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AR INTELLIGENCE INFORMATION REPORT

1. Modification of Schmutzerling Ground Control Station:

In the original model, both control cylinders (one for elevation, the other for azimuth control) were mounted solidly on a common shaft and thus rotated at the same speed. In the modified version, these cylinders were mounted on individual shafts and were geared to operate at different rates, thus creating one frequency for elevation and one for azimuth control.

The gears for this modification were designed by Mr. 1947, but were not actually constructed.

2. Large Water Canal:

The water canal which was designed about 1947 by Mr. Sosnovsky and which was built in 1948 on the island and was assembled in a specially designed building in May 1949 (see Figure 2). Damage sustained during the transfer was repaired and the plans for the water canal were finalized.

The canal was filled with water and used for hydroelectric power generation. For higher water heads, other methods were considered. Actual experiments were not conducted in the large water canal until June 1949. After the filling (Figure 3) was completed and water was admitted, a 9 kW electric motor driven centrifugal pump was installed to operate the canal. Later a gate-valve was installed at the end of the experimental area in order to increase the high-pressure water flow and to build up the water level. A large wooden basket was placed in the reservoir and floated in front of the reed miller (a device which smoothed the flow of water in one direction), in order to reduce the waves in the reservoir and to avoid the formation of waves in the water stream.

Optical scales which ran along the canal's side walls served as a gauge for the water level, the scale, and the support for the motion picture camera.

An adjustable overflow tube was installed behind the reed miller for quick readjustments and control of the water level. A manometer for reading the water pressure was placed on the front canal wall. (See Figure 1 for details of this tube).

The electrical power for the operation of all laboratory equipment on the island was supplied by three or four rather antiquated 200 volt diesel-driven generators. These same generators also supplied the entire residential area. This necessitated the restriction of private use of electrical power during the day to ensure a reasonable supply for the laboratories. Even so, the voltage regulation was quite poor and variable. That operation of the water canal was always difficult. Deviations in the current supply resulted in known water pump action, which in turn lowered or raised the water level and velocity in the canal at a greater rate than the overflow valve could compensate for.

This canal was dismantled about August 1949 and was removed from the island, presumably to Moscow.

3. Experiments in the Large Water Canal:

The large water canal had been built...
Schmetterling Steering Unit (External View)

- Original Unit
  - Elevation
  - Azimuth axis
  - Control stick
  - Azimuth regulator
  - Elevation regulator
  - Cylinders with cam lifters
  - Both cylinders turn at same RPM
  - Gears

- Modified Unit
  - Cylinders turn at different RPM
  - Motor
  - Gears
  - Cylinders with cam lifters
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For operation with level nosed, but the first experiments showed that the length of the model (approximately 3') caused a boundary layer which made exact measurements impossible. Such was the case for only two possible with the interruption of the test.

The first experiments were to determine the characteristics of air and drag on a model at various angles of attack and at different wind speeds. Later comparison measurements were made by means of a similar and wind tunnel.

At the same time, measurements were made on various configurations (see Figure 2), also on the effect of wind tunnel, 25% converging, and 50% converging according to influence on the wind tunnel. (Note: Figure 2) is a model that published a book on aerodynamics, containing a section devoted to the discussion of various configurations for wind tunnels. The diagram makes clear that the model and the wind tunnel are a configuration in their experiments. They then listed a series of experiments with various angles of attack at various wind speeds (see Figure 7). Also employed in the wind tunnel for experiments on a cross high pressure injector for the wind tunnel. (see Figure 7).

Occasionally experiments were made for wind tunnel, projects which were more closely defined in the wind tunnel, for example, the use of a wind tunnel model (see Figure 2), designed to avoid distortion of the low pressure area immediately behind the model. This distortion had previously been produced by a shock wave from the wind tunnel, therefore, this was a measure taken to reduce this condition.

Another series of experiments (see 13, note 16) was devoted to the calculation of critical Mach numbers by various lift functions of models of wind tunnel experiments. A description of this series of experiments is important which were started from the end of 1926 through the period of 1930 for the present and future studies.

Under direction from Berlin (187 34), a series of experiments was conducted on various configurations of wind tunnels. (see Figure 13). Measurements were made at angles of attack of 10°, 15°, 20°, 25°, 30°, 35°, 40°, 45°, 50°, 55°, and 60° and at various wind speeds.

Further, a student from Berlin, carried out a series of experiments on models with interchangeable nacelles, side sections and pieces of various lengths. (see Figure 12). These experiments were recorded photographically and the film was given to London.

b. Shock wave experiments. Experiments were made on the speed and expansion of shock waves with various wind tunnel models. These were conducted in the wind tunnel, however, the model was not at the same time distorted by a tunnel. A description of this series of shock wave experiments, which was conducted from the end of 1932.

A. Figure 12 shows the arrangement of the wind tunnel and associated equipment during a typical experiment.

b. Figure 12 shows details of the model tested. These models were made of sheet aluminum, low thickness, relatively smooth and smoothly finished to exact measurements.

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WITH PARALLEL ENTRY

WITH CONICAL ENTRY

DEdiffuser

ABRAMOVICH DIFFUSER
FOR CURVED SHOCK WAVE ENTRY

SEE TEXT
1) EXPERIMENT ON A MODEL MOUNT FOR THE WIND TUNNEL

2) EXAMINATION OF THE AIRSTREAM AT THE QUICK CLOSING VALVE FOR THE WIND TUNNEL (EXPERIMENTAL LAY-OUT)
SECRET

Experimental layout for the measurement of shockwaves in the large water canal

Figure 13
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The speed and type of the shock waves. This data was then turned over to the
Air Intelligence Department and Service does not know if it was utilized.

Multiple "camera" type dials were placed in the drum to allow for optical
processing of the image. The x-ray was taken on the drum, while
various angles were taken on the analyzer, with no such angles on

7. Design and Construction of the new reporting systems

The second portion consisted of the actual testing of the system which was
wedged together, both the upper and lower walls were constructed in the
same manner and joined by mastic, small metal screens were cut out of the

The injector head was drilled with an unknown number of holes in a circular
pattern, these holes were at definite angular position to each other. The fuel and
air mixture was injected into these holes in an angular form.

The combustion chamber was cylindrical in shape and therefore, offered no
difficulties in combustion. It was not on flange walls.

No. 3: Experi Omar Clemons and September 25th. When received in order to
build a more durable system, and for the transmission of high

The main difficulty in construction areas in the fabrication of the clutch
elements. These elements consisted of a motor and motor washers of twelve

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For the final construction, eleven strain gauges were used in measurements and the sheet metal (0.025 in. x 0.312 in.), a new material, was used. The layer of glass was made to curve continuously in a single strip and an insulator between the two layers. As a result, the strain gauges were numbered and the insulation between the two layers was made only suitable. As a result, the strain gauge was made to curve continuously in a single strip and the insulation between the two layers was made only suitable. After a lengthy series of experiments, a satisfactory solution was found. The 0.025 in. thick strip was cut into small pieces, each 0.062 in. wide and 0.062 in. high. These were then arranged in a grid and bonded under slight pressure for 90 minutes at 120°C. Then they were dried out at room temperature, one hour at 180°C, and 24 hours at room temperature. This was repeated at 120°C and 24 hours at room temperature. The sheet metal was then covered with a thin film of glass and the two layers were bonded together. The strain gauge was then attached to the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

When assembled, the twelve strain gauges were fitted into the support and metal housing. This housing was placed in a jig and bonded under slight pressure for 90 minutes at 120°C. When this process was completed, the strain gauges were covered with a thin film of glass and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

The strain gauge was then placed on the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

It was planned that the strain gauge would be placed on a metal strip, but would instead consist of a metal strip where the components were attached at the rear of the strain gauge. The strain gauge was then covered with a thin film of glass and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

The strain gauge was then placed on the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

As the project was completed, the data was returned to the USA at this point in the work.

1. For strain gauge wiring, the 'in-out' terminals were connected to the strain gauge and the strain gauge was connected to the electrical system. The design for this was made by Dr. and Mr. in this condition. The strain gauge was then placed on the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

2. For strain gauge wiring, the 'in-out' terminals were connected to the strain gauge and the strain gauge was connected to the electrical system. The design for this was made by Dr. and Mr. in this condition. The strain gauge was then placed on the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.

3. For strain gauge wiring, the 'in-out' terminals were connected to the strain gauge and the strain gauge was connected to the electrical system. The design for this was made by Dr. and Mr. in this condition. The strain gauge was then placed on the metal strip and the insulation was made. To obviate this condition, the strain gauges were covered with a thin film of glass.
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