



FREEWAY NEWSLETTER

No 6

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Gusald J. Martie, Editor 2102782

7/6/81

Don:

Thanks for the informative newsletter—I enjoyed the June publication that Sue gave me.

I drove my Freeway from Minneapolis to Phoenix in five days, June 29 to July 3, about 1800 miles, and I have some comments that I will forward to you as soon as I clean off my desk.

Bill Kumer
Glendale AZ

Editor's 3000 Mile Report

At 2775 miles the driven unit of my clutch went out including the button inserts, cam and spring. Our driven unit is 490 but I have included a picture of a similar unit in this issue so you can see the button inserts. There is nothing in the owner's manual about them (see Tom Foreman's letter) but they can be pried out and replaced or turned to wear on the other side.

Then I needed a new chain sprocket on the jackshaft. I had shinned the chain too tight and lost most of the teeth.

I needed a gear puller to get the pillow blocks off the shaft and a five ton press and torch to get the old clutch off. I then sanded the shaft down on a lathe and the new parts slid on nicely. I also replaced the chain (it is #50). Like Tom, I had to move the engine, but unlike Bill Scott, I found that the angle iron frame is flexible and can be pried away to get at the two front bolts.

EV EXPO '81

Baltimore — October 21-23

At 2968 my speedometer

broke. Soon after I passed the 500 mile mark the car developed a bucking when accelerating from stops. Dave told me stiffer shocks would help but I continued to experiment. When the driven clutch went I asked again about the bucking. Chris told me it was a structural defect and that only the stiffer shocks would help, but they would cost \$20, as I passed the warranty period. However, the above repair work solved the problem without new shocks, but I don't know why. I am averaging 50 mpg with my 1450.



THREE WHEELERS OF THE PAST 1853 - 1924

From an age when anything went, we can learn some amazing things. The first below is only passenger cars and does not include motor-tricycles or sports cars. Chain and belt drive was common in early cars as was the line cylinder engine.

Many of the pioneers had a background in bicycles and motorcycles, and many of the now famous names such as Karl Benz, Louis Renault, Herbert Austin, and Armand Peugeot, began their automotive history with three wheelers.

Many of the early manufacturers joined the field because it seemed to be a thing of the future. Three wheelers lost popularity to the faster four-wheeled cars and most manufacturers changed to four wheels. Of course, our present engines are infinitely more efficient now along with better tires, etc. I hope the freeway doesn't change very much.

1853-1895 **Rover Steamcar** USA. Possibly the earliest mechanically propelled light passenger vehicle for personal transportation to be built in the United States, its maximum speed was around 20 mph.

1885-1899 **De Dion Bouton** France Steam (gas 1895) road vehicles. It had two front steering wheels and one rear driving wheel. Boiler and water tank were between the front wheels. De Dion was the first one in Europe to embark upon manufacture of vehicles of this type.

1888-1891 **Benz** Germany The world's first gasoline-engine car to go into commercial production. Steering was by a single front wheel. Karl Benz built his first car in 1885 and began to catalog them for sale in 1888.

1891 **Serpollet** France Leon Serpollet, in conjunction with Armand Peugeot, produced a truly efficient light personal steam carriage. He made about a dozen in Peugeot's cycle factory.

1894-1896 **Bernard** Italy Professor Enrico Bernard built a gasoline engine in 1893 and eleven years later was responsible for Italy's first car.

1895-1896 **Knight** Great Britain The first internal combustion engine car. A Knight oil engine powered the car.

1895-1899 **Lean Bollee** France A tandem two-seater called a "Voiturette".

1896 **Pennsylvania Motorcar** Great Britain USA A strange tricycle classified as a passenger car.

1896-1900 **Walsley** Great Britain Walsley, while employed by the Walsley Sheep Shearing Machine Company at Birmingham, Herbert Austin made their first car, originally an off-cooled three-wheeler based on the Lean Bollee (see "Innervator" with a water-cooled two cylinder and a single front wheel. Austin later built his own cars.

1898 **Buryea** USA Charles E and Frank Buryea's Buryea Motor Vehicle Company on present evidence is generally accepted as America's first working gasoline-engine road vehicle (1895). In 1895, the firm split up and its successor, the Buryea Motor Company of Waterloo, Iowa, run by Charles E. Buryea, made its first new car with three wheels.

1899-1902 **Wolker** Switzerland Originally named the three wheeled road from Zurich. The vehicle was based on the Lean Bollee from France. It had a water cooled 3 hp engine with belt drive and moved the rear wheel.

1901-1903 **Knox** USA A 4 hp air-cooled engine made by the Knox Automobile Company of Springfield, Massachusetts.

Vintage Motor Bike Club

Another sunny afternoon, a gentleman stopped me in a parking lot and identified himself as Fred Hirsch, editor of the Vintage Motor Bike Club Newsletter. Their organization is a National Club for anti-reproduction motor-bikes and scooters. It was chartered in the state of OH in 1972 as a profit organization. There are 50,000 a year and include membership in VABC, four seasonal issues of their publication, and free advertising privileges. The club members are the only three wheelers shown by the club. Their annual meeting was July 30-Aug 2 in Fortland, Indiana. If interested send \$25 to Lonnie Bovey, Secretary, Treasurer, 330 East North Street, Colwell, Ohio 45828. Fred has some old copies of British magazines with articles about two more postwar small three wheeled cars. They are the popular (in England) 400B Minicar and one called the AC "Petite". We hope to have copies in the future.



In Don Burton's 1980 book, 'The World of Motor Bicycles', he writes that the AC 'Petite' was the first three-wheeled motor car to be built in the world.

More Three Wheelers

I tracked an antique three-wheeler to a place called Bill's June 1981 only to find that he had sold it a month earlier after it sat in his garage for ten years. It was a 1931 French Villard. It had a 4 cylinder opposed gasoline engine, and everything ran off of the single front wheel, including steering. It has a manual transmission with floor shifts. It turned up at the 26th Annual Rolling Roadies Antique Auto Club Show on July 26th. It is the only known one in the country and I hope to have some pictures for the next issue. It is now owned by Koody Dyer.

Among the various people that stop me with questions in parking lots was a fellow who once sold Rupp automobiles in the State of Montana. Rupp made a three-wheeler called the CENTAUR in its plant in Crawley, Minnesota. It had no top and one wheel in the front. It was powered with a 12 hp two cylinder Kohler engine but was more of a recreation vehicle than a passenger car.

From 1981 USA's George Moore, in 'World of Motor Bicycles', he writes that the AC 'Petite' was the first three-wheeled motor car to be built in the world.



A 1931 French Villard, the first three-wheeled motor car to be built in the world.

Acrylic Windows

GMC Advanced Design Bureau and Gramman Flexible 870 Bureau use windows of "Lucite" SAR says the Dupont Company (Box 38725, Wilmington, DE 19898). It provides abrasion resistance close to that of glass, increases passenger safety, and insulates better than glass. It has long term optical clarity and about half the weight of glass. GM's have replaced 1/4" glass with 1/2" SAR acrylic without increasing total bus weight. The side windows on my Freeway are 1/8", and the rear window is 1/4". With reference to those 001 consultants who insist on safety glass, GM's new law seems to apply: "Established technology tends to persist in spite of new technology".



The Newsletter

Starting this month, the price of the next four issues will be \$2.00 for those that haven't yet joined. New features are free advertising for any subscriber of reasonable size and related to those wheel cars and high mileage passenger cars, together of the editor's own mind and parts lists, assembly and maintenance instructions for various components of the Freeway. We hope to generate some interest from those wheel car fans in general, and advise you of other information sources and events.

There has been some enthusiastic response to Issue #5, but we have a ways to go before it breaks even financially.

Deadline for copy for the Winter Issue of The Freeway Newsletter is November 16, 1981. Mail all advertising copy, articles, letters, etc. to the editor before this date.

Thanks for the nice words about Issue #5. Does anyone have any innovative ways to buy insurance for the Freeway?

As of August 10, owners in twelve states are on the mailing list. In the next issue, I'll report the numbers in each state. Some of you may wish to promote a get-together in your area.

Letters

Dear Editor:

Here is a suggestion: A small section with a title such as "Comments to the Editor" (here's the first one - get hot on the reverse, right now my will not even give an estimate on the date for its availability).

Leonard J. Coas
Mechanicsburg, PA

What's New From Bernsville

Hi, Mr. White, moved to a larger building. Their new address is 17123 So. 16th Avenue, same city, same zip. They built 51 cars in July - the most ever in one month. Order number 85 of August 10 were up to #1910, and the special color cost is now \$100,000. They are working on the Blower problem, the last I heard they were talking to the Gillette Company about a blower used in a blow dryer.

Drivers in New Jersey still have a problem with the helmet law, and with Connecticut planning to allow registration, Maryland is the only known hold out.

Rats off to 0-10. Hilda's who drove his new car back to Texas, Jack Blum who drove his back to Pennsylvania, and of course, Bill Kanner who, after his drive back to Omaha, drove to Los Angeles.

July 31, 1981

ASSEMBLY SEQUENCE

DRIVEN UNIT



PARTS LIST	
ITEM NO.	DESCRIPTION
1	Ring bearing
2	Spring
3	Blade, front
4	Grease, Molydene Free LP
5	Grease
6	Knob
7	Knob
8	Knob

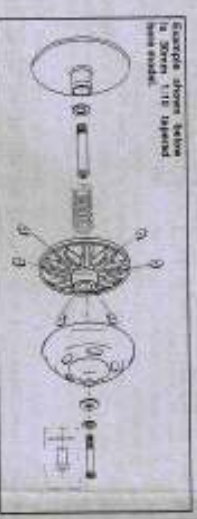
Ken, Jillian, & Big Snow, Fred has a New Duster's 2013/15/16/17

SIMPLICITY at its finest that's the DUSTER by COMET

The DAC 84 200MM 1:10 Imperial gearset is shipped standard to accommodate 1:12.5 and 1:14 top width belts... which includes main machine 500-4158



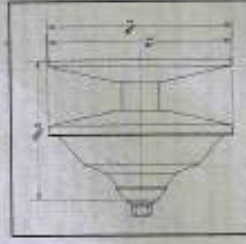
Freewheeling arms are a big part in assembly and size of these are the only Duster's simply: Pins, Rollers, Axles, etc. have been eliminated. In fact, the standard 94 Duster has only 10 items parts for the complete



Grease galls, probably made with poor foot conductivity to one another makes the DAC fit like a glove. "never"



Calibration is easy. Calibrating the DAC Duster is a simple matter of adding or taking away from the actuator pulley roller-up and using the option of different pulleys and compressor speed. The DAC Duster has manual speed for quick and/or regular speed. The quick calibration the Duster to his own



Maintenance is simple. In most cases, all that's needed to remove your old clutch, take the DUSTER from its car, and place it on the workbench, stretch the belt, remove the retaining bolt down and you're ready to go. Even if you need to see the DUSTER on for a bit, when it's time to go, you can take it apart in the 200MM size (model 75) or 1:12" belts. The DUSTERS is compatible with a wide range of driven units, adding to the ease of installation. And there is a DUSTER for nearly everyone regardless of crankshaft size.

Maintenance is never a problem because there are fewer moving parts and NO severe friction loads within the DAC assembly. Lubrication is handled by the use of a special, non-oxidizing bearing grade of grease, free of copper, zinc, and lead. The DAC DUSTER has been included into the machine... see what it perform

There's a DUSTER for everybody's wheel. The DAC Duster is available for all automobile and mini motor cars using both drive systems such as A.T.V.'s, the Three Wheelers, Special Bikes... see what Automotives

ADVERTISING

DRIVE SYSTEM TERMS

Two wheel Accessories, Catalog
Two Wheel Corp, 344 Jericho Tpk.
Mineola, NY 11501
Phone toll free (800) 645-0066

Lovejoy/Rosta Tensioner Brochure
Lovejoy, Inc.
2645 Wisconsin Avenue
Downers Grove, IL 60515
312-852-0500

Electric Vehicle News-Published Quarterly
USA \$15.00 per 1 year
PO Box 350
Westport, CT 06881
(203) 226-4600

Comet Industries (The Clutch People)
Shield Emblem, Vinyl, Decal - 2 1/4" .10
Embroidered Sew On Patch - 4" across 2.00

Driven Unit Button Inserts (3) 4.50

Activator Puck for Clutch
approximately 25.5 grams wt.
Five-sided-solid ea. \$ 2.00

GP-730A Clutch and Torque
Converter dry lube 11 3/4 oz. \$ 6.95

Never-Seeze/prevents clutch freeze
on crankshaft PTD 1 oz tube \$ 3.00

Thampton RL-85 Spark Plug \$ 2.50

10 Oil Changing Hose 1.50

1/8" aluminum shims (set of two) \$ 2.50

Note: Never shim to the point where your chain is tight-some slack is necessary to adjust to frame swing (rule: one is the equivalent of almost two steel shims that come with the car and would replace the original shim after the chain stretches. Further, shimming will distort the distance between the clutch which is important

SCL Plastic Cleaner and Polish 8oz \$ 3.00

RI residents add 6% sales tax - Write to Freeway Newsletter (add .18¢ for postage to orders under \$2.00)

Collective Angle - The sum of the two sheave face angles. For example, if each sheave has a 13 degree angle on the face, the collective angle is 26 degrees. This is the most popular collective angle of snowmobile drive system pulleys.

Driven Unit - The driven pulley member of the variable speed drive system located on the driven shaft, also called the jacksaft.

Driver - The drive clutch.

Final Drive - On most snowmobiles, this is a chain drive from the sprocket on the driven shaft to the sprocket on the track assembly.

Jackshaft - Also referred to as driven shaft. The driven unit and final drive sprocket assembly for driving the track are located on this shaft. Brake assemblies are also mounted on this shaft on some machines.

Pitch Diameter - The diameter of pulley at the point where center of belt sides have most friction ability for driving. The minimum pitch diameter is the smallest diameter of pulley's ability; maximum is largest diameter of pulley's driving ability.

Ratio - The relationship between the number of times the drive clutch revolves to the revolutions of the driven unit. Low End Ratio- is the ratio between the drive clutch and driven unit when drive clutch is at its smallest pitch diameter and driven unit at its largest. High End Ratio-refers to the opposite pitch diameters of the drive clutch and driven unit.

Secondary Clutch - Term sometimes used to describe the driven unit of a variable speed drive system.

Sheaves - The pulley faces. Two sheaves form a pulley. Moveable sheave is the pulley face that is moved in and out to create different pitch diameters for drive belt. Both drive clutch and driven unit have moveable sheaves. Stationary sheave is pulley face that remains in place as moveable sheave changes position to create various pitch diameters.

Torque Sensing - Most driven units are torque sensing. They have a spring loaded cam that will respond to the torque load demand of the driven shaft to adjust the ratio of the system.