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8 May 1945

ETO ORDNANCE TECHNICAL INTELLIGENCE REPORT)
)
NO. 269)

SUBJECT: German Streamlined Motorcycle

Observations by: Maj. C. D. Becker, Ord. Tech. Intell. Team No. 3

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1. GENERAL:

A German motorcycle recovered in the Third U. S. Army area is a complete deviation from all accepted design. It is novel in engine arrangement and suspension design. The three cylinder, air-cooled, rotary engine is mounted i inside the front wheel. The frame is of high tensile tubular steel construction and lends itself to complete streamlining.

2. DIMENSIONS:

Overall length	91 in.
Overall width	34-1/2 in.
Overall height	39 in.
Tire size	3.5 in. x 19 in.

3. ENGINE:

The engine is an integral unit mounted inside the front wheel (Photos 3 and 5) On the left side of the hub, the carburetor, which does not revolve with the engine, apparently takes in air through an air cleaner (air cleaner missing). Gasoline is fed to the carburetor through either one of two lines from the gasoline tank which is in the standard position for motorcycles. Engine lubrication is accomplished by mixing oil with the gasoline. A six volt ignition is used, carrying the ignition coil inside the headlight bracket and the condenser and points inside the carburetor housing. The points are broken by a cam which revolves with the motor. Spark setting is advanced automatically at higher speeds by increased centrifugal force. The battery is mounted under the driver's seat. Exhaust pipes are curved toward the periphery of the wheel and exhaust inside the aluminium combination flywheel, fan, wheel support, and engine track (Photo 5). This unit, doing a four-fold job, is connected to the engine by a multiple disc, dry plate clutch (Photos 5 and 6). A two-speed transmission is contained inside the hub of the wheel and is controlled by a foot pedal.

4. CONTROLS:

The right handlebar grip controls the throttle adjustment while the left handlebar grip acts as a high speed adjustment for the carburetor.

The clutch is operated by a lever at the left handlebar grip and a foot pedal on the right serves as a gear selector for the transmission.

A lever at the right handlebar grip and a foot pedal on the left side control a brake on the rear wheel.

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5. SUSPENSION AND FRAME:

The front wheel is held in position by a steering fork, each side of the fork having a shock absorber mounted on it. The carburetor and clutch housings hold the fork to the wheel - engine unit (Photos 1, 2, 4 and 6). The top of the fork is held to the main section of the motorcycle frame by a king pin which also serves as a steering pivot point. The main frame member curves downward and to the rear. The rear wheel fork is built as a right angle member pivoted at the junction of the two arms to the rear of the frame. The horizontal arm, to the rear, holds the wheel while the vertical arm is fastened to one end of a shock absorber. The other end of the shock absorber is fastened to the main frame member just in back of the king pin. The battery and junction box are carried inside the triangle formed by main frame member, shock absorber and vertical arm of rear wheel fork.

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The seat is mounted on a quarter-elliptical spring to rear of the gasoline tank.

The entire framework is covered with sheet metal to give the appearance of a well streamlined vehicle.

6. COMMENTS:

Although this motorcycle has many novel features of design and construction it is not believed to be practical because:

a. Too many concentric shafts are required in front axle, resulting in considerable torque and strain being carried by the necessarily small shafts.

b. Any engine seizure on a front drive motorcycle would prove disastrous to the rider.

c. The engine is subjected to all road shock as the tire is the only cushion between the engine and the road surface.

FOR THE CHIEF ORDNANCE OFFICER:

Incl.: Photos 1 thru 6.

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Photo No. 1
Right side

Photo No. 2
Left side. Note attachment of front fork to carburetor housing.

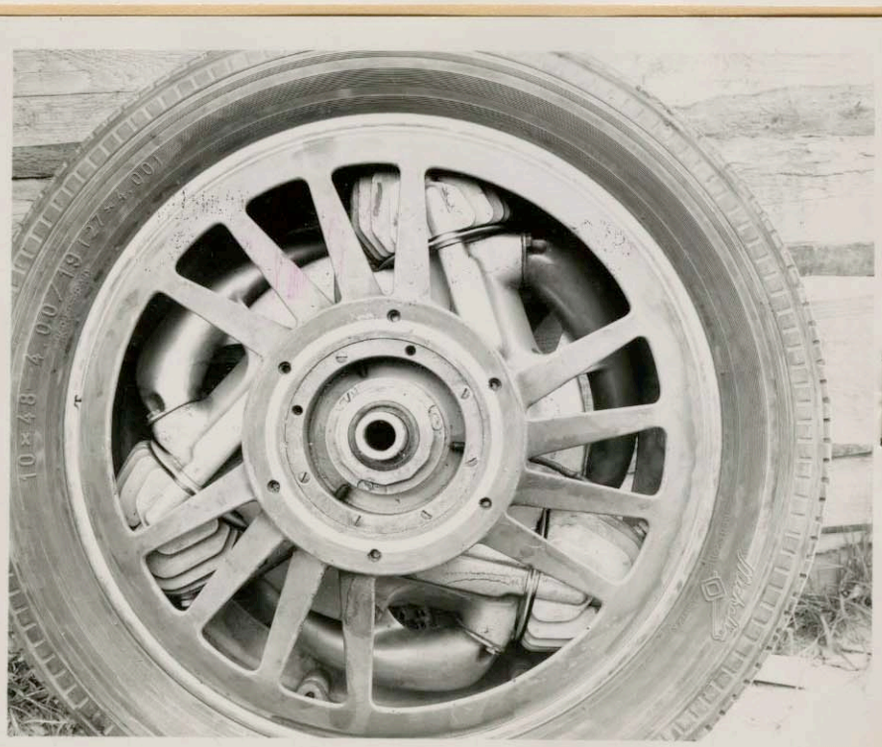

Photo No. 3
Carburetor left side of engine. Carburetor has been removed.

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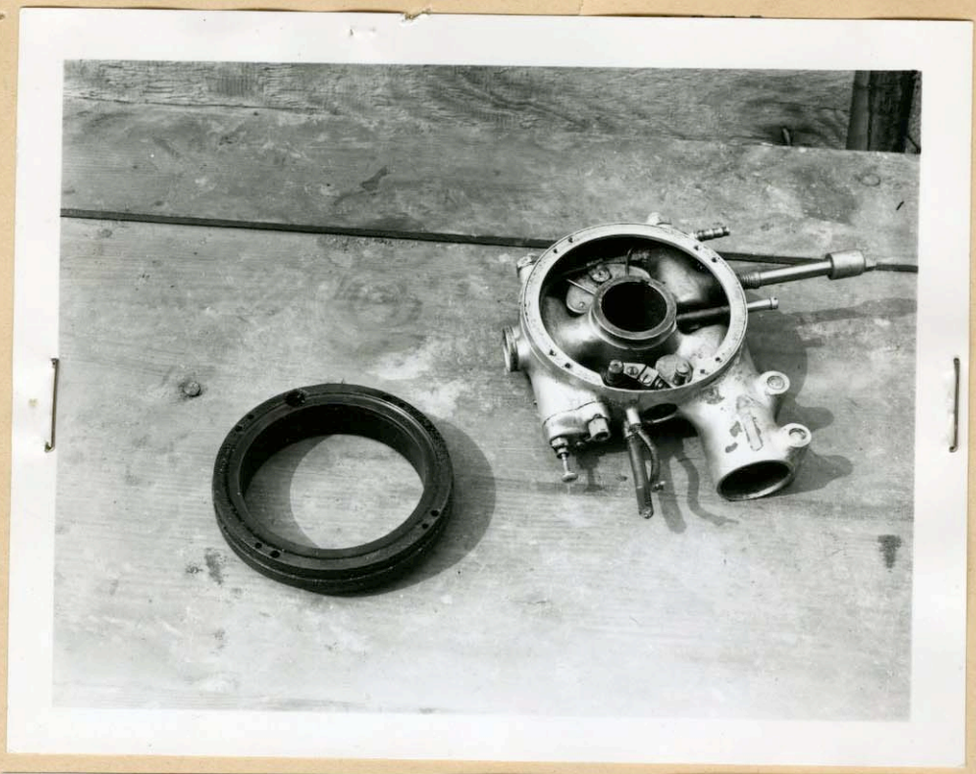

Photo No. 4
Carburetor. Note clamp for attaching to front fork.

Photo No. 5
Clutch (right) side of engine.

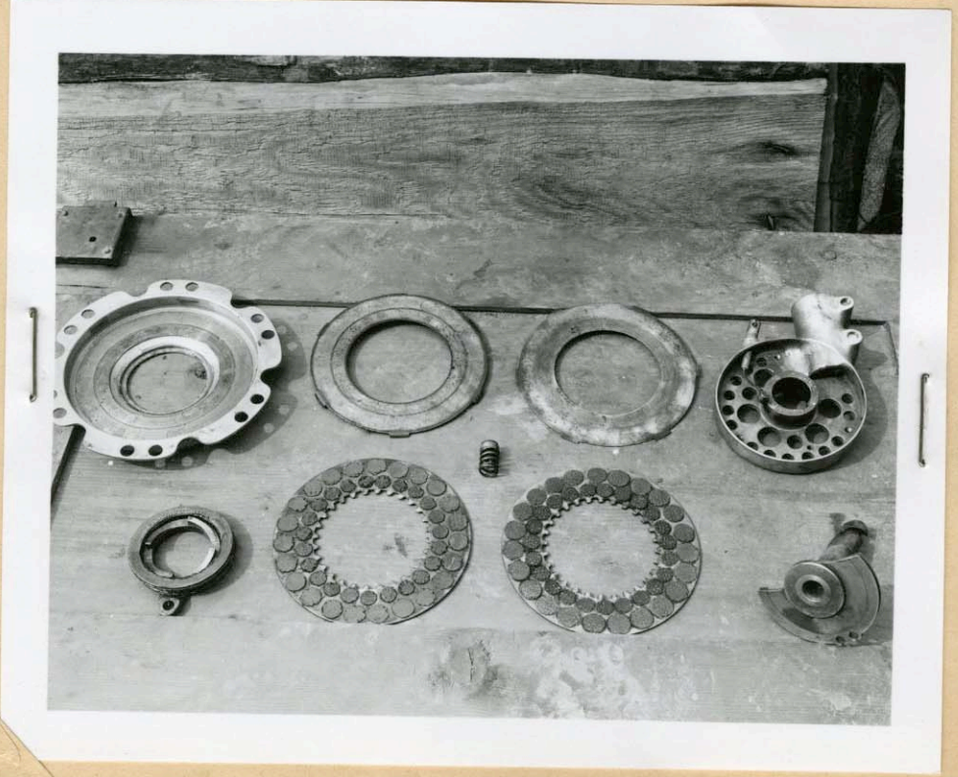

Photo No. 6
Clutch disassembled. Clamp on housing at upper right attached to front fork.