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SECURITY INFORMATION
CENTRAL INTELLIGENCE AGENCY



INFORMATION REPORT

CD NO.

COUNTRY East Germany

DATE DISTR. 20 October 1952

SUBJECT Zeiss Production of Schlieren Devices

NO. OF PAGES 2 25X1



NO. OF ENCLS.
(LISTED BELOW)

SUPPLEMENT TO REPORT NO. 25X1



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1. VEB Carl Zeiss, Jena, has produced four large Schlieren devices and delivered them to the Russians. The last one of these four was delivered in October 1951. All four were delivered to the Berliner Technisches Büro (BTB) in Berlin-Adlershof, formerly part of SAG Avtovelo, but now affiliated with SAG Transmasch. BTB shipped three of the devices to Russia; one has remained with BTB.
2. All four instruments delivered to BTB were of the same type. They have a total length of seven to eight meters; a measurement opening (Messöffnung) of 30 centimeters and a measurement distance (Messtrecke) of 80 to 100 centimeters. All were constructed for horizontal use only.
3. In February 1952, BTB ordered for the Russians four more Schlieren devices from Zeiss. Two of these are to be of exactly the same type as those delivered previously. The other two are to be constructed for vertical use, so that combustion processes in a glass cylinder can be studied. It was specified that construction of the device should allow the investigation of the combustion processes in the direction of the cylinder axis. Zeiss accepted this order and has constructed the necessary optical systems. The Russian order calls for delivery of the first instrument on 1 December 1952, the others by 1 May 1953. Zeiss will only be able to comply with these delivery terms if it gets so-called compur and compound shutters from the Deckel firm in Munich. These shutters are provided with pneumatic pumps to achieve exposures of one twelve hundredth of a second and slower. Deckel delivered the shutters for the four devices previously produced by Zeiss for the Russians.
4. The Russian request for construction of two of the devices for vertical use raised some difficulties. These result from the fact that the cylinder walls will distort a picture of the combustion. Dr. Carl August Somefeldt of the Tele-scopic Department of Zeiss, who returned from Russia in the fall of 1951, overcame the problem by building a special glass cylinder whose bottom (Kolben) is used as a mirror and in which two cylinder-lenses with non-coincident foci (Afokale Zylinderlinsen) are attached. The result is a field of vision covering two-thirds of the cylinder diameter without distortion.
5. Zeiss set the price of the new Schlieren devices at approximately 170,000 DM East each. A device in the earlier delivery was sold for 138,000 DM East.

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6. In addition to the above-mentioned large type Schlieren device, Zeiss developed in 1951 a smaller instrument; this was not ordered by the Russians. Zeiss intends to put it on the market in 1953. The instrument's measurement opening is eight to ten centimeters; its measurement distance varies from 2 to 15 centimeters. The light source is interchangeable; mercury lamps, nitra lamps and carbon electrodes can be used with the same device. Ten of them are being built for completion in 1953.

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