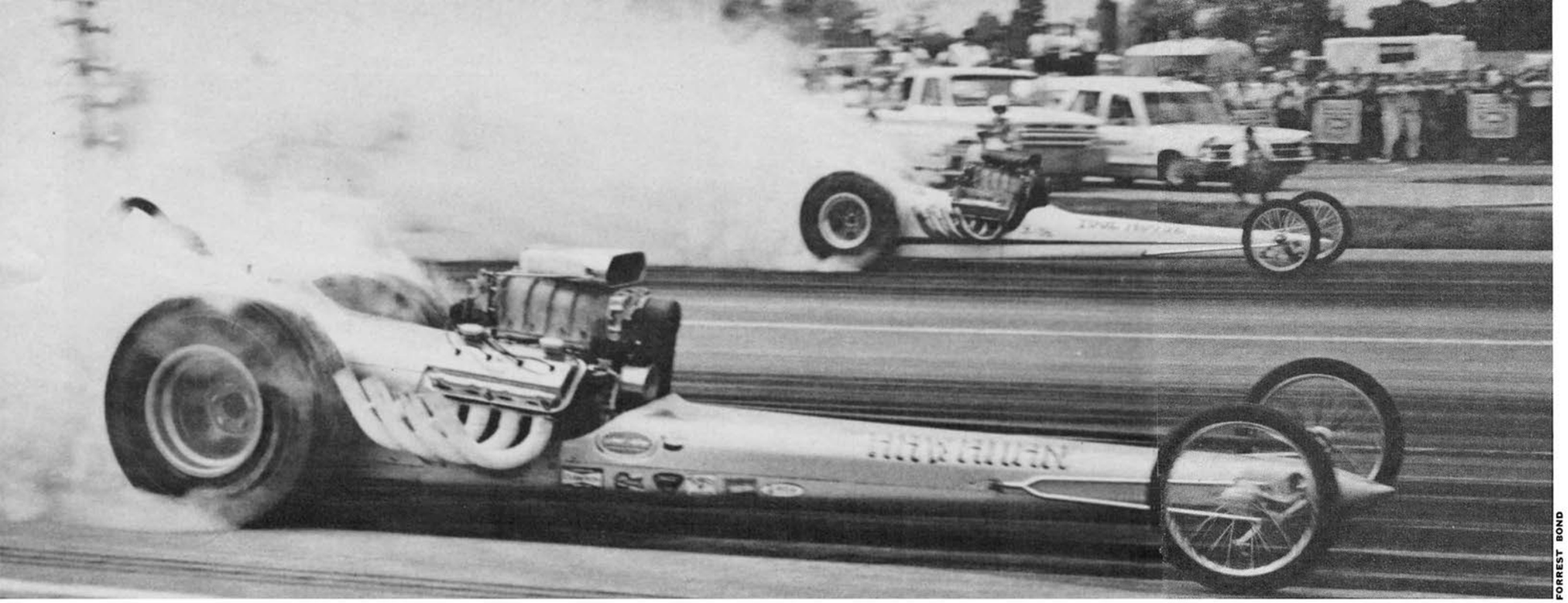


FORREST BOND

UNPRECEDENTED SECOND straight Top Eliminator title was won by Roland Leong's blown fuel dragster "Hawaiian." Driver Mike Snively turned fastest times, 7.321 sec. e.t. and 215.83 mph in final runoff with Danny Ongais.

INSIDE THE SUMMERNATIONALS

BY ROGER HUNTINGTON

HOW MUCH quicker and faster can the cars go at the NHRA National Championship drags in Indianapolis? The 1966 performance boost was nothing short of astonishing. Low e.t. for the meet dropped from 7.50 to 7.31 sec. Top trap speed for AA Fuel Dragsters jumped from 210 to 218 mph! This year's 32 qualifiers for top fuel eliminator recorded e.t.s under 7.61 sec. More than improved driving skill is required to produce these times and speeds. Many significant technical developments, including improved engine horsepower and traction, were the secrets of competitive success for the fuel dragsters.

The latest engine performance trick is use of hydrazine fuel. Hydrazine is a potent nitrogen/hydrogen compound that has been widely used as a rocket fuel, with liquid oxygen as the oxydizer. Only 1–3% of this compound added to a mixture of alcohol and nitromethane is said to deliver 10–15% more bhp than straight nitromethane. Dean Hill, NHRA's fuel tester, says the hydrazine is an "exciter" for the nitromethane. The additive produces higher combustion pressures and permits use of richer mixtures without loading up of cylinders and related misfiring. The only problem is that hydrazine/nitromethane fuel mixtures become explosive after an hour of reaction time. Batches of fuel must be mixed immediately before runs, then the excess discarded immediately afterward for complete safety. However, Dean is afraid of the little guy who can't afford to throw away fuel that costs up to $10 a gallon or who doesn't know it becomes explosive. The NHRA intends to publicize instructions for the proper use of hydrazine fuel (outlawed by AHRA).

When will the competitors try 30–40% hydrazine mixtures? NHRA would do well to test a broad range of mixture strengths.

The usual annual improvement in tire performance also was made this year. Marvin Rifchin, with his little M&H Tire Co., somehow has managed to keep abreast of giant Goodyear in technical development. The two companies shared an almost 50–50 split of the top cars this year. (Firestone has chosen not to enter the drag competition, but bends its efforts toward other forms of racing.) The endless search continues for new rubber compounds that will deliver additional initial bite off the line, but won't "juice" or start to melt and lose bite after tirespin heats the rubber. Softer compounds, such as those used for stock car racing, would produce more "sticky" traction initially, but turn to something like grease under hard tirespin with a 1200-bhp engine.

Attempts to put more area of rubber on the track have swung from wider treads to longer "footprints" through use of lower inflation pressures. This called for changes in cord angle and casing construction to prevent excessive distortion and instability above 200 mph. The latest dragster slicks use pressures as low as 12–14 psi, with 6-ply casings on 11-in. wide rims. Another benefit of the lower inflation pressure is that it makes the tire a more efficient chassis spring. With no rear suspension on the dragsters, the softer rear tires help to keep the after end from bouncing unduly at high speeds, thus delivering more power to the ground.

M&H introduced a new low-profile tire that is about 0.5 in. wider and 1.5 in. smaller in diameter than the earlier 11.00-16 size, now designated 11.20-16. The idea is to produce a more stable casing with very low pressures, for more footprint at low speeds and less "slingout" or bowing of the center of the tread under centrifugal force at 200 mph. Slingout obviously reduces the contact area at high speeds and reduces traction at the top end. Connie Kalitta turned an e.t. of 7.39 sec. on the initial runs with the prototype set of tires.

THE FUNNYCARS put on a wild show. NHRA officials recently have established an Experimental Stock (XS) division for these cars to put them into official competition and to regulate their design for safety. The funnycars, however, stole the show. The latest ones are little more than all-out dragster chassis and engines, with light fiberglass replicas of passenger car bodies on top. They use tubular steel space frames, dragster-type tubular front axles and extremely strong rear axles hung on rudimentary torsion bars, coils or leaf springs. Engines are moved rearward as far as possible, with the driver often sitting in the rear seat. The wheels are relocated forward to put 60–65% of total car weight on the rear wheels for optimum traction and weight transfer effect. (The radical wheel location engendered the term "funnycars.") The majority of these cars use automatic transmissions, mainly because there's no time to declutch and change gears in a car that turns e.t.s in the 8s at more than 160 mph. Things happen with great rapidity with 1300 bhp in tiny cars that weigh little over 2000 lb. Components become unstuck.

Certainly the most impressive funnycar run of the meeting was Eddie Schartman's trophy try in S/XS, when he defeated Don Nicholson. The fiberglass Comet coupe turned a fantastic e.t. of 8.28, at trap speed of 174.41 mph, without a supercharger, but on hydrazine fuel. None of the blown funnycars was able to equal this performance.

One of the exciting things about funnycars is the way they come out of the hole. Words can't express this sight. They leap out so much more quickly than fuel dragsters that there is no comparison. A Dart funnycar won the C/Fuel Dragster class. On the trophy run, the Dart hole shot the dragster at least five car lengths off the line, and had gained 15 car lengths at the finish. If fuel dragsters could get off the line as quickly as some of the funnycars, they might turn e.t.s in the 6-sec. bracket.

What is missing in the science of dragster traction? Theoretically dragsters have all the advantages: 75–80% of their weight on the rear wheels, 1 bhp/lb. of car weight and a vast area of rubber on the track in relation to car weight. Dragsters should get away more quickly, but it appears that all their traction goes up in smoke. The funnycars don't leave a wisp of tire smoke—they just leap away like a rocket, as though their tires were glued to the track. In a way they are, because the lack of tirespin allows them to use much stickier, softer tread compounds and 4-ply "ripple" tire casings at 8 psi for that much greater initial bite. The funnycars come off the line with the engines at idle speed and let the torque converter and gearbox do the pulling. If a dragster driver tried this, his front end would go straight up in the air. He is forced to leave the line with his engine turning 6000 rpm. The rear tires break loose immediately. What if someone builds a dragster with a 40/60 weight distribution—one that wouldn't do wheelstands—then put a transmission in it to allow the engine to pull off the line from idle speed? With no smoke, 1 bhp/lb. of car weight, and all that rubber area, could the car turn an e.t. in the 6s? Somebody will answer these questions.

GAS COUPE competition always is a crowd pleaser. These full-bodied cars, with interior upholstery and street equipment, have all-out modified engines and run on pump gasoline. They're not as fast as the funnycars because of minimum limits on engine setback and car weight per cubic inch of piston displacement, but they always put on a great show. The Ford Anglias and Prefects, vintage 1948, with 92-in. wheelbase, gradually are taking over from the 100-in. pre-war Willys coupes. The Willyses had it their own way for several years, but the shorter wheelbase cars, with light engines in front, get better front-to-rear weight transfer effect and quicker bite off the line. The smaller bodies offer less wind resistance at the top end. Gas Coupe competitors have done a lot of shrewd engineering to perform as they do within the class regulations. "Ohio George" Montgomery, with a new sohc Ford 427 blown engine in his '33 Willys coupe, won the AA/G class with a 9.58 e.t. at 153.58 mph.

The major technical trend among Gas Coupes is a rapid switch from the old 4-speed Hydra-Matic transmission to the Chrysler 3-speed TorqueFlite. The majority of top competitors in the A and B blown cars now use the Chrysler unit, whereas a year ago they all used the GMs. Advantages of the TorqueFlite are the closer gear ratios and smoother shifting, so the car doesn't break loose and fishtail or wheelstand on the shifts. The 4-speed Hydra-Matic has a wide ratio drop between first and second, and on the 2-3 shift the drive goes from partial fluid to straight mechanical. These

The Performance Boost Was Astonishing!

WHO WON WHAT

Class	Driver	Engine/Car	e.t.	speed
Top Fuel Eliminator	Mike Snively	Chrysler	7.32	215.82
Top Gas Eliminator	Jim Minnick	Dodge	8.32	186.72
Competition Eliminator	Gene Snow	Dodge	9.04	153.06
Super Eliminator	Jim Mehalik	Chevrolet	9.23	154.63
Street Eliminator	Joe Lunati	Chevrolet	10.24	133.53
Top Stock Eliminator	Jere Stahl	Plymouth	11.73	119.68
Jr. Stock Eliminator	Dave Kempton	Plymouth	13.08	108.17
AA/FD	Mike Snively	Chrysler	13.82	49.34
AA/GD	John Reed	Chrysler	9.45	123.79
A/FX	Ed Russell	Ford	11.99	117.64
A/XS	Bill Lawton	Mustang	8.66	164.53
S/XS	Ed Schartman	Comet	8.28	174.41
S/S	Ed Miller	Corvette	12.12	116.88
S/SA	Joe Smith	Plymouth	11.38	126.40
A/S	Arlin Vanke	Plymouth	12.43	112.35
A/SA	Clayton Wright	Plymouth	11.91	118.11

SUMMERNATIONALS

shifts are very harsh when the box has been reworked for competition. A light, high-powered car may cut any sort of a caper on sudden jerks like this. The TorqueFlite has closer ratios, with less of an rpm drop between gears, plus the cushioning effect of the torque converter in all the gears. It has proved to be a nearly ideal automatic transmission for high-performance cars. Many more of these units will be seen in drag racing from this point forward.

Speaking of automatics, Ford's new C6 3-speed torque converter, used in the company's heavier cars, has proved very reliable in Comet and Mustang funnycars, when given a little judicious strengthening by experts. Why doesn't Ford release this transmission as an option with high-performance engines in standard passenger cars? Ford's 425-bhp 427 engine still can't be ordered with an automatic—at a time when Dodge and Plymouth salesmen are encouraging buyers of 425-bhp Street Hemi engines to choose the more reliable TorqueFlite. Ford had best catch up.

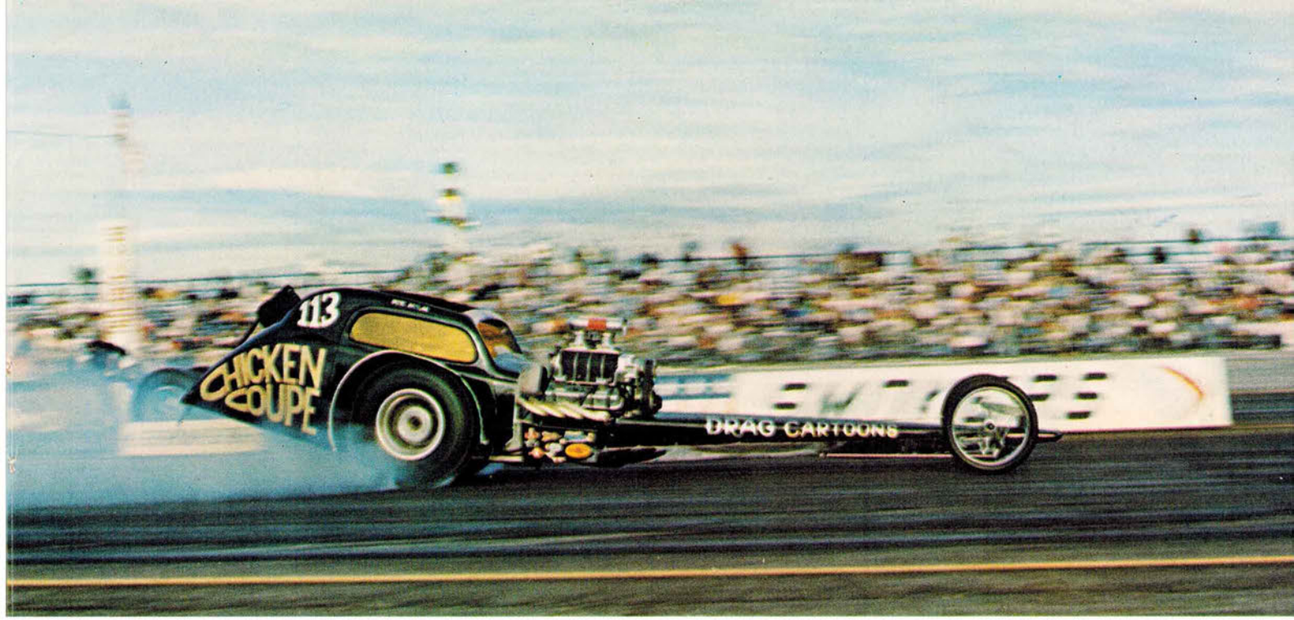
THERE ALWAYS is crowd interest in the top stock car classes at the Summernationals. The 1966 Super/Stock run-offs weren't any great shakes because none of the factories built cars for this class this year. Dodge and Plymouth cars of 1965 vintage were dominant. The anticipated battle in A/Stock between the Chrysler Street Hemis and the new Ford Fairlanes with high-performance 427 engines failed to come off. NHRA officials put the 427 Fairlanes in the A/FX class because of a rule technicality. Class rules clearly state that fiberglass or aluminum body panels are not permitted on late models unless they are regular production parts on a minimum of 500 production units. The 427 Fairlanes had special fiberglass air scoop hoods and only 70 were built. Drag fans had been looking forward to a battle, but rules are rules. As it was, the Street Hemis dominated the A/S class, turning e.t.s in the mid-11s at up to 120 mph. The 427 Fairlane drivers would have had their hands full.

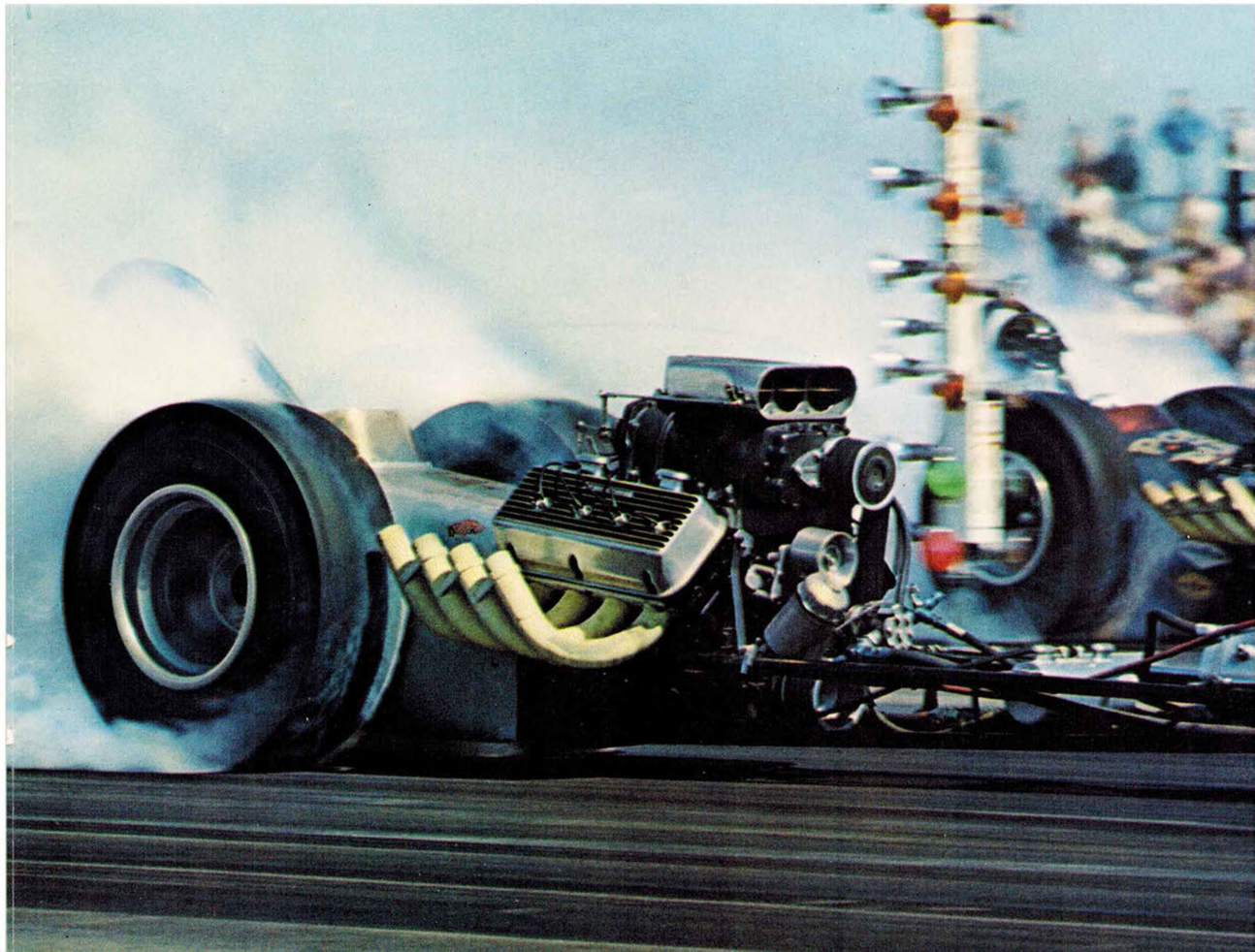
The 1966 Chevrolets with optional 427-cu. in./425-bhp engines appeared to be the cars to beat in B/S, after Wiley Cossey won this class at the NHRA Winternationals with such a car. Unexpectedly, the '66 Chevelles with the 396-cu. in. version of this engine, rated at 375 bhp, did the job. This "Z-16" option for the Chevelle, released in mid-year, uses the large valve cylinder heads, solid lifters and a Holley 4-barrel carburetor on a big-port manifold.

There was special interest in the C/S run-offs this year because this class contains many of the late factory Supercars such as the GTO, Oldsmobile 4-4-2, Fairlane GT, Comet GT and Chevelle SS 396. Very close competition between all the models was anticipated, but when it came down to the wire only GTOs and 4-4-2s remained, turning times in the 12.6 sec. at 108-109 mph. These cars used the new factory cold air scoops that add 15-20 bhp by ramming cold outside air to triple carburetors. The kits also include improved camshafts and valve springs that perform well at 6000 rpm with hydraulic lifters. This extra punch was needed to win the C/S class from the older 409 Chevrolets and 406 Fords. It was obvious that Ford, Buick and Chevrolet have neglected performance development of their Supercars. Development must continue throughout the model year. NHRA rules allow new equipment to be introduced in mid-year, if at least 50 complete cars are assembled on factory lines. Oldsmobile's cold air package wasn't approved as "stock" until early in August. However, Oldsmobile has the national C/S trophy on display.

Dodge's new 275-bhp Dart package appeared in good number in D/S competition, but they weren't quite strong enough to put down the old Chevrolet and Pontiac Super/Stock models of the early '60s.

The most significant technical trend among the higher performance stock cars this year was the change to exhaust headers using four individual pipes of tuned length for each bank, dumping into one large collector. In the past the favored setup has been paired headers, with two cylinders of each bank exhausting into one pipe, which merges with the main collector; cylinders 1-3 and 2-4 are paired on the left bank to prevent overlapping exhaust pulses from blocking each other. Late performances prove conclusively that the best present exhaust setup is separate pipes of equal length approximately 40 in. from head to collector, for each cylinder. The design is complex and often requires alteration of the car's fender wells, but there's another 10, 20 or 30 bhp ready for the taking. ■





Drag racing's greatest spectator treat comes at the very start. That's when the colorful mechanical monsters toe the mark, gather themselves up in a great fury of sound and then hurl themselves shrieking and smoking down the striped asphalt strip. Little else in the sports world can match this instant for its display of raw, animal power.

PHOTOS BY KENT KELLY