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NORIS-ZUEND-LICHT, NURNBERG

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JOINT INTELLIGENCE OBJECTIVES AGENCY

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INTRODUCTION

Interview with:

Paul Harsch..... General Manager
Ninkel..... Engineer
Gottfried Focker..... Foreman & Superintendent

This concern manufactures a line of flywheel magnetos and small conventional generators for the German motorcycle trade. They also build single and two cylinder magnetos of the usual type. They are competitors of R. Bosch in a small way. Harsch is a former employee of Bosch.

There is nothing particularly new but it was considered worthy of investigation.

During the war they had a well equipped plant but moved their entire facilities to a vacant brewery on account of several air raids in their vicinity. It so happened that the plant they vacated was unharmed. The brewery they moved to was severely bombed even to the sub-cellar where they are now operating. They are now manufacturing under great difficulty.

This plant was extremely difficult to locate due to the wreckage surrounding it.

GENERATORS

Generator, type DL6/75 has an output of 75 watts maximum at 6 volts at 2800 Rpm. The cut-in speed is 1400 Rpm. A vibrating type of voltage regulator, and cut-out is contained inside the cover. It is principally used on Deutz tractor, both 1 and 2 cylinders. It weights 8.6 lbs. This same size generator can be made for 12 V operation. A sample was removed and forwarded to Washington.

MAGNETOS

Made for 1 and 2 cylinders, 2 or 4 cycle engines, with flange (2 hole) or base mounting, with or without impulse coupling, and with or without automatic device.

Housing is diecast aluminum with cast-in pole shoes. Pressed steel end plate is used at rear end to support the contact breaker and condenser. A cast zinc metal cover closes the top of the housing.

Magnet rotor is of Alni (not Alnico), and is mounted on Norma ball bearings, both size E15. Shaft is cast into aluminum end

plates. Sample and rotor removed and sent to Washington.

A tape wound coil consists of:
(a) Primary 325 turns 0.9 mm enamelled copper wire.
(b) Secondary 16,000 turns 0.07 mm enamelled copper wire.

Contact breaker lever is a stamping and has tungsten contacts It is pivoted on a steel pin and uses a bushing and follower of a bal lite material called TURBOX. Sample removed and forwarded to Washington.

Condenser is in metal can and consists of paper and aluminum foil elements. An automatic advance is mounted at end of rotor shaft and beyond the contact breaker. This however, does not interfere wit contact breaker adjustment. This advance device is of regular fly weight construction and reacts on the cam which is loose on rotor shaft. A 17° to 35° advance range between rotor and cam is available. Rate of advance is readily changed by relocating the pin holding the stationary end of the springs. The position of the plate holding the pin can also be changed. Thus the advanced rate specified can quickly be met without tearing down and reassembling. Sample removed and sent to Washington.

The impulse coupling is similar to the Bosch unit and is made by Noris under license from Bosch. It is fully automatic and can be arranged for regular lag angles.

The single culinder unit ZCal or ZFal has the cable holder connected directly to the high tension terminal of the coil.

The 2 cylinder unit ZCa2 or ZFa2 (Appendix "A") has a double slip ring (Appendix "B") mounted on the magnet rotor (Appendix "C"). One side of the slip ring having a one piece continuous brass insert is connected by means of a carbon brush to the high tension terminal of the coil. The other side of the slip ring has a brass insert which is connected internally to the solid ring and which delivers current alternately to carbon brushes located directly opposite each other, and which are brought out each side of the housing. Samples of ZCa2, i.e., 2 cylinder unit base mounting with automatic advance and ZFal, i.e., 1 cylinder unit flange mounting with automatic advance, and impulse coupling, were removed and forwarded to Washington. (Present production 300 per month).

Type SZ1 is a conventional fly wheel magneto for single cylinder engines only. (See Appendix "D").

A circular magnet of 7% cobalt is located on the inside periphery of an alumnum housing. Laminated pole shoes are held by screws to the inner diameter of the magnet. The cam is riveted to housing flange.

Breaker mechanism, coil, condensor, 4 pole pieces are fastened to the stationary back plate as previously described. This magneto has been made since 1932 and is primarily for Fichtel and SachsCo. and ILO. A sample type SZ1 was removed and forwarded to Washington.

Type MLZ is a combined DC generator and battery ignition unit for motorcycle of 250 cc or over, such as NSU, Triumph, Zundapp and Hercules. The generator has an output of 30 watts at 1800 Rpm and 50 watts maximum output at 2100 Rpm at 6 volts (See Appendices "E" and "F").

The armature is attached direct to the engine crankshaft. Four field coils in series are carried in a pressed steel housing. The cam for operating the contact breaker is formed on the inner end of the armature shaft.

A cutout and conventional vibrating current regulator is attached to the opposite side of a steel housing.

The high tension is also placed above the contact breaker and its condensor on this outer face of which are also held the commutator brushes for generator.

Contact breaker has a timing range of 30° and can be supplied with automatic advance device if required.

The coil draws 1 amp at 1000 Rpm. All literature of this unit was destroyed. A sample was removed and forwarded to Washington.

Type MLZS is an earlier model of MLZ. This had two high tension coils and contact breakers for battery ignition. A sample was removed and forwarded to Washington.

Type SM1 is a new design of magneto and has only been built experimentally. (See Appendix "C"). It is intended for the "Victoria" motorcycle. The magnet is of ALNICO. Not much information as to performance is available.

This concern did not make spark plugs as has been previously reported in other reports.

APPENDIX

One set of very dim prints (too old for reproduction or tracing) was forwarded to the Joint Intelligence Objectives Agency files. They may be located through Office of the Publications Board, Department of Commerce. They do not illustrate any important developments of improved products:

A - ZFa2, Magnets, mounting dimensions only.

B - ZG200/12, slip ring dimensions only.

C - ZG194/7z to 11z, magnet rotor dimensions only.

D - SZ -1, fly wheel magnets assembly.

E - MLZS (balance illegible), magnets-generator attachment dimensions only.

F - MLZ G/25/35 right and left, mounting method only.

G - SM-1, assembly of coil, breaker, and magnet only. Novel feature are magnets riveted to stamped wheel, and breaker under coil instead of opposite it.