

# **The Wall Pressure Spectrum of High Reynolds Number Rough-Wall Turbulent Boundary Layers**

Jonathan Bradley Forest

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in  
partial fulfillment of the requirements for the degree of

Master of Science  
in  
Aerospace Engineering

William J. Devenport

Kevin T. Lowe

Joseph A. Schetz

Jason M. Anderson

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Blacksburg, Virginia

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## Permissions to Use Figures and Photographs

### Figure 2.1 - Schematic of Virginia Tech Stability Wind Tunnel.

Figure adapted from facility website, courtesy of AOE department:

<http://www.aoe.vt.edu/research/facilities/stabilitytunnel/description-stabilitytunnel.html>

### Figure 2.2 - Schematic of Virginia Tech Stability Wind Tunnel, anechoic test section.

Figure adapted from Figure 1 in:

Devenport, W. J., R. Burdisso, A. Borgoltz, R. Patricio, and M. Barone. "Aerodynamic and Acoustic Corrections for a Kevlar-Walled Anechoic Wind Tunnel." 16th AIAA/CEAS Aeroacoustics Conference. Stockholm, Sweden, June 7-9, 2010. AIAA-2010-3749.

### **Written permission documentation**

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*Subject: RE: ETD permissions*

*From: William Devenport <devenport@vt.edu>*

*Date: 2/17/2012 2:45 PM*

*To: Jonathan Forest <jforest@vt.edu>*

Jon,

I give you my written permission to use altered versions of the figures below.

William

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William J. Devenport,  
Professor and Director of the Virginia Tech Stability Wind Tunnel,  
Assistant Department Head for Facilities,  
Department of Aerospace and Ocean Engineering, Virginia Tech,  
215 Randolph Hall,  
Blacksburg VA 24061-0203  
Tel: (540) 231 4456. Fax: (540) 231 9632.  
Email: [devenport@vt.edu](mailto:devenport@vt.edu)

-----Original Message-----

From: Jonathan Forest [<mailto:jforest@vt.edu>]

Sent: Friday, February 17, 2012 1:58 PM

To: William Devenport

Subject: ETD permissions

Dr. Devenport,

May I have written permission to use altered versions of the following figures in my thesis?

- Stability Tunnel Schematic from

<http://www.aoe.vt.edu/research/facilities/stabilitytunnel/description-stabilitytunnel.html>

- Acoustic test section schematic from Figure 1 in Devenport, W. J., R. Burdisso, A. Borgoltz, R. Patricio, and M. Barone. "Aerodynamic and Acoustic Corrections for a Kevlar-Walled Anechoic Wind Tunnel." 16th AIAA/CEAS Aeroacoustics Conference. Stockholm, Sweden, June 7-9, 2010. AIAA-2010-3749.

Thanks,

Jon

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**Figure 2.9 - Stability Wind Tunnel Traverse System.**  
Photograph taken by Mike Morton (2011).

***Written permission documentation***

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*Subject: RE: ETD permissions*  
*From: Michael Morton <michael.morton87@gmail.com>*  
*Date: 2/17/2012 1:55 PM*  
*To: Jonathan Forest <jforest@vt.edu>*

Jon,

Yes, you may use the photograph of the traverse system from the Feb/March tunnel entry in your thesis.

-Mike

On Fri, Feb 17, 2012 at 1:52 PM, Jonathan Forest <jforest@vt.edu> wrote:

Mike,

May I have written permission to use the photograph you took of the traverse system from the Feb/March tunnel entry in my thesis?

Thanks,  
Jon

--

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Jonathan Forest  
Advanced Turbulent Flow Research Group  
Department of Aerospace & Ocean Engineering  
Virginia Polytechnic Institute and State University  
219 Femoyer Hall  
Blacksburg, VA, 24061  
Lab7: (540) 231-3529. 219 Femoyer: (540) 231-3206.  
Email: jforest@vt.edu

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Michael Morton  
Virginia Tech  
Aerospace and Ocean Engineering  
michael.morton87@gmail.com  
(302) 220 - 0849

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**Figure 2.18** - Microphone sleeves embedded in smooth test plate.  
Photograph taken by Manuj Awasthi (2011).

***Written permission documentation***

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*Subject: RE: ETD permissions*  
*From: Manuj Awasthi <vtmanuj@gmail.com>*  
*Date: 2/17/2012 2:59 PM*  
*To: Jonathan Forest <jforest@vt.edu>*

Jon,

Sure, you have my permission to use the photographs of the wall plugs I took during the Feb/March tunnel entry for your thesis.

-Manuj

On Fri, Feb 17, 2012 at 1:52 PM, Jonathan Forest <jforest@vt.edu> wrote:

Manuj,

May I have written permission to use the photograph you took of the wall plugs from the Feb/March tunnel entry in my thesis?

Thanks,  
Jon

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Jonathan Forest  
Advanced Turbulent Flow Research Group  
Department of Aerospace & Ocean Engineering  
Virginia Polytechnic Institute and State University  
219 Femoyer Hall  
Blacksburg, VA, 24061  
Lab7: (540) 231-3529. 219 Femoyer: (540) 231-3206.  
Email: jforest@vt.edu

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