

WILLYS-OVERLAND BREAKS FORMER PRODUCTION MARK

The Willys-Overland company broke all its previous high production records on Tuesday, May 15, when the company turned out a total of 2039 Willys-Knight and Whippet cars, an increase of 229 cars or more than 12 per cent over the previous high record of 1810 cars produced on April 19. It was announced here today. This is the largest single day's production ever attained in the 20 years' existence of the company. In spite of the high rate of production, the company still has unfilled orders for more than 30,000 cars on its books.

From May 1 to 15, production totalled 19,969 cars as compared with 17,792 cars during the first 15 days of April. Production last year for the first 15 days of May was 12,774 cars and from April 1 to 15, 1927, output totalled 12,147 cars. Production for the first quarter of this year was 76,698.

With production totalling 38,509 cars during April and with May output now passing 2000 daily, production for the first half of the second quarter as of May 15 amounted to 58,469 cars or a total of 135,158 cars for the first four and a half months as compared to an output of 120,261 cars for the entire six months of last year.

The company's production was increased from 16,289 cars in January to 34,635 in March but April production exceeded March by nearly 4000 units. Aggressive expansion of Willys-Overland in the automotive field is further illustrated by the fact that more than 1100 new dealers have been added since January 1 or an increase of 23.2 per cent in its distributing organization. Employment at the Toledo plants also has reached a new top with nearly 22,000 persons on the payroll.

CHRYSLER CONQUERS HALL STREET HILL

Another famous and severe test hill—Hall street in Portland, Ore.—has fallen before the motor car's progress. A Chrysler '72' sedan conquered it under newspaper supervision, using only high gear from a standing start at the bottom.

Hall street is famed the far west over—many cars able to make outstanding records on such hills as Pike's Peak have fallen down completely when put to the test on this staminal-divulging thoroughfare. Only five blocks long, it presents two difficulties that heretofore have resisted successfully all sorts of closed cars to conquer it in high gear. The first is a 14 per cent grade of two blocks, then one of 12 for several hundred feet followed immediately by a hairpin turn of 30 feet radius, 24 feet width and 7 1/2 per cent grade. The hairpin is succeeded directly by a 15.7 per cent grade—representing a foot rise in elevation for every 3.73 feet traveled.

"The first two blocks were run with ease in high," says a Portland paper, "the car gaining rapidly. As the grade sloped off to 12 per cent the '72' gained such high speed that the throttle had to be cut off before entering the hairpin was safe. M. J. Zedrick, the driver, took it around this steeply, hitting it at 28 miles an hour, but the short radius and steep grade in the turn itself took a heavy toll so that the Chrysler went into the last and steepest grade with practically no momentum. From the hairpin to the top is the 15.7 per cent grade, yet at no time was the speed below 16 miles an hour, and then only for a short distance."

The car was from the stock of the Chase Garfield Motor Co., of Portland, Chrysler distributors for Oregon, and was taken immediately from a demonstration to a customer and put over the entire hill in high without so much as touching the clutch.

"The fact that the '72' sedan climbed Hall street in high with two passengers would not be significant if it were especially well suited for climbing," said Mr. Garfield. "But when you consider that this identical stock model will actually travel 22 and more miles an hour it becomes evident that Chrysler performance means exactly what the word itself means."

Following the climb the car was given an economy test. Under disinterested observation the gasoline vacuum supply system was disconnected, carburetor drained and a quart of gasoline connected directly with the carburetor. The car then ran 3.1 miles before the can's contents were exhausted—an average of 20.4 miles per gallon. An average speed of 28 miles an hour was maintained. The clutch was let out at no time during the test.

Air Record Seeker



Joe Hart, snapped at Chickasha, Okla., before attempting to break the world's airplane endurance record in a monoplane purchased by Chickasha oil men and given to Hart.

NEW DESIGN OF COMBUSTION CHAMBER IN OLDSMOBILE

Just what occurs when gasoline vapor is introduced into a cylinder combustion chamber, compressed and fired is a problem that has baffled automotive engineers. However, they have made progress in its solution with the resultant increase in power and smoothness of operation found in the better cars of today.

Study of the problem is comparable to the youthful researcher who, on July Fourth, holds a lighted firecracker in his hand "to see what will happen." Both the boy and the automotive engineer are dealing with something that operates practically instantaneously and with terrific force.

The principles of an internal combustion engine are well known. Vaporized gasoline is mixed with air, heated, and then drawn into the cylinder by the downward stroke of the piston. The upward piston stroke compresses the vapor and an electric spark explodes the mixture, the resulting explosion transmitting energy to the engine by means of the power stroke of the piston.

Engineers also know that increasing compression increases power, up to a certain point and then power is lost and "detonation," or what is commonly known as a carbon knock, results. Also they know that different curves in the combustion chamber influence the useful force of the explosion.

Having the two years that the new Oldsmobile was being designed, months of effort was expended to obtain best results in combustion. Oldsmobile engineers worked in co-operation with the engineering staff of the General Motors Corporation and had at their disposal the laboratories and the equipment of the corporation in solving this problem.

This co-operative effort resulted in a new design of combustion chamber which gives high compression performance without the use of special fuel. The compression ratio is 5 to 1 or approximately 98 pounds. The design further controls the explosion so that the rise of pressure within the chamber and cylinders is progressive and the pressure peak is more nearly continuous. This results in additional useful power per explosion.

Two distinctive features bring this desired result. One is the step-like profile of the chamber roof above the pistons and the other is the curves that form the four sides of each chamber. These factors govern the rate of expansion of the burning gas within the cylinders and bring about the advantages of high compression without "roughness" or detonation.



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8 SCIENTISTS DIE DURING YEAR IN HUMANITY FIGHT

NEW YORK.—(AP)—The names of at least eight men have been added during the last year to the list of "martyrs of science"—research workers who have given their lives in the quest for knowledge.

Dr. Hideyo Noguchi, bacteriologist with the Rockefeller foundation's West African yellow fever commission, was a victim of a disease whose organism he had succeeded in isolating. His passing recalled that Dr. Adrian Stokes, London pathologist, and R. Guillet, a French scientist, had succumbed to the fever a few months before while studying it in the same locality.

Records kept by the American Association for Medical Progress here show that five other men have given their lives for science in recent months. Dr. Alvaro Alvin, a Brazilian roentgenologist, died on May 21 as the result of his experiments with X-rays, which mutilate so many of the investigators who study them. Dr. Alvin had lost both hands.

Dr. Maxime Monart, French roentgenologist, died in Paris from the effects of similar researches. The death of George C. Williams, London radiologist, on April 19, was directly attributable to his studies, which had claimed one hand and part of the other. He had undergone 46 operations.

Dr. Alexander Bogdanov, a Russian, lost his life after transfusing the blood of a tubercular student to himself on the theory that he had found a way to build up a resistance to the disease. The student recovered, but the experiment was fatal to Bogdanov.

Another hero of science in the last year was Dr. S. Dawson Wilson, an English anesthetist. He had done special work on the physiology of anesthetized persons and was seeking a form of general anesthesia that would permit the patient to retain consciousness. He died last September while experimenting on himself.

"The passing of a scientist does not call for parades of brass bands," says Dr. Benjamin O. Gruenberg, managing director of the association. "There is nothing spectacular in the pursuit of elusive 'nerve.' There are no theatrical exhibitions of prowess before cheering multitudes. The heroic element is without display and without pose. A Noguchi accepts the risks along with the hardships and the successes as part of the day's work."

Scientific Notes

University of Chicago professors report successful treatment of seasickness by administering three to five grains of sodium nitrate every two hours. The chemical has a reducing effect on the blood pressure, thus diminishing the strain on the vestibule of the ear, which is thought to be the seat of the trouble.

Temperatures of more than 1300 degrees Fahrenheit are registered on a thermometer of fused quartz, employing gallium instead of mercury. The reason for these anomalies is that glass melts at a far lower temperature than those which the meter records and mercury would boil and explode the instrument.

A visible record of the action of the pulse for any desired period is obtained without discomfort to the subject or tedium to the observer with an electrical instrument developed in Germany. Levers at



The Racer

I use Champion Spark Plugs because I know I can depend on them—no matter how tough the going.

Champion is the better spark plug because it has an exclusive sili-manite insulator specially treated to withstand the much higher temperatures of the modern high-compression engine. Also a new patented solid copper gasket-seal that remains absolutely gas-tight under high compression. Special analysis electrodes which assure a fixed spark-gap under all driving conditions.



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Among the notables to attend the Beaux Arts ball is Mrs. Wills Hanna, garbed as a lady of the athen.

attached to the patient's wrist move with the pulse beats, causing an electrical circuit to be opened and closed.

Among the instruments an amateur astronomer in Los Angeles has used in making a relief model of the moon is a dentist's drill. It is helpful in carving out the small craters and other irregularities on the surface of the model which is fashioned of plaster of Paris. Photographs supplied by Mount Wilson observatory and data obtained through two high-powered telescopes of his own have been used by the astronomer in preparing the model.

Cherry sprays with lime sulfur solution insure the earliest produce and hence are dangerous.

MUSSOLINI'S NAME WITHDRAWN FROM NAT'L PRESS CLUB

WASHINGTON, June 2.—(AP)—The name of Benito Mussolini, premier of Italy, proposed last week for non-resident membership in the National Press club was withdrawn last night by the board of governors, following protest by members.

J. Fred Essary, president of the club, sent a telegram to Mussolini two weeks ago congratulating him upon his election as a non-resident member of the club and sending the best wishes of the fellow members.

The protest was signed by 25 members of the club who objected to Mussolini being a member because of his treatment of the press in Italy, and because, it was contended, the laws had been violated in notifying Mussolini of his selection.

2 MORE NEGROES IN SOUTH LYNCHED

ALEXANDRIA, La., June 2.—(AP) Two negroes were taken from officers by a mob near here today and shot to death.

The negroes were Lee and Dave Blackman, whom the officers were taking from the jail at Leesville to Shreveport to face trial. They were charged with killing Deputy Sheriff Frank Phillips, three weeks ago.

Phillips had gone to the negroes' home to arrest them on a charge of violating the prohibition law. The deputy was shot.

Lee and Dave Blackman were arrested in connection with the affair and today officers started with them for Shreveport when the mob appeared five miles from Bogalusa, and overpowered the officers.

Town Band Concluded DELRAY, Fla.—(AP) Women musicians members of the Delray Business and Professional Women's club, have organized a brass band and have just completed a series of municipal concerts for which the club received \$70 a concert.

Visit our Special Vacation Time Display

Learn how you can pay all or part of your vacation expenses. Everyone will find something of unusual interest in the vacation time display we have arranged in our showroom! But no matter what your plans are, vacations call for extra money. During Vacation Time Display, we have a way for you to earn all or part of your vacation expenses. Come in and learn about this special vacation time plan.

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5 Record Months THE GREATEST IN 20 YEARS OF WILLYS-OVERLAND HISTORY

MAY SALES SET NEW HIGH MARK

With May reaching a new high peak—Whippet and Willys-Knight sales continue to mount, month after month, week after week, day after day.

The five months just completed were by far the greatest in all Willys-Overland history. In spite of the fact that April had produced the greatest sales on record, May established a new mark with an increase of 14% above the previous record-breaking month.

The perfected Whippet Four, at greatly reduced prices, is a tremendous national success. The new Whippet Six

—the world's lowest price six-cylinder motor car—is paralleling the Whippet Four in popular acceptance.

The recently announced low price of the Willys-Knight Standard Six has resulted in greatly increased demand for this splendid car. Sales of the Special Six and the Great Six continue in unabated volume.

Come in and see the Willys-Knight and the Whippet Four and Six lines. And for early delivery it will pay you to place your order now.

WILLYS-KNIGHT DOUBLE SLEEVE VALVE SIX \$995 COACH. Standard Six Coupe \$1045, Sedan \$1095, Touring \$995, Roadster \$995. Special Six prices from \$1295 to \$1495. Great Six prices from \$1850 to \$2095.

PERFECTED Whippet \$535 COACH. Four-cylinder Touring \$455, Roadster (2-pass.) \$485, Roadster (with rumble seat) \$525, Coupe \$555, Cabriolet Coupe (with collapsible top) \$595, Sedan \$610. All prices f. o. b. Toledo factory and specifications subject to change without notice. Willys-Overland, Inc., Toledo, Ohio

The New Whippet Six 7 BEARING CRANKSHAFT \$695 COACH. Whippet Six Touring \$615, Roadster \$685, Sedan \$770, Coupe \$695. TREICHLER MOTORS, INC. 30 N. Holly—Tel. 615