to Peabody's ranch and fires up the DeLorean.

The time panel display reads 6:38 p.m.

Old Biff swings the DeLorean around the barn, guns it up to 88 miles an hour—and flies straight into Old Man Peabody's last remaining pine tree. The force of the impact sprays pine needles across two counties. Old Man Peabody runs out of the house, firing his shotgun into the sky. "That does it!" he screams. "From now on, I'm breeding oak trees! Let's see somebody try and knock *those* down!"

Meanwhile, Old Biff is on his way back to 2015. But there's one thing he didn't figure on: Since his younger self still has the *Sports Almanac*, the evil 1985 is still the most likely future. And in that evil 1985, Old Biff is lying dead on the floor of his Pleasure Palace penthouse.

That means there's not going to be any place for Biff in 2015.

So, when Old Biff lands the DeLorean in 2015, he crawls out, collapses and disappears, forever erased from existence. Biff has rid the world of Biff.

We return now to Doc's home at 1640 Riverside Drive. It's 1955 again, and time for Doc to help Marty return (once more) to 1985.

Doc and Marty head off to the DelGado mine, where they find the DeLorean still sealed off in a side tunnel after 70 years, two months and 13 days. In the process, they also find Doc's tombstone in the old Boot Hill cemetery outside the mine.

Here Lies Emmett Brown. Died September 7, 1885. Shot in the back by Buford Tannen over a matter of 80 dollars.

Now, it's Marty's turn to save Doc.

They gas up the DeLorean, and Marty time travels back to Wednesday, September 2, in the wild, wild west of 1885. Marty tracks down Doc and convinces him it's time to leave the Old West behind.

When Doc realizes that they need gas for Marty's DeLorean, they do the obvious thing: They head for the old DelGado mine, where there just happens to be another DeLorean—the one that carried Doc to 1885. And as anyone might assume, *that* DeLorean still has plenty of gas.

Back in 1885, Marty finds both his friend and trouble, as "Mad Dog" Buford Tannen is a-gunnin' for Doc and a fella named Eastwood, Clint Eastwood.

All Future III Photos: Copyright 1990 Universal City Studios

Back in Time

On the way back from the mine, with Marty's horse lugging two small barrels of gasoline, Doc spots Clara Clayton and her runaway wagon. Doc rides off and rescues Clara, pulling her to safety moments before she would have plunged to the bottom of Shonash Ravine—Clayton Ravine—the

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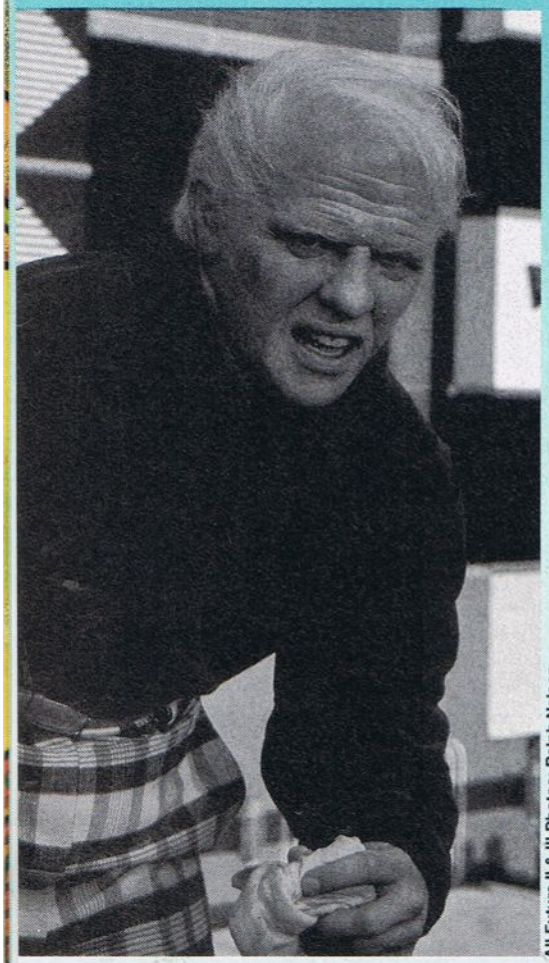
BRUCE GORDON, a show producer at Walt Disney Imagineering, is part of the team developing the new Tomorrowland for Disneyland. His previous exploits with the "Other Marty McFly" appeared in STARLOG #108 and #154. Tony Baxter, David Mumford and Doug Hartwell provided special assistance and technological input for this journey.

A fight between Rich Biff and Old Biff ensues when Old Biff appears in Rich Biff's evil timeline. The fight results in Rich Biff's untimely demise.

All Future II Photos: Copyright 1989 Universal City Studios



All Future II & III Photos: Ralph Nelson

deadly fall that was to have been her destiny.

Back at the blacksmith shop, Doc and Marty patch the hole in the fuel line and gas up Marty's DeLorean. Outside the shop, the Sun is already beginning to set, and the rapidly approaching darkness will make a nighttime escape impossible. Remember, Doc's letter told us that the flying circuits were destroyed when he crashed, and there aren't any roads here in 1885.

Yes, where they're going, they *need* roads!

So, with a free evening on their hands, Doc and Marty head over to the Hill Valley Town Festival, where Mad Dog challenges Marty to a shootout, to take place Monday morning at 8 a.m. Doc looks at the photo of the tombstone and sees Marty's name—Clint Eastwood, that is—where Doc's own name used to be. "Doc, don't worry," says Marty. "We're going back to the future tomorrow!"

There's just one problem, though—Doc has fallen head over heels for Clara. (After all, she's one in a googolplex—and she likes Jules Verne!) Doc decides to stay in 1885.

Sunday morning dawns as Doc helps Marty get the DeLorean ready for its return to 1985. On a horse trail just outside of town, Marty speeds up to 88 and disappears in a flash of light. Doc pulls out the Polaroid of the tombstone, and sees that the space where Marty's name used to be is just blank granite.

As Doc starts dancing in the dirt, he turns around—and finds himself face to face with Mad Dog Tannen, who has been watching the whole thing from up atop the hill. "We were all ridin' over to Pine City on, uh, business," says Mad Dog, "when we saw that silver wagon you were ridin'."

Mad Dog demands to know where Marty was going—and when he's coming back. Doc smiles. "He isn't ever coming back, Tannen. He's gone for good!"

"Well, I aim to shoot somebody on Monday," Mad Dog growls, "and I'd prefer it be that Eastwood fella. But if he's just too dang yella, I guess it'll have to be you!"

Doc looks down at the Polaroid. It's no longer blank. Emmett Brown is once again carved clearly into the stone.

So, Doc decides he had better get out of Hill Valley—and Clara insists on going with him. At precisely 8:00 a.m. Monday, Doc and Clara ride into town, and run straight into Mad Dog and his gang.

"Where do you think you're goin'?" Mad Dog asks.

Mustering up his greatest bravura, Doc hollers, "What do you care? Where we're going, you'll never find us, as long as you live!"

"As long as *I* live?" Mad Dog snarls. "If I was you, I'd worry about how long *you're* gonna live!" As Mad Dog pulls out his gun, Doc rears his horse up into the air—sending Mad Dog tumbling headfirst into the tombstone. It shatters into the street.

Doc looks over to the station, where the train is already pulling out. "Come on, Clara!" Doc hollers. "We'll head off the train at Coyote Pass!" As Doc and Clara make a dash for the train, Mad Dog stumbles to his feet, points his gun at Doc, then falls over backwards into a pile of manure.

One frantic ride through the woods later, Doc and Clara catch up with the train, and leap from their steeds onto the caboose. They collapse into a pair of seats, settle back and ride the train all the way to the end of the line—San Francisco, that boomtown by the bay, a city with everything a scientist could ever need.

The scene changes again and we rejoin Marty as he arrives in 1985, at 11:00 a.m. on Sunday morning, October 27.

With a flash of light, he crashes through the time barrier—then crashes headlong into the Fox Photo Booth in the mall's parking lot. The horse trail Doc picked in 1885 must have run right through Old Man Peabody's ranch, the mall's future site.

A six-man construction crew is standing near the wreckage, staring in disbelief at the car that came out of nowhere. The crew had just finished working an all-night shift, replacing the booth that the Libyans had crashed into the day before. Now, it's just broken lumber and little yellow boxes.

Miraculously, Marty escapes the crash unhurt. He crawls out of the twisted wreckage, stands up, and sees the construction workers coming. They're not smiling.

Marty takes a quick look at the DeLorean. The car itself might still be driveable, but the critical time circuits are completely destroyed. And with Doc still living back in the Old West, there won't ever be anyone around to fix them.

As Marty backs away from the rapidly gathering crowd—then turns and breaks into a full run—the camera pulls back and we see the sign at the parking lot entrance.

The Oak Tree Mall.

Marty makes his way back to his house. It's 11:15 a.m., and the rest of the McFly family is on their way to Sunday brunch. As Marty walks up the driveway, he sees that the garage is empty. "Hey, Marty," his sister calls. "What are you doing back here? I thought you went to the lake."

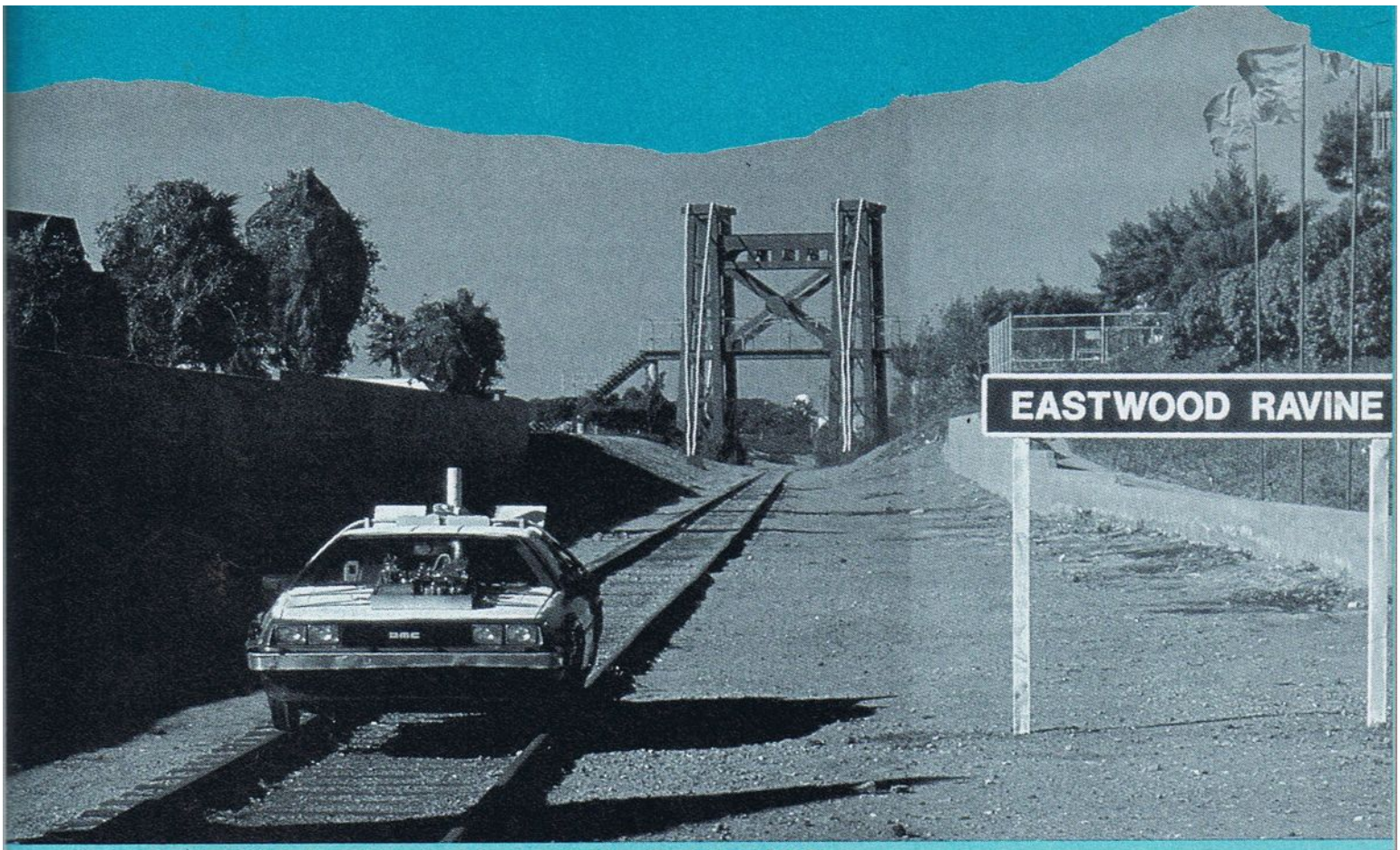
He gives her a puzzled stare, then looks into the empty garage. "Where's my truck?"

"You drove off in it yesterday morning, Marty. Are you all right? Where's Jennifer?"

"That's what I'm gonna find out," Marty replies. With an uneasy feeling growing inside him, he grabs one of his skateboards out of the garage—wheels again!—and rides off to find Jennifer. "Where's that hoverboard when I need it?" he mutters to himself. "I sure hope Doc is taking good care of it!"

Marty skates up to Jennifer's house and finds her still sleeping on the porch. He awakens her with his prince's kiss—the same kiss he has been trying to plant all these years. (Well, actually, it has only been since two days before!)

Jennifer asks Marty where his truck is.



Marty's back in 1985, but are things back to normal? After all, what used to be (Clara) Clayton Ravine is now Eastwood Ravine (in at least one *Part III*).

"Marty's got it," Marty replies. She stares at him. "*Another* Marty," he continues, as if that answers the question.

"What other Marty, Marty?"

Marty stares off into space. "There can only be one answer," he finally concludes, "there *must* be two of me here in 1985."

Two Marty McFlys!

OK, admit it, you *knew* it had to come to this, sooner or later!

Another Time

The scene changes, and now we're seeing Marty—the other Marty—riding in the truck. And sitting next to him is, you guessed it, another Jennifer!

They're on their way back from their Saturday camping trip (which went very well, judging by the looks on their faces). As they're waiting at a traffic light near the train tracks, another pickup stops next to them. At the wheel is Needles.

"How's it hangin', McFly?"

Needles obviously wants to race—and Marty isn't above taking the bait. But remember, this is the Marty who has just returned from 1955, and who has only been driving this truck for one day. All *he* ever had was a skateboard!

The light changes, and with a squeal of tires, the two trucks take off together. Needles is out in front as Marty tries to shift gears. He looks down at the shifter—just as a Rolls Royce pulls out from a side street.

Marty looks up, but it's too late.

We cut back to our Marty and Jennifer, as they walk down the road, trying to sort out what's going on. In the background, we can hear the sound of sirens. As Marty and Jennifer round the corner, they can see there has been a wreck. One of the cars looks like it used to be a Rolls Royce, and the other car looks like—Marty stares in horror—*his truck*.

His truck, with him inside!

And another Jennifer!

From across the street, they can see the other Marty lying on the ground, still breathing. And there's the other Jennifer—she's all right—leaning over him.

"Marty," our Jennifer gasps, "that's me!"

She starts to cross the street, but Marty pulls her back. "We can't let them see us," he says. Then, he adds, "And don't ask why! Just trust me on this one!"

They both take cover near a crossing gate on the railroad tracks. "This must be the accident Doc warned me about in his letter," Marty says to himself, "the accident that ruins my life. Uh, *his* life."

Jennifer stares at him. "The accident? Then, it *wasn't* a dream!"

Marty and Jennifer watch from the distance as the accident is cleared away. Not sure exactly what to do, they turn and walk slowly back to town, following the railroad tracks. As the tracks pass through a thick grove of trees, Marty and Jennifer hear a distant rumble—then a blinding flash of light knocks them to the ground.

A huge, steam-powered locomotive has appeared on the track, right in front of them. And waving from the window is Doc Brown.

"Doc," Marty shouts. "I didn't think I would ever see you again! You've got to help us, everything's all mixed up! There's another one of me here, and another Jennifer, and I, I mean he, just got hauled away in an ambulance!"

"Don't worry, Marty! You'll be fine—that is, he'll be fine! I've already made arrangements to leave written instructions with his doctor, describing a surgical procedure I learned long ago, back in the future. He'll be as good as new by this time tomorrow!"

"What about the guy driving the Rolls Royce?" Marty asks.

"Don't worry about him. He's just a big motion picture director, out here scouting locations for his next picture. I'll be sending him some story ideas I've had."

"That's great, Doc," Marty hollers back. "I didn't know you wrote stories!"

"Of course, Marty! This one's about a crazy cartoon rabbit!"

"Roger, Doc! Hey, if he likes your ideas, maybe he'll give you a part in the movie!"

"I could play the villain," Doc replies, striking a bug-eyed pose. "A crazed scientist with a grudge against the world. But seriously, Marty, we've still got a problem!"

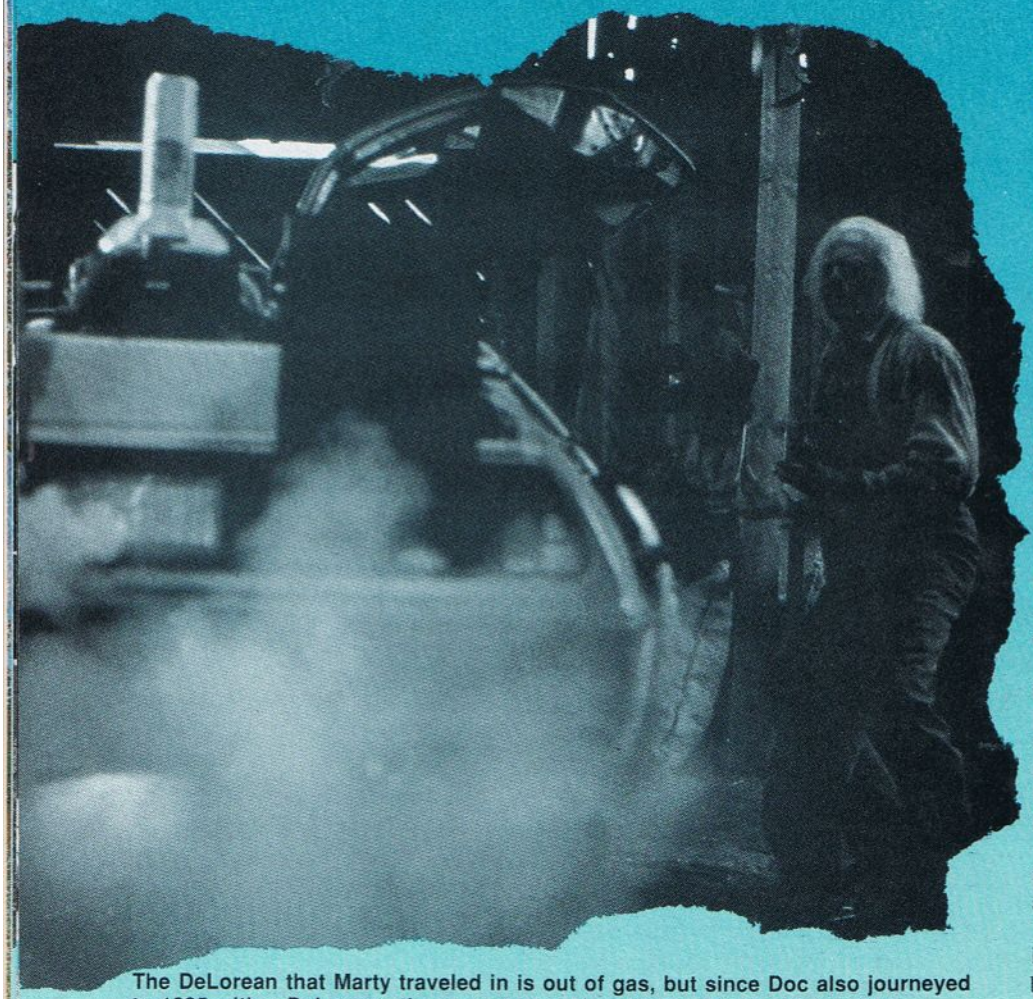
"A problem?"

"Yes. It's you, Marty. You and Jennifer! There's no place for either of you here in 1985, since both of you are already here! It's all my fault, of course, I just wasn't thinking fourth-dimensionally!"

"So, what happened?"

"Well, when I sent that other Marty back to 1985 on the night of the lightning storm, there was a second Marty—you—hiding behind a parked car!"

"I remember, Doc," says Marty. "When you saw me, you fainted dead away!"



The DeLorean that Marty traveled in is out of gas, but since Doc also journeyed to 1885 with a DeLorean, there are two such vehicles. Doc's still has fuel.

"Right! Well, that Marty reached 1985 on Saturday morning, at 1:24 a.m. to be precise. After he discovered his new truck, he and Jennifer went off on their camping trip.

"Unfortunately, when I sent *you* back from 1885, you didn't get here until Sunday morning at 11:00—a full day after the other Marty got here. By the time you arrived, he had already taken your place!"

"Doc," Jennifer yells, "what about me?"

"When we brought you back from 2015 and dropped you off on your patio at 9:00 p.m. Saturday night, we were actually dropping you off in an *alternate* 1985—a 1985 that already had its own Jennifer. When the alternate 1985 was destroyed, the two dimensions transformed into one—which still had both Jennifers. Of course, by the time you woke up, the other Jennifer had already left on the camping trip with the other Marty!"

"So, Doc," Marty wonders, "what are we going to do?"

"Well," Doc replies, "since there's no place for either of you here, why don't you both come along with us? We've got plenty of adventures left ahead of us! I've finally figured out how to keep this time travel business under control, so I'm going to open up an Institute of Future Technology, for the advanced study of time."

"An institute?" Marty shouts back.

"Of course! I think I'm going to build it in Florida," Doc continues, becoming lost in his thoughts once again. "The high humidity is good for the flux dispersal, and besides, it might not be bad for my health!"

"By the way," says Marty, "how did you know we'd be right here, I mean, right now?"

"It's very simple. When I suddenly realized I had duplicated both of you in 1985—a thought which occurred to me right in the middle of testing my new flux miniaturizer—I figured I'd better come back here and straighten things out. I knew that the flow of the time continuum was bound to bring the two Martys and the two Jennifers together—it always does—so I took a chance that you would be here at the temporal junction point, which, of course, is the scene of the accident!"

Then, Marty and Jennifer climb aboard the train. Clara is there, along with Einstein, Jules and Verne. Doc fires up the circuits, the train rises in the air, spins around and takes off right toward the audience.

And across the screen come the words:

TO BE CONTINUED.

The trailer that followed—apparently a new tradition in *Back to the Future* films—showed such enticing scenes as Doc and Marty testing a time-traveling suit of armor back in the Middle Ages, and Clara on trial as a witch in Old Salem. We saw Jennifer as Lady Guinevere and Marty as the Yellow Knight! The trailer even left us with a cliffhanger as we saw Doc back in the Dark Ages, being led to the chopping block by Tannen the Terminator!

One More Time

The film was finally over, but it turned out our adventure was only beginning.

As we walked out of the theater, we heard some people remark, "Wow! *Part III* was even better than *Part II*, which won all those Academy Awards."

We asked them what they were talking about.

"Hey, where have you been?" they replied. "*Part II* won an Oscar for best writing, best director, best cinematography—it even won two Best Actor Oscars, not to mention Best Picture!"

"Now, wait a minute," we thought.

Back to the Future II getting all those Oscars? *Any* SF film winning major Academy Awards? Not in *any* dimension we ever heard of!

Suddenly, everything became very clear—we had to be in the wrong dimension.

So, we got back into the DeLorean one more time, carefully set the destination time to the exact moment we left, and crossed our fingers. In a flash, we landed and prayed we had returned to our original dimension.

There would only be one way to know for sure: We would have to wait all over again for *Part III*'s premiere. So, on May 25, 1990, we once again headed for the theater, hoping we wouldn't be disappointed. And boy, were we ever!

Watching this other *Back to the Future III*—the real *Part III*—is what it must have been like to be trapped in evil 1985. Everything was going wrong! It was great to visit with Doc and Marty again, and as a Western, it was terrific fun. But we saw plot holes in this *Part III* big enough to fly a DeLorean though. Heck, big enough to fly Doc's steam train through!

There was only one thing we could figure: The story problems must have been caused by our goofing around with the time continuum—Bob Zemeckis and Bob Gale couldn't *possibly* have made this big a mess without outside interference!

First off, in 1885, when Doc and Marty realized that they couldn't start the DeLorean without gasoline, why didn't they just get the gas from the DeLorean parked in the mine? They both could have been out of there the next morning! Even if Doc had drained the tank, he would have saved the irreplaceable gasoline!

And just what exactly is the story with Marty McFly's ancestors? There's something odd going on here!

Listen: Shamus McFly's wife, Maggie, was a dead ringer for Marty's mother Lorraine. But how could this be? Lorraine was a Baines, *not* a McFly. We know that Shamus and Maggie had a son, named William McFly, who was Marty's great-grandfather. William and his wife must have had a son, who became Marty's grandfather. That son married, and had a

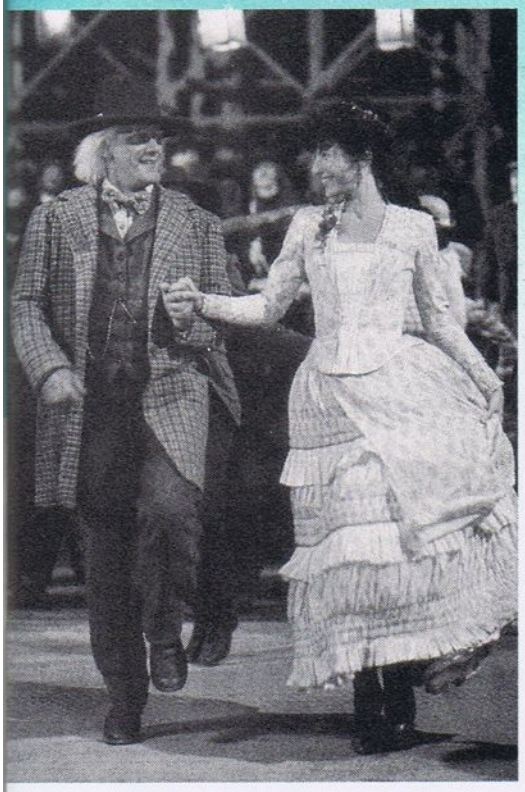
son of his own, who was named George—Marty's father. Now, since Lorraine Baines looks just like Maggie McFly, a granddaughter of Maggie must have married a man named Baines. But that means—*gasp*—Lorraine's grandmother (who married the Baines) and George's grandmother (descended from Maggie) must have been one and the same! George McFly married the granddaughter of his own grandmother!

Ah, small town life.

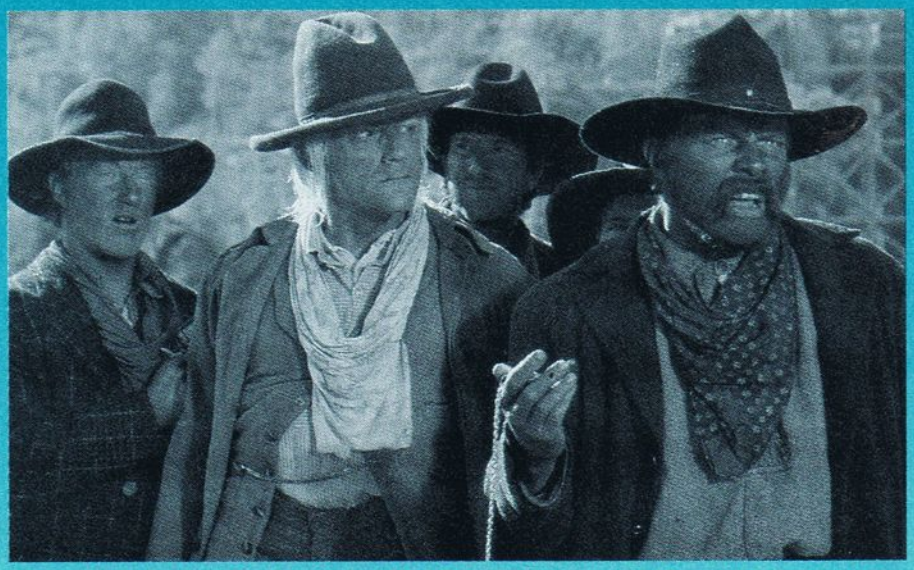
There's more: When Doc and Marty are in 1885, Doc mentions Marty's accident with the Rolls Royce. If Doc already knew about Marty's accident when he took Marty and Jennifer to 2015, why was he wasting their time chasing Marty Jr.? Why not prevent the accident? On the other hand, if Doc heard about the accident for the first time while they were in 2015, why didn't Doc warn Marty about it in the Western Union letter? After all, it's the least he could do, since Marty saved Doc's life with that letter about the Libyan terrorists!

Then, of course, there's the whole incomprehensible business about the train hitting the DeLorean, right there in the middle of Hilldale.

First off, the DeLorean rolls down the tracks past a sign that says *Eastwood Ravine*. But why would it be called Eastwood Ravine? As far as the townspeople knew, Marty had no connection with the ravine. And if they had found out he was the hijacker, *why* would they name their ravine after a thief who stole a locomotive and crashed it off a bridge?



Doc decides to stay in the past and spend his future with Clara Clayton, the one-in-a-googolplex he rescued earlier from a predestined death.



Marty heads back to the future, but Mad Dog catches up with Doc, who decides to rethink his position about staying behind.

One more thing: Take a look at the ground around the sign. Time travel works in strange ways, but it doesn't use shovels—and it sure doesn't leave footprints!

And this: When the diesel engine collided with the car, *how come the train didn't stop?* How come no one in any of the cars waiting at the crossing came over to see what happened? Why didn't anyone come out of their Hilldale houses to see the crashed car? How come the police never came by—even hours later when Marty and Jennifer returned to the scene? Was Hilldale populated by emotionless pod people from nearby Santa Mira?

When Marty got back to 1985 on Sunday morning, he went home and found Biff still waxing his truck. But back in *Part I*, Biff started waxing it on Saturday. If Biff had really spent two days putting on that second coat of wax, he would have rubbed the paint right off the truck!

And how did Doc know that Marty and Jennifer would be standing by the tracks at the exact moment Doc arrived in his flying locomotive? How did he know there wouldn't be another train coming in the opposite direction?

Finally, last but not least, *who* was in the Rolls Royce? Not getting the answer to a question like that is like never finding out the meaning of "*Rosebud*."

"You're just being too picky," you may be thinking. "After all, it's *only* a movie."

Wrong.

It's *not* just a movie—it's *Back to the Future*.

Playing With Time

There was only one thing we could do: We had to enlist Doc's help and try to straighten things out.

We went back to Universal Studios one last time to retrieve our—er, their—DeLorean, only to find they had shipped it to Florida, to the Institute of Future Technology.

Doc's Institute—the one he mentioned in the alternate film!

With hope in our hearts, we set off for Florida, only to find that the Institute hadn't actually been built by Doc. It was just a ride inside Universal's big new amusement park!

Boy, can things get messed up when time dimensions flip back and forth.

Still hopeful, we bought our tickets to the park and made our way to the Institute. As noted on page 42, it's a huge building, all decked out in the same gaudy color scheme we saw in 2015. At first glimpse, it just didn't seem like the kind of building that Doc Brown would build, not after having seen that Jules Verne-style steam train he designed. But then again, he *had* picked out that transparent necktie.

We waited in line for our chance to enter the Institute. Doc would be right there, and surely, *he* would be willing to help us.

As soon as we got inside, Doc appeared on a closed-circuit TV system. We see that he's building whole fleets of his "ultimate scientific achievement"—the new eight-passenger DeLorean time vehicle. (We figure Doc must have time traveled back to 1983 and bought all the left-over DeLoreans at a clearance price before the company went out of business!) "It's fast," Doc says, "it's more energy-efficient, and—it's a convertible!"

Right in the middle of Doc's presentation, Biff Tannen breaks into the Institute. "Jumpin' jigawatts!" Doc yells. It seems one of Doc's teams had been conducting an experiment back in 1955, and Biff must have stowed away. "Hey, I'm not one to pass up a free ride," Biff hollers as he runs past one of the security cameras.

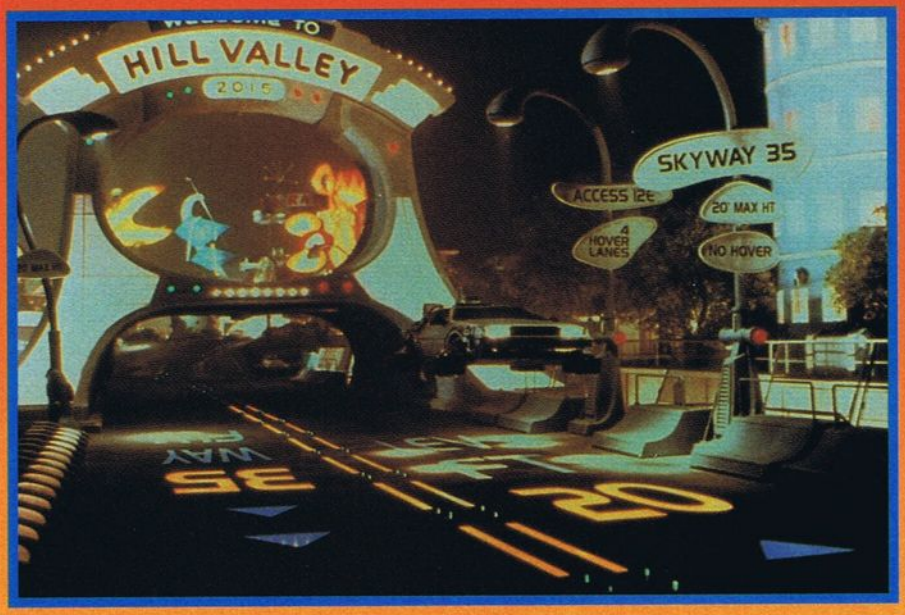
Biff eludes the security guards (atta boy!) then locks up Doc in the lab. Biff is planning to steal a DeLorean and take it out for a joyride—tripping through time! There's no way Doc can free himself, so it's up to us to catch Biff and bring him back.

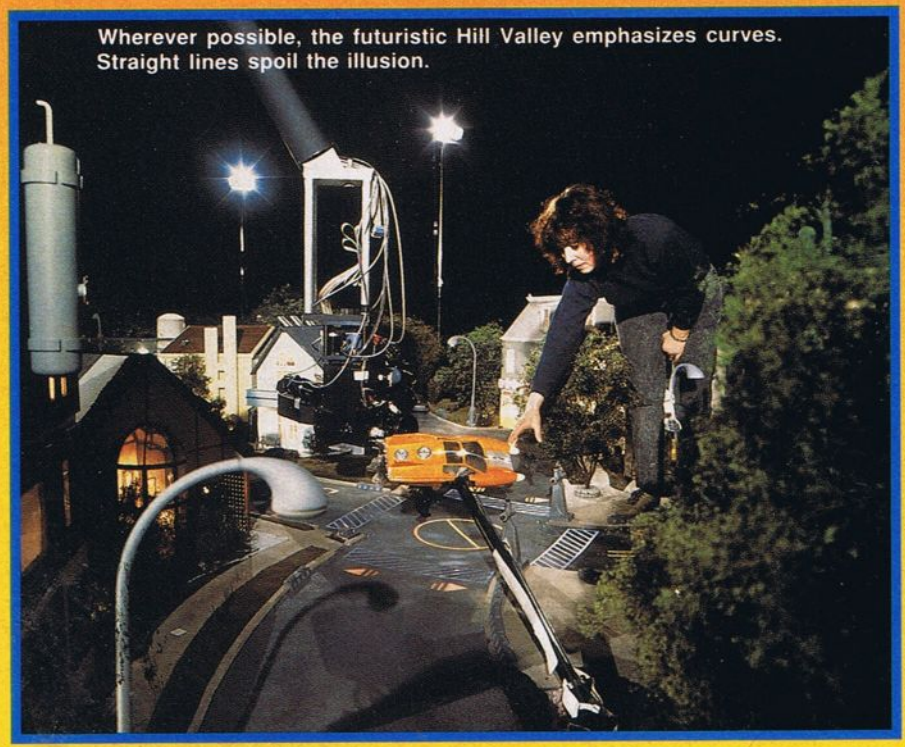
Eight at a time, we're loaded into the convertible DeLoreans, and off we go. "In order to successfully bring Biff back to our time period," Doc tells us over the video

(continued on page 70)

By BILL WILSON

Now, you're in the DeLorean's driver's seat.





Wherever possible, the futuristic Hill Valley emphasizes curves. Straight lines spoil the illusion.

Doc Brown is back, and this time, he's set up shop in Universal Studios Florida. *Back to the Future*—The Ride, the park's newest attraction, is a logical extension of the film trilogy. In fact, the "thrill experience" *could* be interpreted as *Part IV* of the series, since it proposes a natural progression of events based on what we've seen in *Parts I* through *III*.

You're a visitor to the Institute of Future Technology, that bastion of scientific development engineered by Dr. Emmett Brown, and you're about to embark on your maiden time-travel experience. You're scheduled for a quick trip just one day into the future (apparently, that's all first-time volunteers can be expected to handle), but you soon find yourself called upon to transcend the space-time continuum to track down (of course!) Biff Tannen. It seems Biff has stowed away on board one of Doc's new eight-passenger convertible DeLoreans during a test-run to 1955, and now, he's trapped the Doc in his lab and commandeered the car for a joy ride. *You're* the only one who can stop him!

This entire scenario is carefully played out through a series of film sequences presented on monitors throughout the Institute, displayed as you wind yourself through the line and near the "holding bay." Establishing your current place in the *Future* history is a clever introductory sequence, which showcases Doc Brown's finest scientific achievements. (This also alludes to Doc's direct relationship—and shared discoveries—with such historical notables as Thomas Edison and Albert Einstein.) A recap of the flux-capacitor's development and a description of the DeLorean's maiden voyage brings you up to date on the Institute's beginnings and leads you to your initial time-travel instructions...that is, until Biff's intrusion disrupts the proceedings!

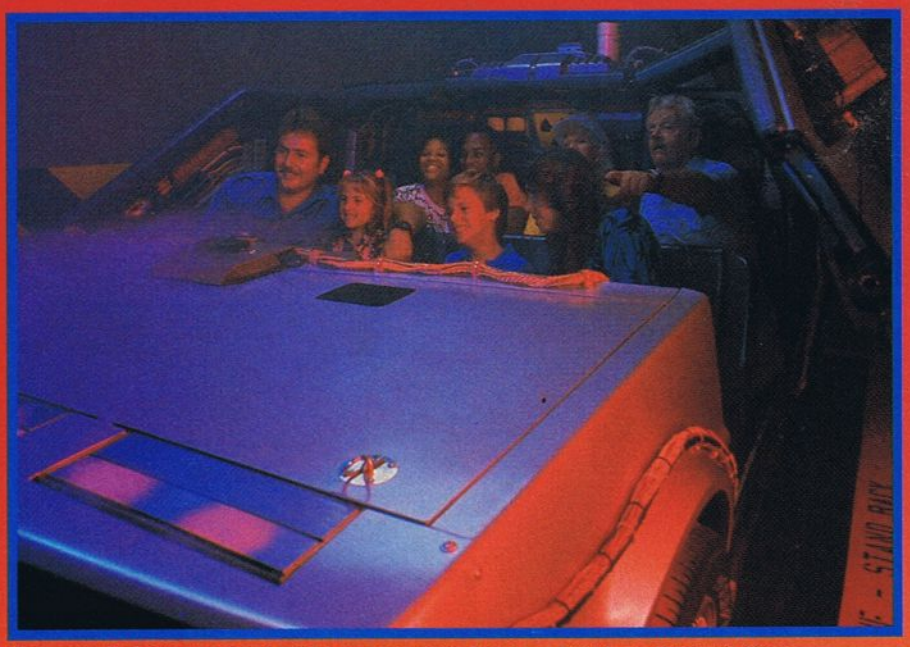
Upon entering the briefing room just prior to your flight, you're bombarded with a flurry of images detailing Biff's raid on the lab. Instructions for his capture are described by no less than Doc Brown him-

self, via monitor. With a newly-perfected remote-control device, Doc can attempt to chase down Biff's car through space and time, but he needs your help to navigate.

After some comical, yet important, safety tips from two surprisingly familiar crash test dummies, the door slides open to reveal your transportation: a "wide-body" DeLorean, capable of seating eight time travelers comfortably—four in front and four in back—complete with onboard monitor for Doc's instructions and the same wide variety of gauges, counters, buttons and switches we've come to expect.

A blast of cold liquid nitrogen fog immediately captures your attention, as the garage door slides open, the vehicle rises up and BOOM—you're out of the Institute and off after Biff through the futuristic streets of Hill Valley! This exhilarating chase is made all the more real through a combination of full peripheral Omnimax film projection onto a seven-story-tall curved screen and a NASA-type flight simulator.

Since the entire scene fills your peripheral area of vision, looking up, down, left or right yields a realistic, three-dimensional image of passing buildings, vehicles and landmarks...including a monumental glacier from the Ice Age and a volcanic lava flow from the dawn of time. Add to this the jolting g-forces of the motion-simulator and the spectacular sight of a tyrannosaurus rex charging at you with jaws wide open, and you'll quickly realize why there were so many warning signs along the entrance to the Institute in the first place. And the careful attention to detail at every turn of the tour through the Institute—from newspaper clippings of Doc's achievements to an actual hoverboard on display—heightens the realism.



The new DeLoreans seat eight passengers for an adventure through time.

Special FX ace Doug Trumbull directed the attraction's four-minute ridefilm.

Trumbull & All Behind-Scenes Photos: Douglas Trumbull/Berkshire Ridefilm

Behind the Wheel

Bob Ward, Vice President of Design and Planning for MCA Recreation Services, explains the ride's concept: "With *Back to the Future*—and with Steven Spielberg's involvement—we wanted to have a thrill ride, but we also wanted a storyline. In the ride attraction business, those are two difficult scenarios to mesh together. Thrill rides generally are fast and quick and create a suspension of gravity, but they might be considered more 'coaster' or 'hard ride' devices. They don't tell stories. When you're zipping along, you're worried about holding your stomach in—not about being subjected to the telling of a story. Yet, sometimes, storytelling—as dramatic as it might be—doesn't often 'capture' you and take you in, allowing you to participate. *Back to the Future* does."

With previous successes such as Kongfrontation behind them, the developers sought to extend the relationship between a film sequence and reality. "There was no question that a simulator base would at least allow you some type of consistent relationship to another medium," Ward continues. "Star Tours, for example, is truly a leading edge simulator attraction. It carries roughly 40 guests on a starship that travels through the whole scenario, and it works very, very well. But you're basically looking at a flat screen through a part of the ship, and due to the size of the motion base, there are distinctly different experiences for the guests depending upon

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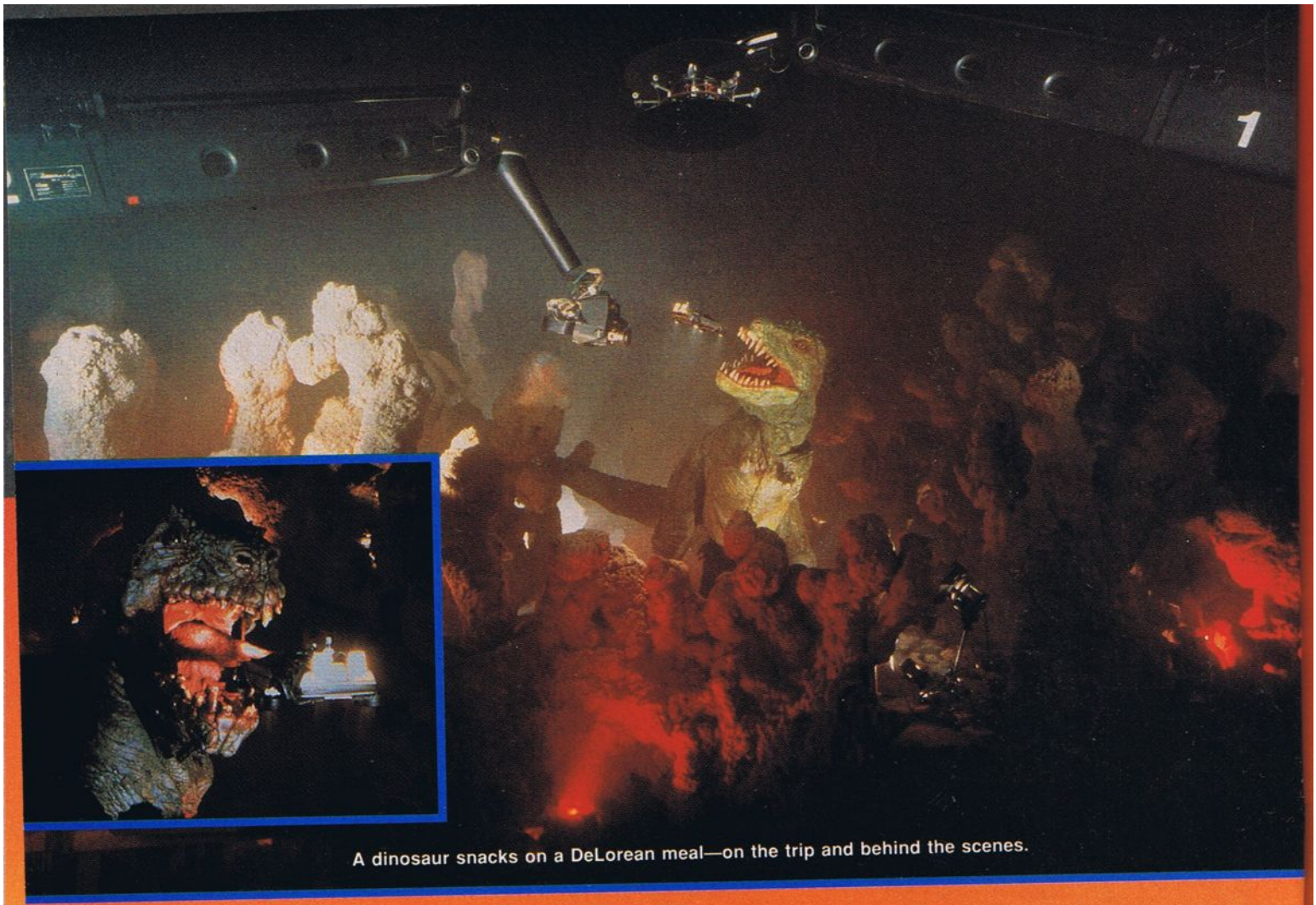
BILL WILSON, Florida-based freelancer, explored *Swamp Thing* in COMICS SCENE #16.



A dinosaur snacks on a DeLorean meal—on the trip and behind the scenes.

whether you're seated near center or toward the edge.

"What happens when you take that big thing and you make it intimate, say for eight people? You know the seating configuration in a car; if you're all near the pivot point, you'll all get equally the same ride," Ward explains. "Then, if you take this flat screen and bend it around so you're not just looking forward, but left, right and above your head...you're surrounded! Suddenly, you're chasing down Biff, who's just moving all over the place. You *believe* you're flying, and you *believe* the cars are interacting, because they're doing things they couldn't otherwise do."

With 12 vehicles in each of two domes and every one of them having to be operated by a slightly different program because each has its own relationship to the image on screen, the technical demands are great. "If you can imagine the dynamics of having these vehicles all in action, sometimes simultaneously," Ward elaborates, "the technology just in the construction of the building itself to withstand that movement—you can feel the rumbling—is phenomenal."

Among the many talented individuals who helped bring the project together, Ward notes, were "Steven Dane, the art director on the project. Steve Marble is the overall Project Manager, and his experience with the IMAX film process, in addition to his tenacity, determination and unfailing and untiring dedication to the project, really has buoyed it through some heavy ups and downs. Terry Winnick, the producer, brought a lot of strengths to bear that general show development doesn't often have.

"Guys like Steven Dane, Steve Marble and a number of other folks got into the spirit of this idea's meticulous detail, execution and implementation. That's how the Institute of Future Technology was born. The folks who made it *believe* it, and that really shows."

Revving Up

Project Manager Steve Marble stresses the technical achievement in combining audio, visual and sensory FX for a total experience. "The visual wraps around your eyes, stereo sound surrounds you, and the blast of nitrogen fog completes the effect. Physiologically, people experience the ride in different ways. Although there's no temperature rise during the lava flow, for example, all the sensory cues are present to permit some people to actually feel the heat! We've created an environment which is as close as possible to virtual reality.

"What we have here is absolute state-of-the-art special FX technology. The cameras were specially built for the project. The models were intricately detailed because of the scale of accuracy required. And because the Omnimax process involves a complete 180-degree image, everything was shot with source lighting because there was no way to hide the effects people out of camera range. What you see is basically everything that was there." The film portion of the ride alone required the work of some 250 artists and craftsmen, combining their talents on a four-minute film which had a budget in league with a full-length motion picture.

Circling the eight-story structure's ramps toward the upper levels of the building, Marble darts into the projection room. His voice is nearly drowned out by the roar of the "Rolling Loop Projector," created specifically by Omnimax to convey the film horizontally through the projector on a cushion of air. This was necessary because the large expanse of screen required a film frame eight times larger than conventional 35mm film, and that size film couldn't be moved through conventional projection equipment. "The film stock itself is made of a highly-durable mylar," Marble explains, "so strong, in fact, that it's capable of tearing up the sprockets in a regular projector. It's almost strong enough to tow a car!"

Marble then races through the passages to his next destination: The audio room. A true audiophile's delight, it is a computer-controlled chamber filled to the brim with banks of whirring laserdisc players, tuners, equalizers and monitors. "The laserdiscs handle all 11 audio tracks, plus all the video for the onboard monitors,"

Marble explains. "The control room monitors all 12 vehicles in the theater on this side. A duplicate room on the other side of the building controls the second theater. And since everything is completely computer-controlled and manually monitored, the least little problem will return the trouble vehicle safely back to the garage without disrupting the activity of the other cars. Of course, that all depends upon the problem's severity."

Slipping into another nondescript doorway, Marble advises caution at the footing, never alluding to where in this blackness he will emerge. Then, as if by magic, a roar is heard, a huge seven-story tall image fills a hemispheric screen before him, and four familiar-looking cars rise up from the floor to his left. And there he lies, stretched out on his stomach at the edge of at least a five-story drop, gazing out into the flashing images and down on eight DeLoreans filled with people on the ride of their lives.

When the clock strikes, it's back to the future (and the past) again.

Shifting Gears

At the heart of the *Back to the Future* experience is the "ridefilm" itself, directed by renowned special FX creator Doug Trumbull. In fact, it was Trumbull who invented the first "movie ride" back in 1976, combining a flight simulator with a 35mm film. Tour of the Universe, an attraction designed for Interactive Entertainment in Toronto, Canada, was the precursor to modern-day movie rides like Disney's Star Tours and Body Wars, and its technology has culminated in the development of the *Future* ride.

Trumbull's mandate from Universal was to combine live-action footage, miniature sets and a flight simulator base to produce "the ultimate ride." His Berkshire Motion Picture Corporation added a Berkshire Ridefilm affiliate specifically to serve the visitor attraction industry, and it was this project which would give it wings. With his executive producer and business partner Nick Kelley, Trumbull assembled a team of experts, which included illustrator Ralph (*Star Wars*) McQuarrie (STARLOG #75), Obie and Tony Award-winning designer Robert Taylor and special FX supervisor Hirotsugu Aoki.

Recognizing the inherent problem of compressing time without disrupting point-of-view, Trumbull combined "time transitions" and the simulator's motion to create a kinetic, dream-like experience. Deciding to photograph the action at f/22 using a 30mm Zeiss "fish-eye" lens guar-

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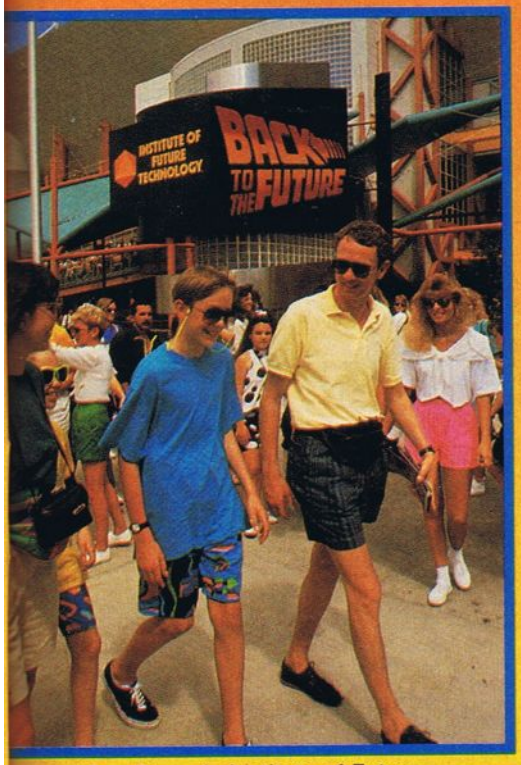
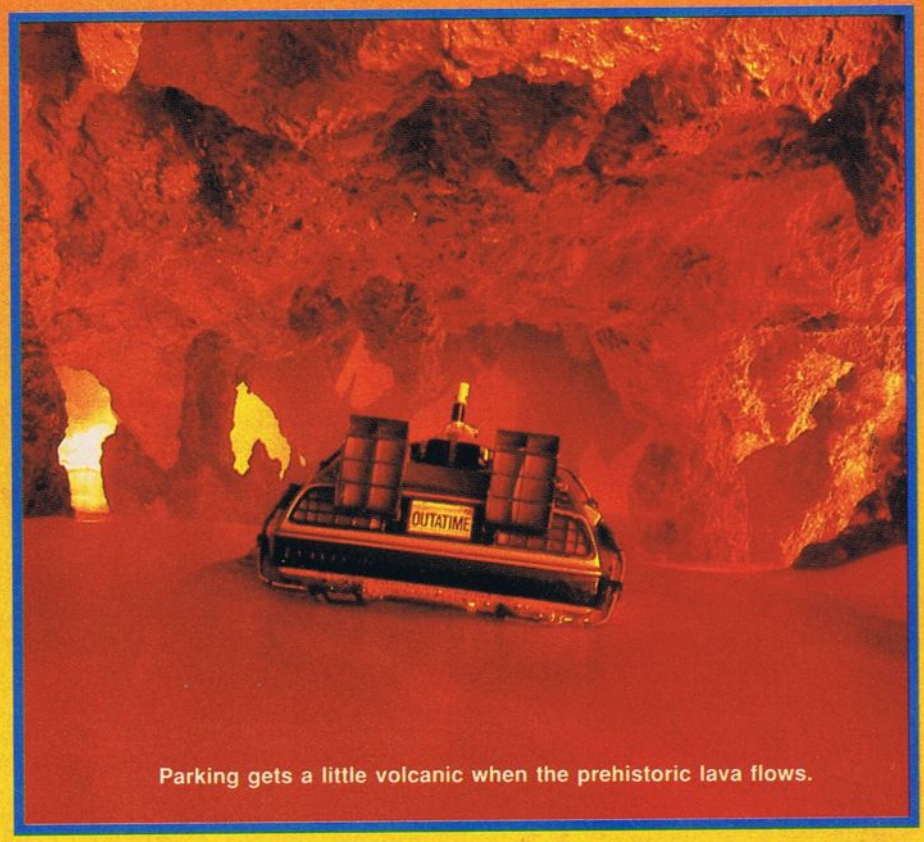


Doc Brown's Institute of Future Technology opens for experimentation daily at Universal Studios Florida.



Parking gets a little volcanic when the prehistoric lava flows.