



NCKCC News

Handcrafted Automobiles

April 2008

Volume 26 Number 4



Here is a view of part of the Car Show at Knightsen on April 5th. We had 15 club kit cars and the Community Show included at least 30 more, so we had lots of spectators, lots of members, great food and great weather. Fine start for our first outdoor event.

ACTIVITY NOTICES

April 26-27, 2008 - AHA Knott's Berry Show in Buena Park, CA Go to www.replicarclub.com for registration forms.

May 10, 2008 - Spring Fever Car Show, Niles District, Fremont. Registration form on www.nckcc.com click on "Hotline"

May 31 - June 1, 2008 - Walnut Creek Art & Wine Mini-CarShow. Heather Farms Park.

“COMING OUT” AT KNIGHTSEN

By Vern Hance

We had 26 people and at least 15 cars at our 2008 Coming Out Party held at the East Contra Costa County Museum.

We started the day getting our cars positioned at 10:30 a.m., then some exploring of the many interesting displays at the Museum. Lots of Contra Costa County history is documented within the several buildings.

At Noon we started with delicious hot dogs (with your choice of mustard, catsup, sauerkraut or all the above), prepared by Museum volunteers, and included a cold drink and chips. Mem-

bers provided a variety of salads and desserts that rounded out the menu. The club had arranged to cover the



Museum's cost for the hot dogs, fixings and drinks, but Al Bello insisted on making that donation on the club's behalf. Thank you Al for your hospitality!



A program started at 1 p.m where we gave recognition to our new members that joined us during the past year and those that finished or acquired new cars. Allen & Maryann Koch came from Citrus Heights and told us about there MG-TD that is being restored. Dick Norway drove his MG-TD from Antioch (with a For Sale sign showing) and revealed his plans for the next kit car. Ted & Billie Lichti



DeCato (MG-TD + Shay Model A), Vern Hance (M-B 500K), Dave Jones (Pontairi), Paul & Ruth King (M-B SSK), Allen & Maryann Koch, Peter Kunedt, Ted & Billie Lichti (M-B 500K), Chuck Maddux, Dick Norway (MG-TD), Gil Somerhalder ('49 Ford Easy Rod), James & Wendy Wagner (ZR2), Robert Wagner, Tom & Irene Wallters (M-B 500K) and Ross Wentworth (M-B SSK).

We were blessed with wonderful sunny weather and temperatures in the 70 degree range and a good turnout of members.

drove their Heritage Mercedes 500K from Carlotta (near Eureka) and told of visiting Billie's sister who lives in the area. We also welcomed new member, Ross Wentworth, who drove his just purchased M-B SSK replica from Dublin. These same four families were also recognized for their recent kit cars.

We particularly want to thank Dave & Joyce for the invitation and Al & Pat Bello, along with many other Muesum volunteers for all the work in preparing and serving food.

Not all of our honorees could attend, but the club contacted most of the new families by phone earlier and a few sound bites of news obtained about their kit car projects was reported to those assembled.

Attendees (with cars) included: Steve & Mary Ellen Bales (M-B 500K), Al & Pat Bello (Studebaker Avanti + Dunebuggy + Model A, maybe more), Robert & Barbara Bohaboy, Dave & Joyce



“CAR” EVENTS OF INTEREST TO MEMBERS

PACIFIC COAST DREAM MACHINES

April 27, 2008 at Half Moon Bay Airport from 10 a.m. to 4 p.m. All years, makes and model welcome. \$30 registration (\$35 after April 15th). Includes dash plaque and admission for two. Call 650-726-2328 or www.miramarevents.com

NILES SPRING FEVER SHOW

The date for the Niles District car show is May 10th and if you want to attend, a registration form is posted on our website www.nckcc.com (click on HOTLINE)

MAXWELL CLASSIC CAR SHOW

This is a car show in Maxwell, CA on Saturday May 17, 2008 at the High School. It is free and still offers some nice raffle prizes. (I got a 12-volt air compressor last year) Car show starts at 11:00 a.m. and you can participate in the parade at 9:30 if desired. Maxwell is about 120 miles north of Oakland on I-5 and takes about 2 hours to get there. A registration form is posted on our website www.nckcc.com (click on HOTLINE)

ED “Big Daddy” ROTH HOT ROD DISPLAY AT BLACKHAWK MUSEUM

Continuing display 2/13 to 6/15. Hot Rod Run 5/4/08 1-4 p.m. Plaza show of Hot Rods 6/15/08. Father's Day free pinstriping of personal items. Dads get free admission.
www.blackhawkmuseum.org

RIDIN' FOR HOSPICE POKER RUN

Bob Bohaboy has invited NCKCC members to participate in this benefit poker run on Saturday June 28, 2008. Cost is \$25 if you pre-register by June 1st (\$30 later). Starts at Placerville at 9:00 a.m. and cruises through Gold Country and Crystal Basin. Finishes at Camino, CA with a BBQ from 1:30 to 3:30 p.m. A form is posted on our website www.nckcc.com (click on HOTLINE).

PACIFIC GROVE CONCOURS AUTO RALLY

This is limited to 200 cars so if you are interested in attending you must act fast even though the date is August 15, 2008. Registration is \$75 and the form is posted on our website www.nckcc.com (click on HOTLINE) I received this from Chuck & Ronnie Latty, who will be participating.

For anyone without internet access, you can get a registration form by calling Vern at 925-938-1442.

DUES ARE DUE FOR 2008

\$24 per year will keep you a member in good standing and keep you on the newsletter mailing list. Those who have paid their dues each month will be congratulated here, so watch for your last name to appear in this space. Those that don't respond will be dropped from the club roster.

Below are 4 more people that have paid their 2008 dues.

DeLany	Heinke
Lugone	Rowland
Wentworth (new)	

As the months go by this system requires you to check back to the January, February and March newsletters to see if you have paid. Anyway you can always e-mail Vern at nckcc@astound.com to see if you are paid up - or call (925) 938-1442.

NEW MEMBERS

We welcome one new member this month. (*Ross, Dave & SSK at right*)

Ross Wentworth lives in Dublin, (925) 803-8310, (ogre@geekbiker.net) and just acquired a 1929 Mercedes SSK replica last week. Thanks to fast action

by Membership Chairman, Pat Cooley, Ross was directed to our Coming Out party in Knightsen and received a warm welcome from our members.

We welcome Ross aboard The Good Ship 'NCKCC' and look forward to seeing him at our coming events. Ross has a job working with internet servers and Vern has already asked for website help, so our nckcc.com may get a new life in the near future.

NCKCC IS A MEMBER CLUB AT THE TOWE AUTO MUSEUM

We are a member club of the Towe Auto Museum which gives you the benefit of free admission by showing the Complimentary Pass attached to your March or April newsletter - subject to dues payment. It is good until 12/31/08. The Museum has a list of NCKCC members so avoid embarrassment and don't loan the card to a friend. embarrassing situation.



FLAT OUT AT BONNEVILLE

Lawrence Kren
Contributing Editor, Machine Design

"There are people such as myself who have decided not to own a bigger house and a Jacuzzi and instead build a land-speed car," laughs Lon Miller, a self-taught engineer. Miller used to design commercial food-processing equipment for Key Technology, Walla Walla, Wash., and recently got bit by the Bonneville bug. "I knew right away that it had to be a 1953 Studebaker," Lon adds. "Bonneville legend Gene Burkland raced a '53 Studebaker, and his son Tom holds the world record at over 400 mph for piston engine streamliners"

FROM THE GROUND UP

Rod laid out a rectangular-steel-tube chassis and fit the rear body to it. A dummy engine block placed in the frame located the lower engine mounts and plate. A fuel cell and coolant tank go ahead of the engine. A full roll cage was assembled off the car then raised into place and welded. The driver sits where the back seat used to be for better weight distribution.

Bonneville A/GCC (Unblown Gas Competition Coupe and Sedan) class rules say the contour of the car body from the cowl back must remain stock. "You can chop the top, which we did, but the body can't be slanted in any way for aerodynamic advantage," explains Lon. From the cowl forward is open to modification.

The nose started as a fiberglass Studebaker replica originally designed for an NHRA drag-racing car. Hooked to it was another fiberglass section. The re-contoured, extended

nose improves aerodynamics and boosts down force, too much, in fact, as the Millers would later learn.

In an effort to cut drag, a smooth steel pan completely covers the underside of the car. The pan slopes upward at a slight angle starting behind the rear axle and going to the rear bumper, a well-known trick among racers to boost down force and smooth airflow exiting the rear of the car. Rear flow straighteners, roof rails, and an adjustable rear wing round out the aero package.

The A-frame coil-spring front suspension and rack-and-pinion steering gear come from a 1970s Ford Mustang II. An intermediate step-down gearbox between the steering wheel and steering gear makes steering less sensitive to control inputs. "Driving at high speeds on the salt takes a light touch," says Rod.

Apparently some drivers don't have it, as evidenced by the number of cars that spin out each race day. Narrow, high-pressure tires tend to grip well. And bigger-diameter tires give better traction than smaller ones, and they drop engine rpm, both pluses. However, nobody seems to agree on the amount of tire-to-salt slippage. "I've heard numbers from 3 to 9%," Lon says. "We compensate for slippage with gearing." A 9-in. Ford rear end with a Watts linkage contains 2.47:1 ring and pinion gears from a 1970s Lincoln. The gearing is considered tall, but accounting for loss of traction, it may still not be high enough to go for record speeds.

A one-off, quick-change gearbox helps compensate for tire slippage. Two sets of spur gears from Winters Performance

Products Inc., York, Pa., go in a housing that was NC milled from a chunk of aluminum (scored for cheap on Ebay). The bearings and shafting were sized by reverse engineering a four-speed transmission. The gearbox goes in-line between the transmission and rear end. It permits fine adjustments to the final drive ratio. There are simpler ways to do this, acknowledges Lon. A purpose-built rear end for drag racing or stock cars is a better choice. But they are pricey, and he wanted to keep costs down.

800 HORSES AT A FULL GALLOP

With the body and chassis well underway, attention now turned to the engine. A GM Bowtie racing cast-iron big block got the nod. The special block is designed to be bored out more than what's possible with ordinary production blocks. This aligned with the goal of building an engine with a relatively short stroke and large bore (over square). The geometry lowers piston speed and acceleration, important considering that the 500-cu-in. mill redlines at over 8,000 rpm.

Unlike drag racing, "An engine built for Bonneville must run reliably flat out for 5 miles at a time," Lon explains. "It's basically an endurance engine." A sophisticated valve-train comprised of titanium valves, roller rocker arms and lifters withstands the abuse. Trick aluminum racing heads from Dart Machinery Ltd., Troy, Mich., and a high-lift, long-duration camshaft help the big engine breathe and make maximum power at high rpm.

The exhaust valve heads are of a smaller diameter than the intakes, as in most engines. But the exhaust pushrods are

fatter than those on the intake side to prevent the former from buckling under load. It turns out the camshaft's extreme valve overlap opens the exhaust valves against compression pressure. The compression ratio is a lofty 14.5:1 to squeeze as much horsepower as possible from the thin air at the Bonneville lakebed. The combination of a 4,000-ft elevation and 100°F temperatures in mid-August can push density altitude above 5,000 ft. The high-compression setup, though effective, leaves little room at top-dead center between the piston and valve heads, and the combustion chamber. Spark plugs are rotationally indexed so the electrodes fit in pockets cut into the piston heads.

A massive four-barrel carburetor feeds to a high-rise aluminum intake manifold, drawing high-pressure air from a rear-facing cowl-induction scoop. Custom exhaust headers incorporate equal-length tubes that step up diameter in three increments before going to a large collector. The arrangement is said to improve scavenging of spent exhaust gases from the combustion chambers, and it promotes filling of the cylinders with fresh fuel/air charge. The Millers apparently are on the right track because dynamometer runs show the engine makes a healthy 800 hp.

The engine couples to a modified two-speed Powerglide automatic transmission, the same type found in 50s and 60s Chevys, but with the torque converter removed. Torque converters can fly apart at high rpm and maim or kill the driver, necessitating a blow shield to contain the debris. Ditto for manual transmissions with their heavy flywheels and clutches.

(Continued on Page 8)

FROM THE PREZ

The word from the Prez was presented at the Coming Out party in Knightsen and dealt primarily with our Annual Show plans. Your editor will attempt to recall it from his unreliable memory.

The show will start on September 6 at the San Leandro Marina and will include an evening banquet. The Sunday activity will be a driving event to a point of interest. (like maybe the Towe Auto Museum in Sacramento)

Details about trophy classes and their presentation are not firm yet.

A postcard design has been prepared by Dave's son and will be used on the website and made available as a poster for those that will help promote the show. Per our discussions at the April 5 party, we will plan to add "A Handcrafted Auto Show" below the Wheels for Wheelchairs event name to focus on 'handcrafted cars' rather than 'all cars of all types'. However the term handcrafted will be interpreted broadly and we hope to have some restored (but handcrafted) originals as well as other handcrafted cars that are not truly kit cars.

With our late start we are asking all of you to help pull this show together and make it a winner in September.



(Continued from page 7)

The only thing left connecting the engine and transmission in the Studebaker is a lightweight, steel plate with a starter ring gear. Rules mandate that cars start on their own without pushing so the ring gear had to stay. A push truck gets the car up to about 40 mph, at which point Rod engages a lever that sends hydraulic pressure to bands in the transmission, effectively locking the transmission gears to the engine crankshaft. The big-block Studebaker accelerates rapidly, leaving a salt cloud in its wake as it disappears over the horizon about 3 miles out.

SALT TALES

Speed Week 2006 was the first for the Studebaker. A target speed of 225 mph proved conservative; the car went 238 mph. But the inaugural outing wasn't without problems. First, the front coil springs were too weak. Aerodynamic down force fully compressed the springs at speed and ran the front tires into the wheel wells. Later in the week, a bronze bushing in the transmission tail shaft that supports the driveshaft burned up because it was never designed for these speeds. A switch to needle bearings solved that issue. So far, the updated transmission has worked well. But with only two speeds, engine rpm drops about 3,500 rpm when shifting to top gear, out of the narrow band where the engine makes maximum horsepower.

The down-force problem reared its head again in 2007, despite a doubling of the front spring rate and raising the front end 0.5 in. Officials eventually banned the car from further competition (until the problem is fixed) after the nose dipped into the salt

surface at 235 mph, turning the Studebaker into the world's fastest plow.

Disappointed but undaunted, the Millers are busy tweaking the car for Speed Week 2008. A three-speed 350 Turbo Hydramatic automatic transmission will sideline the old two-speed unit. They also traded the A-frame front suspension for a straight axle with a Panard bar and adjustable coil-over shocks. To wring even more power from the big block, compression will be bumped up to a staggering 16:1, near the theoretical limit for spark-ignition engines. The cylinder head combustion chambers were laser scanned to fit custom pistons to the contours.

The most noticeable change is a complete makeover of the fiberglass nose. Gone is the front splitter as well as a portion of the ramped upper fender surfaces, features that, in hindsight, helped generate the excessive front down force. The nose now resembles that of George Poteet's radical 1969 Barracuda land-speed car Blowfish. Blowfish's incredibly slippery 0.21 drag coefficient is the result of extensive wind-tunnel testing at Chrysler. The turbo-charged, four-cylinder 'Cuda has already gone over 255 mph and is aiming at 300 mph, which would make it the world's fastest door slammer. Lon and Rod hope to benefit from Poteet's success and eclipse the current A/GCC record of 259.931 mph with their Wretched Excess Studebaker.

FOR SALE

COBRA Ford power, Jag rear-end. Silver w/ black interior. \$21,500 Call Bob Elster 707-938-3254 (1/02)

COBRA-NAF. Ford 289power, 4-speed, Jag posi rear-end. Blue w/ black interior. 5,000 mi. \$23,900 Call Trifam (925) 820-1847 SB-100 smog-exempt (9/07)

COBRA - VW KIT - 427 Snake body fits on your 3" shortened VW chassis. Two available; **reduced to \$2,200 from \$3,200** Call Wayne McAllaster (510) 656-5844 or E-mail 427medusa@sbcglobal.net (2/06)

FERRARI - TESTAROSSA Spyder. Based on 1989 Corvette with 350 V-8 engine and automatic tranny. **Reduced to \$12,000.** Contact Anthony Ramsinh (408) 268-6554 or e-mail aramsinh@aol.com (11/05)

GATSBY - Ford 351W, auto overdrive tranny, SB100 CA smog exempt. Great driver, awesome condition, continuous show winner. \$29,000 Bill Navratil (408) 374-5277 E-mail bnavra@aol.com **New Listing** 4/08

MANX SR-2 - 1678 cc VW engine with 4-speed stick. New interior in 2002. Built in 1977 by present owner who has all receipts, etc. Includes a spare 1600 VW engine and extra parts. \$5,500. Call Don Wicks (707) 998-9383 or e-mail at dkwicks@mchsi.com (11/05)

MERCEDES SSK (Gazelle) Parts: 4 fenders (brown), windshield, radiator shell, bumpers, interior leather and top (tan), tail lights, supercharger pipes, doors (yellow), latches, hinges, etc. Tim 510-278-3085 (04/05)

PANTERA Factory built, only one known to exist. Red w/ beige interior, Chev engine \$35,000 Call Bob Elster 707-938-3254. (1/02)

PORSCHE 550 Spyder. A Beck turnkey built in 2003. 5,000 orig miles, never tracked, 2156 cc custom 182HP dynoed engine w/ 44mm Webers. Everthing polished or powder coated, ceramic mufflers, 4-wheel discs, custom roll bars, silver-blue, tan interior plus all Beck options. SPCNS smog exempt. Asking \$30,000. Dan Rowland 916-989-4330 or cell 916-367-8502 **NEW LISTING** 02/08

The kit car industry on the Internet:

kitcar.com
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"Cars for Sale" ads in the *Kit Car Sun* are for members only. Rate is \$10 for 12 issues.

CALENDAR OF EVENTS 2008

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May 31 - June 1, 2008 - Walnut Creek Art & Wine Mini-CarShow. Heather Farms Park.

July 3, 2008 - Benicia Fourth of July Parade, dinner following.

July 19, 2008 - Tour of Hays Antique Truck Museum, Woodland, CA (Vern Hance, Champion)

July (late) - Car show in San Jose (Will Smith Champion)

August 16, 2008 - Hot August Niles Car Show. Niles District of Fremont.

September 6-7, 2008 - NCKCC San Leandro Show 9/6 with Driving Event 9/7.

October 11. 2008 - Wine tour by Wagner & Maddux.

October 25-26 -, 2008 - Club Sandwich, Laughlin, NV

December 7, 2008 - Annual Brunch, Pleasanton Hotel.

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