

VKI0008907

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SOME CONTRIBUTIONS TO THE MEETING

ON

MEASURING TECHNIQUES IN TRANSONIC AND SUPERSONIC
CASCADE FLOW

HELD AT

O.N.E.R.A., Châtillon-sous-Bagneux, France

January 17-18, 1974

CONTRIBUTIONS BY :

GIBSON
GOUTINES
KIOCK
~~PATEL~~
SIEVERDING

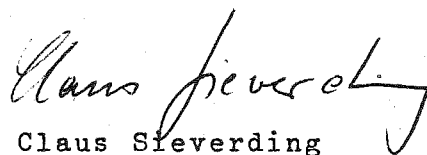
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FORWORD :

The third meeting on "MEASURING TECHNIQUES IN TRANSONIC AND SUPERSONIC CASCADE FLOW" took place on the 17 and 18 January, 1974, at the O.N.E.R.A., Châtillon-sous-Bagneux, France. In spite of the very late announcement of the meeting, Monsieur Contensou, Directeur de l'O.N.E.R.A. and host of this 3rd meeting could welcome 30 participants, a number which indicates the vivid interest in the subject. Out of this group 12 participants presented in total 17 contributions (see programme).

For the first time it was proposed to distribute, for the better benefit of the participants, printed notes on some of the material. In order to save the unofficial character of these round table discussions the notes for distribution are provided on a volunteer basis by the contributors and the distribution is limited to the participants. This volume contains the contributions dealing specially with probe designs, probe calibrations and probe blockage effects.

The next meeting will take place in 1975 at Lausanne, Switzerland. Professor Suter, Head of the "INSTITUT DE THERMIQUE APPLIQUEE" of the "ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE" has accepted to be our host. The main subject will be the application of "ADVANCED OPTICAL MEASURING TECHNIQUES" to cascade testing. However, contributions on further developments in the use of pressure probes for transonic and supersonic cascade flow or other significant topics in the domain of high speed cascade testing are welcomed.


Claus Sieverding

Rhode-St-Genève
May 10, 1974.

Assistant Professor
von Karman Institute

MEASURING TECHNIQUES IN TRANSONIC
AND SUPERSONIC CASCADE FLOW

(Round Table Discussion)

DATE : 17-18 January 1974

PLACE : ONERA (Conference room HUREAU), Châtillon

Thursday 17 January 1974

09.30	Welcome address	Prof. P. Carrière (ONERA)
09.45	Opening of session Chairman : Prof. J. Chauvin	(VKI)
	- Design and characteristics of 4 different types of probes for the use in transonic and supersonic cascade flow	Sieverding (VKI)
	- Static probe calibration in supersonic flow	Gibson (Parsons)
	- Description of a probe for measurements of two-dimensional wake flow quantities	Kiock (DFVLR-Braunschweig)
	- Investigation of the blockage effect of a probe downstream of a cascade at transonic outlet Mach numbers	Patel (Westinghouse)
	- Comparison of two static pressure probes (blockage effect)	Gautines (SNECMA)
	- Probes used in the CETIM Gas Turbine Laboratory	Pluiose (CETIM)
	Break at 11.00 hrs.	
13.15-14.45	Lunch	

- 14.45
- Tentative explanation of the difference between measured and calculated blade velocity distributions with the help of Schlieren pictures Heinemann (DFVLR-AVA)
 - Use of a holographic-interferometric system Patel (Westinghouse)
 - High deflection turbine cascade (film) Lawaczeck (DFVLR-AVA)
 - Study of the downstream periodicity of a cascade in a water-table (film) Paulon (ONERA)
 - Experiences with different cascade outlet geometries for transonic turbine cascades Sieverding (VKI)
 - Some remarks on the position of the downstream traversing plane in compressible cascade tests Schimming (DFVLR-Porz-Wahn)

Break at 16.30 hrs.

18.00 End of session

Friday 18 January 1974

- 09.30
- Opening of the session
Chairman : Mr. J. Fabri (ONERA)
 - Flow instabilities in a supersonic annular cascade Paulon (ONERA)
 - Inlet flow periodicity problems in compressible cascade tests Lichtfuss (DFVLR-Porz-Wahn)
 - Reduction of the secondary flow phenomena in cascades by the control of the side wall boundary layers Meauze (ONERA)
 - Use of blowing at the outlet of a cascade Pluviouse (CETIM)
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- On-line data acquisition
system for cascade testing

Patel
(Westinghouse)

Break at 11.00 hrs

13.15-14.45	Lunch
14.45-17.00	Visit of the laboratories of the Division Energétique at Palaiseau
17.00-18.00	Closing session at Châtillon

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