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STOCK CAR RACING

# STOCK CAR



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## PROFILES

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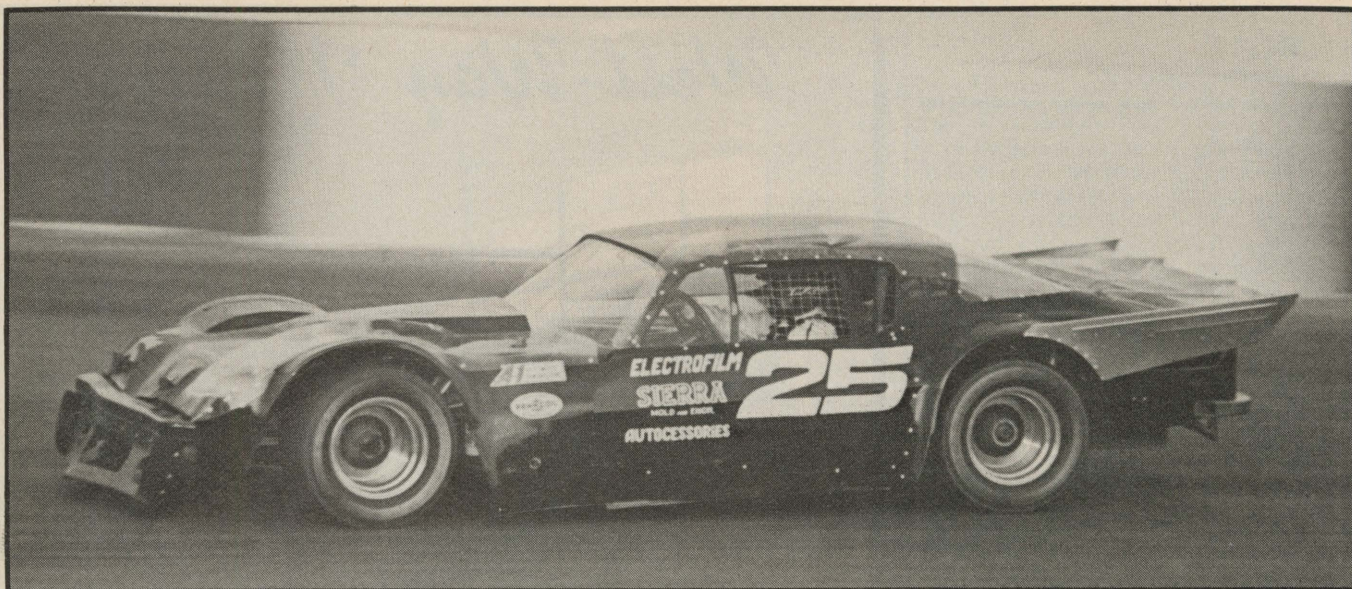
### BUDDY PARROTT:

MASTER MECHANICAL GIANT

### JUNIOR HANLEY:

CANADA'S BEST





# The story of DAN PRESS

By Larry Warren

**E**VERY TIME a race car rolls onto the track there are two interesting stories to tell. One is the story of the driver and the other the story of the car.

This is particularly true of Dan Press of Valencia, Cal. Press is considered by many to be one of the most innovative driver/mechanics on the West coast. His 9 years of racing are literally a history of the development of a stock car racing technology.

Press started racing in 1973 in a Chevelle which characteristically, he built himself. He did quite well from the start, winning Rookie of the Year in his first season and finishing 3rd in points after winning 7 main events in his second.

In 1976, Press built a Camaro and his career as an experimenter began in earnest. He built a reverse rotation engine to test the theory that the motor's torque reaction would help in the turns. This necessitated among other things, putting a Halibrand quick change on the back of the transmission so that the drive shaft would turn in the proper direction.

The car ran well enough although Press finally determined that any gain from the reverse rotation was cancelled out by another of his innovations: the use of a Powerglide flex plate in place of a clutch. A conventional flywheel/clutch would have allowed the reverse torque reaction to help in the turn but the 5 pound rotating weight of the flex plate wouldn't.

The reverse motor was eventually abandoned but the success of the flex plate led Press to being one of the first to use a Powerglide transmission for short track racing. This was the first of many innovations which Press and his crew chief Conrad Brockers were to develop.

Perhaps the most interesting device they came up with allowed the car to have 2 chassis settings: one for entering a turn and another for

accelerating out of it. An accelerometer would sense when the car was through the turn and activate a power steering pump which pre-loaded the sway bar for optimum acceleration.

Brockers works for an aerospace firm and his contact with engineers there plus his own natural inquisitiveness have led to some interesting experiments. Among these were doing a computer analysis of Press's car's suspension and the use of aircraft anti skid sensors in the brake system.

The computer analysis did provide some valuable information but the anti skid sensors, designed for large aircraft, were too heavy for race car use. At one point Brockers installed digital readout load cells in the car's weight jacks so that he could tell at a glance what each corner weighed.

The two men who will go to these lengths, Dan Press and Conrad Brockers, are obviously tremendously competitive. "We're not losers," Brockers says. "If we didn't think we had a good chance of winning we would n't show up."

"We don't want to just run well, we want to annihilate the opposition." "We want to win by 2 or 3 laps," is the way Dan Press puts it.

"Dan is so competitive that he can't get involved in any game or sport just for the fun of it," says his wife Bonnie. "When he took up bowling he wouldn't let up even after he was at the top of the league. He gets so involved with the race car that if it isn't running right he actually doesn't feel well. If our daughter sees him home early from work she says 'Something must be wrong with the car, daddy's home.'"

This dedication has paid off on the race track with at one point Press setting fast time 36 out of 38 tries. In 1978 he won 14 of 23 races on his way to the Saugus championship.

Even though many of their ideas don't work out, Press and Brockers know the effort they put out pays off in the long run. "We feel that



(top) Dan's 1981, complete with roof fins. (Photo-Rob Parker) (above) Dan Press, one tough cookie (Rob Parker).

winning requires these things," Brockers says. "Money, effort and knowledge. Sometimes you can get by with any two of these but Dan and I have found that if you can't have all these, effort and knowledge can make up for a lot."

Many of the ideas which the two have pioneered are now widely used by other racers, such as the automatic transmission. "Unfortunately, we're so busy with the race car we never get a chance to market the stuff we come up with, like the tire valves," Dan says.

Press claims to have developed the now popular tire pressure relief valves because even a short race generated enough heat in a tire to increase its pressure 7 PSI and its diameter by 3/4 of an inch, upsetting handling. He found a commercially available adjustable pressure relief valve which could be threaded into the wheel and preset to the proper pressure so it would bleed of the pressure buildup.

The valves worked perfectly, with the tires maintaining the same pressure and bite throughout the race.

Dan's sponsors have been very helpful both financially and with technology. Sierra Mold and Engineering has an extensive machine shop for making injection molds as well as an occasional exotic race car part Electrofilm, Dan's employer, manufactures helmets, aerospace lubricants, water bed and aircraft heaters. He has found a way to put most of these to good use in racing.

STOCK CAR RACING

As an example, Dan modified some aircraft heaters into wrap around tire heaters. "It's a lot easier to do two good laps in qualifying if the tires are already heated up to 220 degrees," he says.

This use of sponsor's resources plus hard work and ingenuity has allowed Press to go faster while spending less money than the competition. Wife/bookkeeper Bonnie says: "Our budget is about one third less than what several other of the top teams in this area are spending."

While a major center for the racing equipment industry, California has comparatively few race tracks. "This puts us at a real disadvantage because the guys in the East learn a whole lot more about what they're doing racing five nights a week," Dan says.

"Dave Watson, Mike Miller, Larry Detjens and Larry Phillips have always helped us in every way when they come out here. They don't know the meaning of keeping secrets. They'll tell you anything you want to know."

By combining the mid westerner's hard earned knowledge with their own constant experimentation, Press and Brockers have always managed to stay a step or two ahead of the competition. Dan was the first into the 16 second and 15 second brackets at Saugus and he perennially sets fast time.

Unfortunately he has often been in the DNF column, partly due to his innovation. His friend, 1979 Saugus champion Tru Cheek says: "I bet it has cost Dan at least \$100,000 in prize money he didn't make over the years because he was always trying something new."

At one point Dan strung all of the parts which had failed while he was leading onto a wire in his garage. The wire was soon filled and he stopped the practice, "because it was too depressing."

"We seem to go in cycles, with one year of experimenting and DNFs followed by a good one where we have a real advantage."

Interestingly for such an innovator, Dan has been very successful using chassis built by someone else. "I've found that if you're going to learn anything you've got try out only one thing at a time. If I was building my own chassis along with everything else I wouldn't have any reference point."

The latest car features a chassis built by successful local builder Dave Jackson and incorporates several of Dan's ideas. It was built to Saugus' rules which were liberalized in response to Press's success under the older, more restrictive ones. "The way the chief steward put it was, they were going to take our unfair advantage away," Dan says.

The car weighed 1900 lbs dry and was only 39" high. "We may have gone to far with that car," Brockers says. "it was so low that Dan kept getting into wrecks because the other guys couldn't see him coming. So we raised it."

Also, it was difficult to ballast the car up to the 2800 lb. Saugus minimum and keep everything in balance. "We ended up with 65% of the weight on the left side at first which was too much."

The car's low weight was achieved without resorting to such ploys as thin wall tubing. "The most you can save that way is 50 lbs. or so and you end up sacrificing safety," Brockers says. The weight reduction was primarily the result of attention to detail.

"We use only two instruments in the car, the lightest brackets that will do the job, have as little overhang as possible, use rack and pinion steering, it all adds up," Dan says. They put all the excess weight items removed from the car in a barrel, which was soon filled.

JULY 1981

It is ironic that the major conclusion that Dan Press has reached after years of exhaustive experimentation is that "the simpler the car is, the better. We learned the hard way that some of our trick stuff wasn't worth the complication and now we stick to basics."

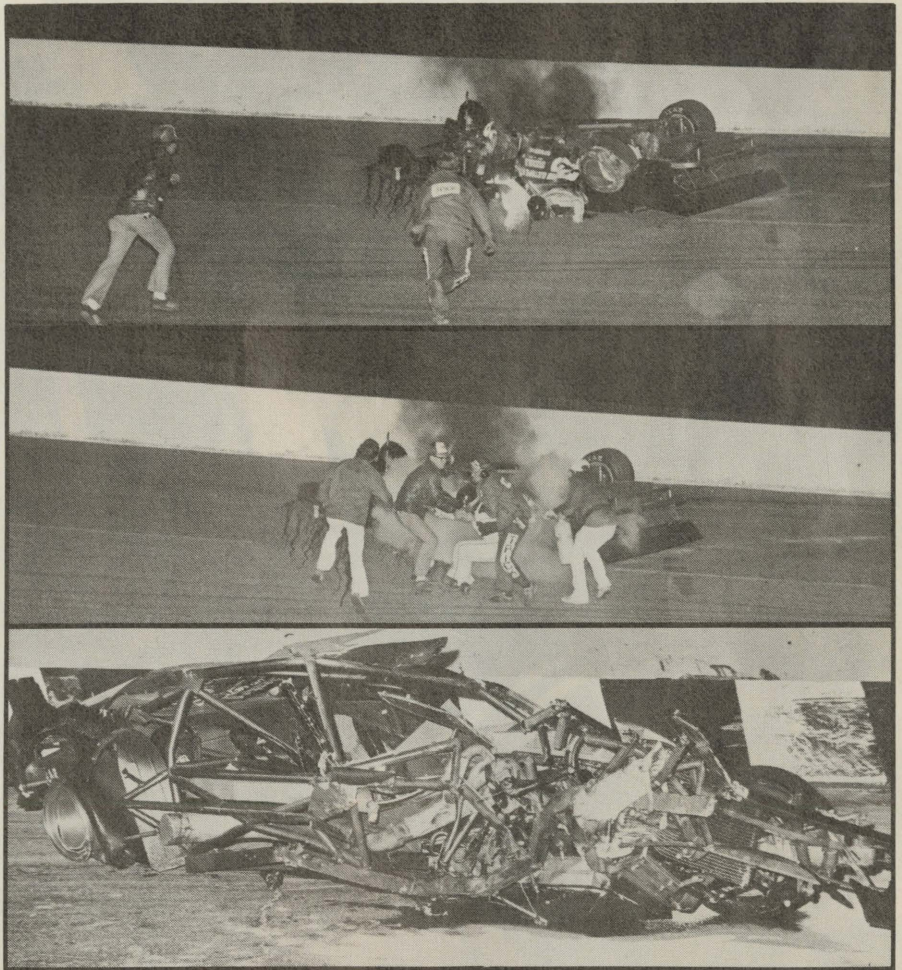
The big jump in technology of which Dan has been such a part has raised the overall level (and cost) of stock car racing to new heights. "We don't have the big advantage we used to. Everyone has caught up to us," he says, "The days of the Easterners coming out to the West coast and running over us with superior cars are over too."

With all of the equipment now available it is much easier for someone with a big enough bank account to go really fast. Fortunately the knowledge and effort which have served Press

Aerodynamics is one area which proved mystifying even to an innovator like Press. "I didn't think it was important on a short track where you're only going 100 mph or so but I was wrong. The first time I tried a full length belly pan and ground effects skirts on the car it put me into the wall because they didn't extend back far enough."

Since Saugus is completely flat it is extremely hard on brakes. "We tried just about everything to keep the brakes cool including spraying a freon and water solution on them. Now we use Wilwood Grand National brakes and we haven't had any trouble. I've found that everything is so inter-related that if you're having brake problems it's often a sign that something isn't right with the chassis."

"I've tried just about everything you can think



(top) Press begins to emerge from his car following a 1981 wreck. The car was brand new, replacing the one he wrecked in 1980 (shown in bottom photo) when he hit the wall wide open with the Nitrous button on.

and Brockers so well are still important.

No one understands better than Dan Press the intense interaction between chassis, engine, tires, brakes and all the other factors involved in making a car go fast today. His observations should be enlightening to anyone interested in short track racing.

"The cars today are so complicated that you need a good crew to be competitive, even for a weekly show. We have a smaller crew than most. There's just me, Conrad, Bonnie and maybe a helper."

After winning the championship, Dan dynoed his engine and found that it was some 90 HP down from the competition. "That showed how good our chassis was but right then I stopped building my own engines and went to Mehalek Power Systems. One guy just can't do everything on a car anymore."

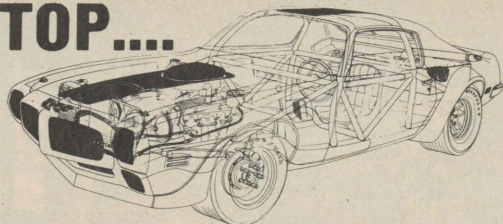
of and some you can't when it comes to chassis and I've come to the conclusion it's best to keep it simple. At one point I even went back to Chevy truck arms at the rear just because they were a known quantity. I'm glad we tried so many different things because now we know that works *and why*."

Dan's current car uses coil over suspension which he likes for the usual reasons of simplicity and reduced unsprung weight. "They're particularly nice on the front end because there isn't much room up there. I'd say that on the rear regular springs would be just fine because space isn't a problem and coil overs are expensive."

Press uses a rack and pinion steering which he builds from Datsun parts. "Rack and pinion is lighter and more direct and I like its simplicity."

Continued on page 86

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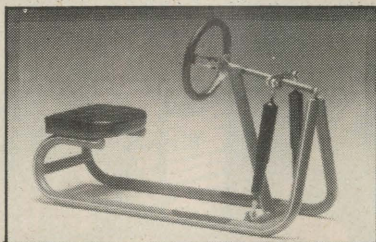
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## PRESS

Continued from page 49

Dan doesn't overlook the importance of psychology in racing. "When we first started running the backwards motor we always kept it covered up," he says. "When somebody would ask the guys on the crew about it they would just tell them, 'We don't know anything. We just wash the car and play catch with the Frisbee.'"

When he first started using the flex plate in place of a clutch it was engaged with an air cylinder device which made for rather jerky starts. "A guy asked me about it and I told him my clutch was shot. I must have convinced him because during the race I lapped him about 5 times and afterwards he told me he worried that I wouldn't finish because every time I went by he smelled burning clutch lining."

Dan agrees in principle with the trend toward track tire rules, an unusual attitude for a front runner with the best in equipment. "With harder tires you wouldn't need big, expensive motors because you couldn't get the power down to the ground. It would be cheaper and driving and chassis setup ability would be more important," he says.

"The way things are now the guy who is willing to spend the most dictates what the rest of us have to do. The crowd doesn't care how fast we're going. They just want to see a good race. We're going way too fast on a flat third mile track that wasn't designed for these sophisticated cars and somebody is going to get hurt."

These words were unfortunately prophetic because a few days later Dan's throttle stuck open with the nitrous bottle (legal at Saugus) full on. The car hit the wall at over 120 mph, spun around 180 degrees still at full throttle and hit again.

It took half an hour to cut Dan out of the car and his left leg, hard on the brake, was shattered. The crash totally destroyed the car and cost him the championship which he was leading at the time. A new car is under construction and no one who knows Dan Press has any doubt that he and the car will be as fast as ever.

While doing fiberglass work on his race car in preparation for the 1976 season, Dan's eyes became inflamed and eventually infected. He got a tetanus shot which caused a severe allergic reaction and left him paralyzed from the waist down. "The doctors told me that it was probably permanent and I told them that I was going racing on April 1st (the first race of the season)," he remembers. Needless to say Dan raced on April 1st although he still suffers some residual effects of the paralysis to this day.

The current injury, complicated by an infection, hasn't proved to be a deterrent to Dan Press making the first race of the season. It did, however, force him back onto the crutches he thought he was rid of.

Anyone who has seen Dan Press's black #25 Camaro in action knows the true meaning of phrase "hooked up." The car goes so fast so effortlessly that it belies the work and ability involved. Dan Press works as hard as anyone in racing to make it look easy.

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