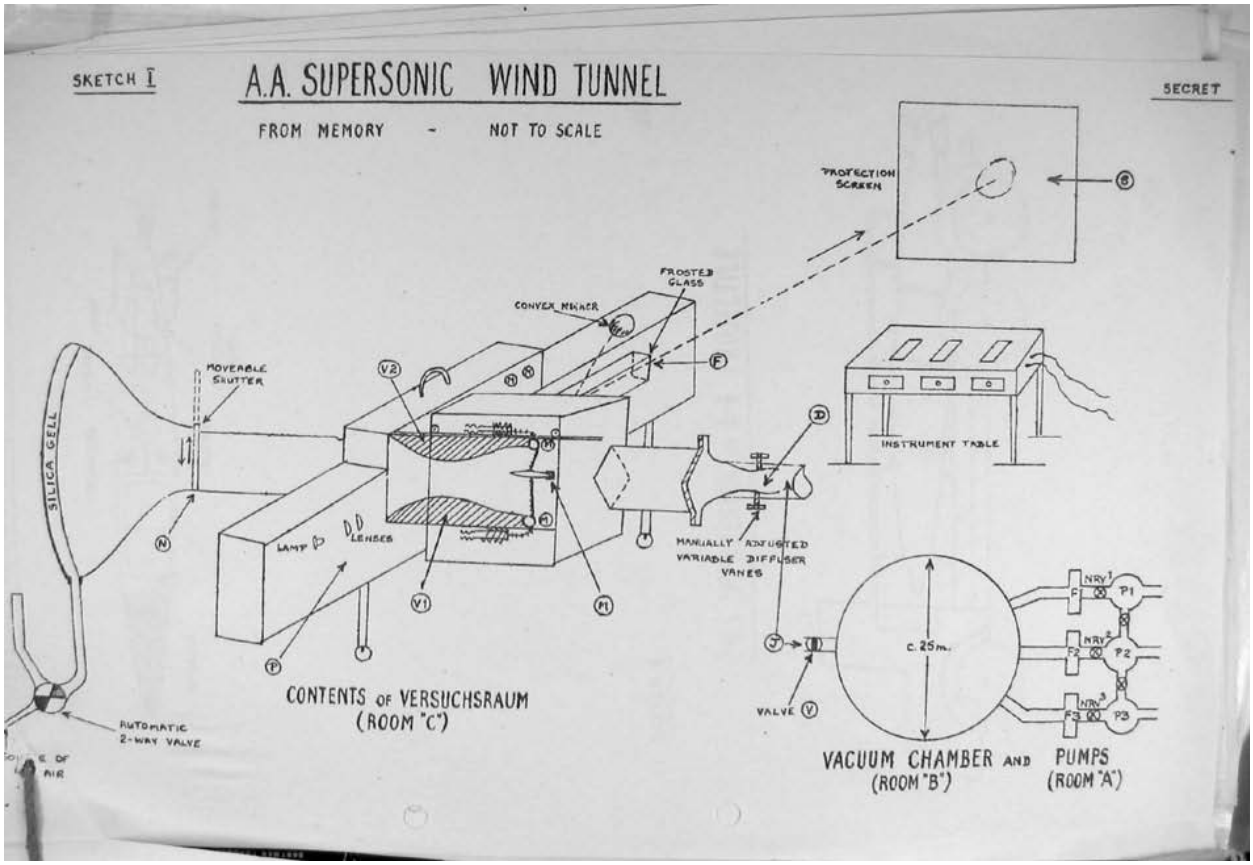
German Wind Tunnel History

We have exchanged messages last summer about the Peenemunde Wind Tunnels.
In 2007 at Public Records London I came across these documents, they came from 1945. I thought you might like to see these.

As I mentioned before, I went to Peenemunde last October, on the way to Peenemunde I went to the Technical Museum Berlin and was surprised to see an original V2 wind tunnel model. I have attached a few photos I took. Someday in history this model was in your wind tunnel.

Ed Straten, The Netherlands




Windkanalmodell Aggregat 4 (V2)
Heeresversuchsanstalt Peenemünde
Deutschland, um 1940
Im ersten Hochgeschwindigkeits-Windkanal der Welt untersuchten die Raketenforscher in Peenemünde das Verhalten von Flugkörpern bei Überschallgeschwindigkeit. Diese wurde von den Flugkörpern in Peenemünde erstmals erreicht.

SECRET.

Key to Sketch I.

SUPERSONIC WIND TUNNEL.

The department is contained in three separate rooms, the machine room (A), the vacuum chamber (B) and the test room (C).

ROOM (A).

This contains three pumps, each driven by a 500 kilowatt motor, which are used to extract the air from the vacuum chamber. Between each pump and the chamber itself is a filter (F1, F2 and F3 on the diagram), and a non-return valve (NRV1, NRV2 and NRV3).

The three pumps can be used either in parallel or by means of a system of valves so that two are in parallel and the third in series to the other two.

Power for the pumps is obtained either from a Diesel generating set belonging to the unit, or from overland supply lines. The current used is 500 volt A.C.

ROOM (B).

Contains the vacuum chamber, which is a rivetted steel sphere, the walls of which are at least 2 cm. thick, and the overall diameter about 25 metres. From Room (B) a connecting pipe (J) is led to the wind tunnel in Room (C).

ROOM (C).

The test room is about 10 or 12 metres long and some 20 to 25 metres wide, and contains the actual wind tunnel, together with a device (P) for projecting an image of the model being tested in the tunnel either on to a screen (S), or on to a frosted glass panel (F).

The model (M) is suspended in a rectangular box, the sides of which, consisting of double glass sheets, are removable for the purpose of adjustment. It is held between two metal grips connected to a tension measuring device known as a "Three-Component Balance" ("Dreikomponentenwage"). This system is known as the "Wattonsche Brücke" (Watton's Bridge) and the forces acting upon the model are resolved into a varying magnetic field, which in turn influences the track of a recording needle on a rotating drum.

The air flow through the tunnel, depending in the first case upon the extent of the vacuum created in the vacuum chamber, is induced by opening a movable shutter (N), and a valve (V) at the outlet of the vacuum chamber. Further changes in velocity and in local pressure can be effected by altering the venturi guides (V1 and V2) in the test box itself. An additional control over air flow can be obtained through manually adjusted variable diffuser vanes (D) placed between the test box and the vacuum chamber.

The spring mountings on which the model is suspended are subject to control, so that stability tests may be carried out at angles other than the normal to the air flow.

The exit pipe from the test box is of square section, each side being about 60 cm., and this is joined by a flanged connection to a round pipe of smaller bore, in which are the diffuser vanes (D).

The air inlet to the system takes the form of a funnel-shaped

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