



Newsletter



An example of early Full-Scale Measurements at Silsoe Research Institute
Photograph courtesy of Roger Hoxey

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❖ Ramblings

Welcome to the first WES newsletter of 2005 and many thanks to those of you who have contributed. The newsletter contains the usual Snippets of wind related news stories from around the world which again have been compiled by Ms Sarah Jordan. The debate over the WES conference continues and has resulted in numerous letters (2!) being sent to the editor. I am pleased that this has happened since not only does it encourage debate but it proves that at least two people actually bother to read the newsletter. I am always short of copy, so please send any wind related news, no matter how small to the addresses below.

Mark Sterling

❖ Snippets

- **Large eddies and hurricane intensity predictions.** The maximum wind velocity in very strong hurricanes is being under-predicted by the combined Geophysical Fluid Dynamics Laboratory/University of Rhode Island coupled hurricane-ocean model. This model is being refined by considering the effects of large eddies near the ocean surface, and how the ocean and atmosphere interact. (<http://www.physorg.com/news2614.html>)
- **Largest wind monitoring station.** China is prone to dust and sand storms and has recently launched an open-air monitoring station for wind and sand in Ningxia Hui Autonomous Region in the northwest. The site is two square kilometres and the largest of its kind in the world. (<http://www.sunnetwork.org/news/science/science.asp?id=5831>)
- **Tornado strikes.** On New Year's Day a tornado caused damage at Lymm, near Warrington. Roofs were blown off, a children's climbing frame was hurled about fifty yards, and an eighty foot high oak tree which was over a hundred years old was uprooted. (http://www.manchesteronline.co.uk/news/s/141/141772_children_dodge_death_as_tornado_strikes.html)
- **Kite power.** High-altitude kites are being developed by a team at Delft Technical University in the Netherlands to generate clean energy. A chain of wing-like kites on a looped chain is called a 'laddermill', and will be at a height of more than five miles into the sky. The laddermill will rotate due to the wind forces acting on the kites, and in turn will drive a power generator. (<http://news.scotsman.com/latest.cfm?id=3905763>)
- **Air pollution at port.** The Advanced Maritime Emission Control System has been developed to reduce the air pollution from ships docked at the Port of Long Beach, California. Diesel exhaust would be captured by a hood over the smokestacks then passed into a tank where 'wet scrubbing' would remove pollutants. The system may reduce NO_x, SO₂ and particulate emissions by 90% or more. (<http://www.enn.com/biz.html?id=139>)
- **Dusty David.** The cleaning of Michelangelo's David was completed in May, but there is the continued problem of dirt being brought in on the clothes and shoes of visitors. Solutions to this problem are being considered and include having a continuous gust of air around the statue, and having visitors pass through an aerated corridor. (<http://www.nbc4.tv/news/4044360/detail.html>)
- **Harmattan wind troubles Nigeria.** A thick cloud of dust disrupted flights to and from Nigerian airports in January. The seasonal wind, called the Harmattan, blows dust clouds from the Sahel semi-desert across Nigeria to the coast every year between December and April. (http://www.mg.co.za/articlepage.aspx?area=breaking_news/breaking_news__af_rica&articleid=194987)
- **Airborne dust in livestock housing.** An electronic system is to be used to reduce airborne dust in livestock housing. Bailey Mitchell, an engineer at the Agricultural Research Service in the US, developed the system which uses an electronic charge to trap airborne microbes and



particles. The charged airborne dust becomes attached to the floor.
<http://www.farminglife.com/story/4556/1/>

- **Low drag trucks.** Developments made at the Georgia Institute of Technology could increase the fuel economy of trucks by 11-12%. Aerodynamic improvements include the rounding of aft trailers and the installation of fairings. A flow control technique involves air being blown from slots at the rear of the trailer. Control of the trailer in crosswinds could be improved by differential blowing. (<http://www.physorg.com/news2561.html>)
- **Burning tree hits passenger train.** Rail passengers had to be evacuated when high winds caused a tree to fall, hit overhead power lines, catch fire and fall on a train on the outskirts of Birmingham. (http://news.bbc.co.uk/1/hi/england/west_midlands/4191847.stm)
- **The show must not go on.** High winds severely damaged the roof of the Forum Theatre in Billingham, Teesside. The theatre has been forced to cancel its programme of events until May (<http://news.bbc.co.uk/1/hi/england/tees/4193079.stm>).

(Ed – Thanks to Sarah Jordan for this section).

❖ WES conference debate continues

The following is an extract taken from last newsletter and concerns the Friday morning session. Andrew Quinn wrote:

“...The next pair of papers brought us very much back to the problems of practical wind engineering. Mark Sterling demonstrated how to most effectively topple the chairman with the buffeting of a passing high-speed train and how such issues should be of growing concern to everyone. This posed the challenge of how to effectively communicate wind

engineering ideas to the general public and the railway industry so that serious research can be rationally undertaken.”

In response to this report the following letter was received:

“Dear Mark,

WES Newsletter Volume 6, No. 4 November 2004 Page 8 Slipstream Effects on Station Platforms

I was very surprised to read in the recent WES newsletter, with regards to slipstream effects on people on the station platforms, that “This posed the challenge of how to effectively communicate wind engineering ideas to the general public and the railway industry so that serious research can be rationally undertaken”.

The article is misleading as it implies that this issue has never been considered. Considerable research has been undertaken by the Aerodynamics Team of British Rail Research (and later as AEA Technology Rail), as well as similar groups in other national railway administrations, on the issue of train generated slipstreams and its effect on personnel both on the station platform and at the trackside. In Britain, this research has resulted in the setting of safe standing distances at the trackside and on the station platform. On at risk station platforms, where non-stopping trains pass through adjacent to a platform, measures are in place (such as the yellow line, notices, automatic announcements, secure areas for pushchairs). The research work was undertaken for the railway industry and the findings have been incorporated into Rail Group Standards and Rule Books.

In fact some of this work was presented at the WES technical meeting on 27 March 2001. In light of this, would you please include a correction in the next WES newsletter to the effect that wind engineering has been considered in the railway industry over many decades and the issue/research on this topic is not new.



Yours sincerely,
Terry Johnson
Head of Aerodynamics Team”

In response, Andrew Quinn writes:

Dear Mark,

I was very surprised and disappointed to receive your correspondence concerning the WES newsletter summary of the conference session that I wrote. Firstly let me make it clear that I fully understand and endorse the fact that wind engineering has been considered in the railway industry over several decades and that research on this topic has been both wide ranging and successful in improving performance and safety. Indeed, as your correspondent points out, there have been several WES technical meetings on this subject, not least the most recent one at which I myself presented a short paper. I'm sure I also do not need to point out that condensing the presentation and discussion of each WES conference paper into two sentences cannot really do justice to the arguments put forth, or try to contain all the preceding research material referred to by each speaker, as you so admirably managed to do in your presentation. I accept that the sentence referred to, taken in isolation by a lay reader, might give an impression that no research had been undertaken since it makes no reference to such research. However, I would hope that readers of this newsletter are far from naive and understand that any such work is built upon a significant foundation of previous studies by internationally recognised groups, just as your correspondent makes reference to. But, if such a clarification, printed in the next newsletter, would be helpful to your readers then I would have no hesitation in providing or endorsing such a statement.

Perhaps for clarity it would also be useful if I explain my thoughts behind the sentence in question. In your presentation you referred not only to previous studies but also to research proposals which had been rejected by

rail authorities and industry. In particular you made reference to experimental designs which, although directly fulfilling the objectives of the project, were considered unsupportable by the rail authority / industry body for reasons which appeared to concern the perception of risk (as distinct from the actual probability of misadventure). I myself have experienced exactly this phenomenon when a rail company withdrew a fundamental part of its own project requirements even though such measurements are conducted daily on other rail networks. I do not for one moment suggest or endorse unsafe working practices by this comment, nor do I believe that any and all research should be supported without due consideration of other relevant matters. I merely indicate that on occasions wind engineers are unable to fulfil the research requirements of the rail industry because of the concern about perceptions of the general public and nontechnical staff of the rail industry, who are exactly the people we are working to help! This was the challenge of communication I felt you posed in your presentation.

I hope that this clarifies matters and I do apologise that my light-hearted summary of an excellent conference session has caused such concerns. Please assure your correspondent on my behalf that it was not, and never would be, my intention to suggest that the years of scientific and engineering research underlying our current rail network be undervalued or ignored.”



❖ Aerodynamic reminiscences of planes and trains

A public lecture on the above will be given by Roger Gawthorpe at the University of Birmingham at 5:00 on the 16th March 2005. For further details please contact Ms Lesley Anne Boyle on l.a.boyle@bham.ac.uk or 0121 414 5137.

Outline of the presentation:

After early training in the aircraft industry at de Havillands and studies at Cranfield (then The College of Aeronautics), Roger Gawthorpe was recruited in 1970 into the newly forming Research and Development Division of British Rail to create the first national railway aerodynamics unit. Early applications of the teams expertise were to the new Advanced Passenger Train and to proposals for a Channel Tunnel, both of which required the development of new aerodynamic techniques. The following 26 years produced some novel experimental and theoretical approaches in open-air and tunnel aerodynamics up until the privatisation of British Rail – research having been undertaken not only for UK operations but also collaborative projects between national railways in Europe and commercial consultancy in over 50 studies abroad. Some aspects of this work will be described in the lecture. Post-British Rail, Roger became an independent consultant in Railway Aerodynamics and managed a number of European-funded research projects based in the Netherlands as well as advising clients in the UK and elsewhere

❖ Full-Scale Measurements at SRI

On 17 November 2004 at the University of Birmingham, visiting Prof Roger Hoxey gave a public lecture entitled Full-scale wind load measurements. The lecture covered the extensive work that Roger and others have undertaken over the years. Rather than summarise the lecture in this newsletter, it is envisaged that an in depth article will be presented in the next newsletter.

❖ Forthcoming WES Meetings

The following meetings are have been proposed. Unless stated otherwise all meetings will be held at the ICE from 6 pm.

1 February 2005 Wind tunnel projects.

16 March 2005. Aerodynamic reminiscences of planes and trains. The University of Birmingham.

3 May 2005 This year's windstorm and AGM.

7 September 2005 University Day

2 November 2005 9th Scruton Lecture

❖ Other Forthcoming Conferences

2005

- **10th Americas Conference on Wind Engineering (10ACWE)**
Baton Rouge, Louisiana, U.S.A., May 31 - June 4, 2005
<http://www.10ACWE.lsu.edu>
- **EACWE 4. The fourth European & African Conference on Wind Engineering.**
Prague, 11-15 July, 2005
<http://www.itam.cas.cz/eacwe2005>
- **RMets Conference 2005**, University of Exeter, 11-16 September,
<http://www.rmets.org>
- **The sixth Asia-Pacific Conference on Wind Engineering (APCWE VI)**
Seoul, Korea, September 12-14 2005
<http://apcwe-vi.kaist.ac.kr>

2007

- **12th International Conference on Wind Engineering (ICWE12)**
Cairns, Queensland, Australia, 1 – 6 July
www.awes.org/icwe12

❖ Contact Point

Contributions and responses to:



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