The Wall Journal™

The International Journal of Transportation–Related Environmental Issues

Issue No. 16

March/April 1995

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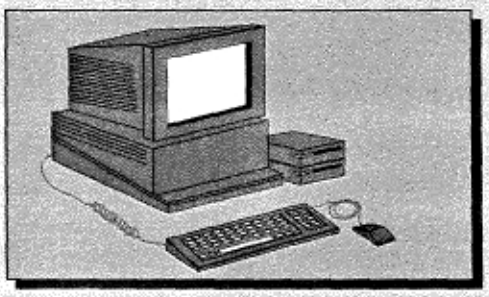
Noise Barrier Construction Forecast — 296 Sites Considered for Construction into 2000 and Beyond



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The Wall Journal

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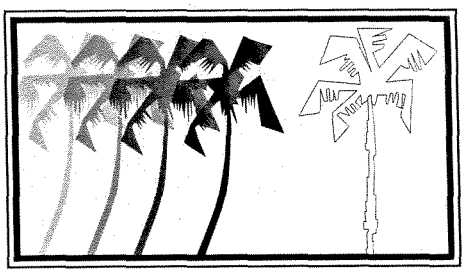
EDITOR'S CORNER by El Angove



I don't have much to complain about for this issue. I watch The Weather Channel every morning with my coffee. I like to see the weather map, showing all the ice, snow, sleet and rain across the country, and then look at the southern end of Florida where the sun is shining. I guess I could complain about one thing; once in February, the daytime temperature plummeted to 64 degrees. All the snow birds are now here in force. And, it is spring break time and all the girls from Ipanema are sunning on the beaches, while the dolphins do their dances in the waves and the pelicans hover around the piers, hoping a fish will flop off an unwary angler's line. Eat your hearts out.

Being a grumpy old man, I suppose I could find some other things to complain about. If you will look at the Noise Barrier Construction Forecast starting on page 12, you will discover that there are 296 sites around the country (and that doesn't even include California) which are being considered for noise barriers. Also, many of those sites will contain multiple noise barriers.

That's a mountain of noise barriers. There's an awful lot of noise barrier activity that is not being reported on in these pages. which disturbs me greatly. This is **your** journal. If you find reading about your fellow professionals' projects and experiences to be of interest to you, then isn't it about time you told us all about **your** experience.

I can't invent stories to fill up these pages; I need real-life stories, and you folks are sitting on them. Give me a break. Send in your stuff. If you need some guidelines, look on page 23. We'll publish you. With your picture, vital statistics, resumé and bio if you like.

Let's see...what else can I complain about? There must be something. Oh yeah, Reader Registration. As you know, government agencies and academic institutions receive free subscriptions. The only perquisite is that you must register your interest in getting your own private copy. This is to certify our free mailing list. Registration is simple. Just follow the directions found on page 24 and you will receive a copy of every issue.

If you have already registered, do not bother to do it again. It will only confuse me. But, if you have not, do it now before we review our database (sometime in the next two months) and excise the non-registereds. We are obliged to our advertisers to maintain only those names and addresses of persons who have a sincere interest in transportation related environmental issues.

Turning non-grumpy, I would like to thank all of you registered readers and particularly those of you who have notified us of address changes or of persons no longer with the agency or institution. You are my kind of people. ■

In Coming Issues:

The Fundamentals of Sound — Part IV: The Receiver

I-94 Indiana Noise Barriers — A Pictorial Spread

More Professional Articles and Reports

And More...

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LETTERS TO THE EDITOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION

January 23, 1995

Dear Mr. Angove:

I would like to clarify several statements made by Mr. Jim Amundsen in an article you recently published regarding noise barriers on bridges (Barriers on Bridges — A Case History, Issue No. 15).

The Michigan Department of Transportation (MDOT) was responsible for the color selection for both the reinforced block wall and the Cor-Tec Sound Off panels. Although community concerns were considered as on all MDOT noise barrier projects, the color selection was made in-house, by our design staff.

The contract specifications clearly specify a "Gray Earth Tone," not a "previously selected brown" as stated by Mr. Amundsen. There was no color change on this project.

In light of this fact, it should also be noted that the concrete block manufacturer, Best Block Company of Ypsilanti, Michigan maintained its production schedule without any "major problem," as suggested in the article.

While the Sound Off panels have provided MDOT an alternate solution for structure crossings, I feel that the article was somewhat misleading with regard to the color selection on the project.

Thank you for your informative publication.

Lynn M. Lynwood
Landscape Architect
Design Division

Thanks for setting the record straight. I understand that Mr. Amundsen has left the Cor Tec Company. — Ed.

MISSOURI HIGHWAY and
TRANSPORTATION DEPARTMENT

January 13, 1995

Dear Mr. Angove:

I recently received a copy of Noise Regulation Report, a publication of Business Publishers, Inc. The current issue was Volume 22, No. 1 and contained eight pages. This report is published biweekly.

Included with the complimentary copy was a form for subscribing for one year at a cost of $455.00. With the report being published 26 times per year, this figures out to be $17.50 per issue. This cost per issue is almost the same as The Wall Journal charges for a yearly subscription (6 issues). I realize that you do include some advertisement, but then you also provide state agencies such as ours with a free subscription.

The Wall Journal will continue to be our publication of choice for keeping informed about what is going on in the world of noise, especially as it relates to highways. I hope you had a Merry Christmas and I wish you every good fortune during this new year.

Robert L. Hudson
Design Special Assignments Engineer
Design Division

This is one of those letters which warm the cockles of my heart. Thanks for the kind words and good wishes. — Ed.

UNIVERSITY OF ALBERTA
CANADA

February 14, 1995

Dear Mr. Angove:

I am writing regarding the submission of an article on road noise barrier performance predictions that we talked about late last year. I am curious what format will be best for you. I do my work on a PC, but I can easily create an EPS file to whatever format that you desire. Have you a list of specifications regarding column widths, heights, margins, etc. or can I just take measurement from a previous article? Could I electronically transfer the EPS file to you or is regular post easier for you?

What sort of a time schedule have you in mind? You had mentioned that you were going to use my note to you as a letter to the editor in the upcoming issue, and that my article would appear in the following issue. Is that still the plan?

Ken R. Fyfe
Associate Professor
4-9 Mechanical Engineering

That is still the plan; I look forward to receiving your article. Requirements for publication are simple:

1. Submit all copy on 3.5" disks.

2. Copy may be in Word Perfect or any other text application; I can translate your PC text to my Macintosh word format.

3. Do not bother with column widths or margins; I can load your text directly into my QuarkXpress publishing software and manipulate it in any fashion I choose.

4. For drawings or line art such as graphs and tables, please laser print on laser paper. I will electronically scan your work and place it directly into your article.

5. You may submit photographs in black-and-white or color; they will be scanned and placed in the article, as are all photographs in this issue.

Thanks in advance for your article. — Ed.

NEW FHWA MODEL AND SOFTWARE - Part IV — A CONTINUING SERIES...

By: Cynthia S.Y. Lee and Gregg G. Fleming (US DOT), Robert E. Armstrong and Steven A. Ronning (FHWA) and Grant S. Anderson (HMMH Inc.)

This is the fourth in a series of articles to appear in **The Wall Journal** about the continuing development of the Federal Highway Administration's (FHWA) next generation highway noise prediction model, the FHWA Traffic Noise Model (FHWA-TNM), and implementing software, the FHWA Traffic Noise Software (FHWA-TNS).

The FHWA-TNM/TNS, scheduled for release in the second half of 1995, will utilize state-of-the-art advancements in the methodology and technology of noise prediction and barrier analysis and design. A primary building block for TNM/TNS, around which the acoustic algorithms are being structured, is its Reference Energy Mean Emission Level (REMEL) Data Base. This article presents the status of the measurements performed in support of the TNM/TNS REMEL Data Base.

The REMEL Data Base is being developed by the U.S. Department of Transportation, Research and Special Programs Administration, John A. Volpe National Transportation Systems Center, Acoustics Facility (Volpe Center), in support of the FHWA, Office of Environment and Planning and Office of Engineering and Highway Operations Research and Development, and a 26-State National Pooled-Fund Study Titled: "Highway Noise Model Data Base Development". To date, the study has received the necessary funding commitments to complete the project.

The components of the REMEL Data Base are as follows: (1) constant-flow REMEL data; (2) interrupted-flow REMEL data; and (3) subsource-height data. In addition, it was originally intended that measurements be made at sites with an overlapping berm and/or barrier combination (multiple-diffraction site). The data from the measurements were to be used to calibrate the appropriate TNM/TNS algorithms.

However, an exhaustive, nationwide search turned up no measurable multiple-diffraction sites. Consequently, the FHWA, several State representatives from the Pooled-Fund Study, and the Volpe Center agreed to channel the funds originally dedicated for multiple-diffraction measurements to perform additional constant-flow REMEL measurements.

The Volpe Center, with the assistance of Maryland State Highway Administration (MSHA), has completed 11 weeks of constant-flow REMEL measurements. A total of 6,000 individual pass-by events (almost three times more than those collected for the development of the current FHWA noise prediction software, STAMINA) were measured at 40 sites in California, Connecticut, Florida, Kentucky, Michigan, Maryland, Massachusetts, New Jersey and Tennessee. A special thanks goes out to each state's highway agency for significant contributions during the site selection process.

Measurement sites were selected based upon geometry, traffic speed and volume, ambient noise levels, roadway pavement type, and roadway grade. Acoustical data, including A-weighted maximum sound levels (L_{Amax}), one-third octave-band spectra at the time of L_{Amax}, and spectral time-history data, were obtained at each site using a Larson Davis Model 2900 Analyzer and Model 820 Sound Level Meter.

Constant-flow measurements were made at 25, 50 and 100 foot offset positions from the centerline of the near travel lane. Data for vehicle speeds between 10 and 70 mph were obtained. Measured vehicle types included automobiles, medium trucks (2 axles, 6 tires), and heavy trucks (greater than 3 axles), as well as buses and motorcycles. These data will help correct many of the limitations of STAMINA, e.g., limited speed ranges, vehicle types and pavement types, and the inability to account for vehicles on grade.

In addition to constant-flow REMEL data, the Volpe Center, with the assistance of MSHA, Vanderbilt University, the University of Central Florida, Ohio University, Tennessee DOT and Kentucky DOT, has completed three weeks of interrupted-flow REMEL measurements. Data for vehicles in acceleration and deceleration mode were measured at seven sites in Florida, Kentucky and Tennessee near selected toll booths, stop signs and highway entrance/exit ramps.

Measurement sites were selected based upon geometry, traffic speed and volume, ambient noise levels, roadway pavement type, and roadway grade. Acoustical data, including A-weighted maximum sound levels (L_{Amax}), one-third octave-band spectra at the time of L_{Amax}, and spectral time-history data, were obtained at each site using a Larson Davis Model 2900 Analyzer and Model 820 Sound Level Meter, two Rion Model SA-27 Analyzers and several Metrosonic Model 308dB Sound Level Meters.

Interrupted-flow measurements were made at a 50 foot offset position from the centerline of the near travel lane. Data were collected as vehicles accelerated to and decelerated from constant speeds at various points along the roadway, typically 50, 100, 200, 400, 800, 1000 and 1200 feet from the stop line (i.e., toll booth, stop sign or similar vehicle idling position). Data were also obtained at a corresponding constant-speed site. This will allow for later correlation between the constant-flow and interrupted-flow data.

Measured vehicle types included automobiles, medium trucks and heavy trucks, as well as a few buses and motorcycles. These data will allow for the modeling of traffic at various flow-control devices such as toll booths, traffic lights and highway ramps. The modeling method will be automated and, as such, will be simpler than that found in the National Cooperative Highway Research Program Report 311 (NCHRP 311).

Measurements of one-third octave-band subsource-height data are currently being conducted by Florida Atlantic University under direction of the FHWA, Florida DOT, the TNM/TNS Technical Review Panel and the Volpe Center. These data will allow for a percent-energy apportioning of the constant-flow and interrupted-flow levels to fractional noise-levels representative of typical vehicle noise subsources (e.g.,

engine noise, tire/pavement noise and exhaust noise). The use of multiple-subsource heights in TNM/TNS, as compared with STAMINA's single "effective" height, will result in greater prediction accuracy, especially in the design of noise barriers.

Subsource-height data will be obtained for the same conditions represented by the constant-flow and interrupted-flow measurements (asphalt and concrete pavements, level and grade roadways, etc.); however, on a smaller scale. In terms of schedule, constant-flow, subsource-height measurements on level, asphalt pavement are scheduled to be completed by February 1995. Constant-flow, subsource-height measurements on concrete pavement, interrupted-flow and grade measurements are scheduled to be completed by March 1995. The data will be provided to the Volpe Center in April for incorporation into the TNM/TNS Data Base.

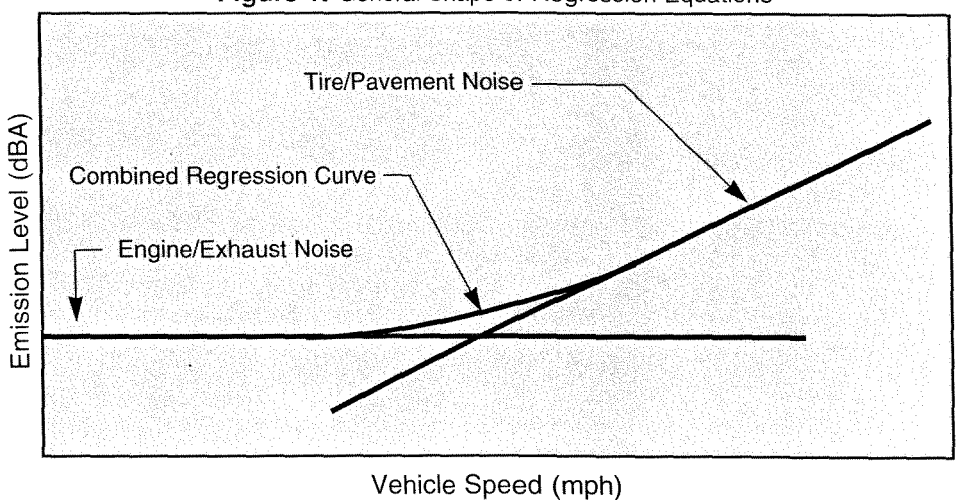
All three components of the REMEL Data Base will be used to develop regression equations, expressed as a function of vehicle speed and type. Separate baseline-regression equations will be developed for automobiles, medium trucks, heavy trucks, buses and motorcycles from data collected at sites with the following characteristics: (1) Dense-Graded Asphaltic Concrete (DGAC) or Portland Cement Concrete (PCC) pavement; (2) level grade roadways; and (3) constant-flow traffic.

The general form of the baseline-regression equations will differ from that in STAMINA. Specifically, the equations will contain a "tire/pavement noise" component that increases with vehicle speed, as in STAMINA. It will also contain an "engine/exhaust noise" component, which is independent of vehicle speed. Figure 1 graphically displays the two components.

Following the development of the baseline-regression equations, similar equations will be determined separately for each vehicle type on each of three pavement types as follows: DGAC; PCC; and Open-Graded Asphaltic Concrete (OGAC). The difference between these equations and the corresponding baseline equation will be applied in TNM/TNS as an adjustment to the "tire/pavement noise" component of the baseline equations — since pavement type should only affect tire/pavement noise. A second set of regression equations will be developed to adjust the "engine/exhaust noise" portion of the baseline equations to account for changes in vehicle throttle due to roadway grading and traffic control devices.

Finally, subsource-height adjustments, in one-third octave-bands, will be determined for, and applied to all of the above regression equations. It is important to note that all adjustments will be transparent to the TNS user.

Figure 1. General Shape of Regression Equations

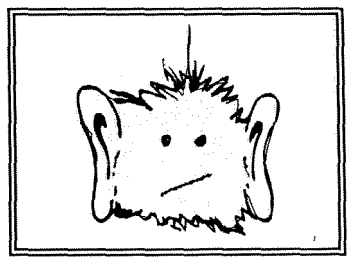


Items discussed during status meetings, including specific components of TNM/TNS, will be presented here in future articles. ■

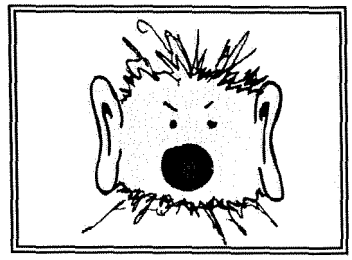
For additonal information, contact either Cynthia Lee or Gregg Fleming at the Volpe Center, phone 617 494-2372.

(Ed. Note: Certainly meaning no disrespect of the learned and erudire treatise presented above, I am reminded of a brief article which appeared in our Issue No. 7, in which our Science Reporter, Ken Polcak of MDSHA presented his sketches of remels he had observed while taking noise level measurements along the interstates in Florida, reprinted herewith without prejudice for your amazement).

REMEL ***(Remelis Decibelis).*** Of the Family Acousticus



a) Remel – Passive State



b) Remel – Agitated State

Description: An elusive, fuzzy creature of variable size and strength, which are tied strangely to the intensity of vehicular activity on roadways within their habitat. Though they exhibit no visible means of mobility, they have demonstrated the capability to move with a velocity in excess of 300 meters per second.

Their presence can only be detected through the use of sophisticated acoustical measurement equipment. Many subspecies are expected to exist , based on geographic location and other unknown factors.

Habitat: Along busy freeways, toll roads and other heavily trafficked highways.

Range: Currently identified only in the states of Florida, California, New Jersey, Georgia and Tennessee, but are likely to exist in all 50 states, and Puerto Rico. Also known to exist in the province of Ontario, Canada. Also thought to exist in Europe and Australia. In fact, they seem to be everywhere, if you just look for them.

Habits: They dwell in groups and can propagate wildly if unchecked. When agitated, they have been known to leap over tall obstacles and attack the ears of unsuspecting humans and other creatures.

Voice: They produce an irritating range of sounds, covering the full frequency spectrum.

Reproduction: Method unknown. Remels appear to be asexual, but to date have been too shy to be studied. More research is definitely needed. ■

The Use of Earth Berms in Noise Barrier Construction

By John K. Hendrickson, P.E.

"Tucked away in our subconscious is an idyllic vision. We see ourselves on a long trip that spans the continent... Out the windows we drink in the passing scene of cars on nearby highways, of children waving at a crossing, of cattle grazing on a distant hillside, of smoke pouring from a power plant, of row upon row of corn and wheat, of flatlands and valleys, of mountains and rolling hillsides, of city skylines and village halls."

I don't think Robert J. Hastings was talking about my commute when he wrote this, but how often do we hear complaints about views lost or the ugliness of the landscape once a noise barrier is constructed. This is a very real issue and one that is being taken seriously by large authorities and local highway departments alike.

The use of earth berms is one way to minimize the impact of a noise barrier project both visually and economically. As shown in Issue No. 15 of **The Wall Journal**, the cost per square foot of earth berms is approximately one third the cost of post and panel systems. Three projects which utilize a combination earth berm/noise barrier design in Massachusetts are the Massachusetts Turnpike Authority's projects in the City of Newton and Town of Natick, and a smaller project to mitigate the construction noise of an equipment maintenance facility constructed by the Town of Natick Department of Public Works.

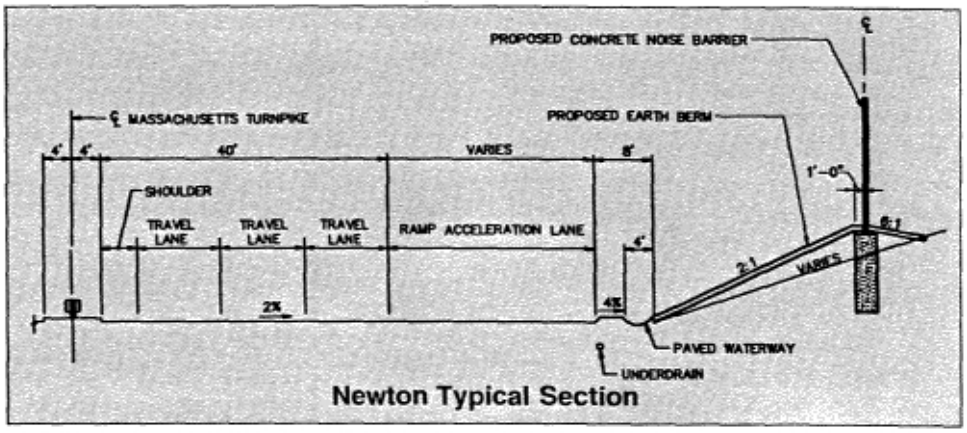
Massachusetts Turnpike Authority

The Massachusetts Turnpike Authority (Masspike) is a leader among transportation agencies in protecting the environment and conserving the natural landscape. Led by Masspike Board of Director Vice Chairwoman Ann M. Hershfang, Masspike has developed an award-winning landscape conservation program. So, with the inception of its pilot noise barrier program, special attention was paid to the visual impacts on both Turnpike abuttors and patrons.

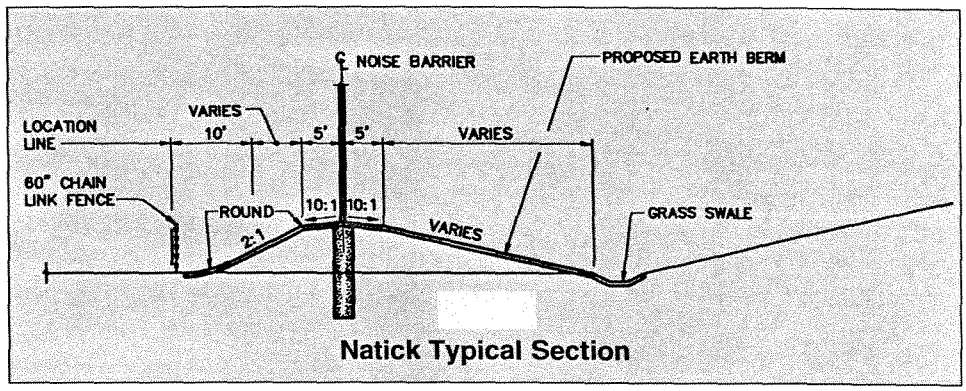
The diverse design team put together for this pilot noise barrier project included Masspike Project Engineer Lori Steans, Landscape Architect Victoria Hoffman, Landscape Maintenance Supervisors Ned Cerasuolo and Mike Mulryan, and the firms of Harris Miller Miller and Hanson Inc.; Kamman Associates, Landscape Architects; and the Consultant Engineering Firm of Fay, Spofford & Thorndike, Inc.

In addition to wall placement, other items such as landscaping, barrier material selection and earth berms were used on Masspike's noise barrier projects in Newton and Natick to make the barrier less obtrusive and less expensive by reducing the height of the barrier.

Of course, the biggest hindrance to earth berms is the lack of available right-of-way. As is the case of most highways constructed in an excavated section, the City of Newton site included a swale at the bottom of slope and the property line at the top of slope (see NewtonTypical Section). Ground survey revealed that at about one half of the site, the side slope was less than two to one. By making the slope in these areas two to one and providing an earth berm, the height of the barrier was reduced.



Newton Typical Section



Natick Typical Section

Also, a grass swale was provided along the residential side of the barrier to provide positive drainage which connects to the highway drainage system. This system eliminates the crushed stone along the base of the barrier normally used to drain sheet flow through the base of the barrier. The MTA considered the crushed stone both a maintenance problem and a visual impact as the stone is clearly visible on a side slope.

This project is currently under construction and is expected to be completed this spring. This section of the Masspike connects the circumferential highway I-95 to Boston and consists of many concrete retaining walls and bridge abutments. A DURISOL soundabsorptive noise barrier was utilized to blend in with this corridor. With an average height of about 18 feet and a length of 2,250 feet, the total wall area was 41,000 square feet. C.R.C. Co., Inc. of Braintree, MA was awarded this project with a low bid of $1,600,000. This price included many ancillary items such as over 1,000 linear feet of retaining walls, utility relocation, landscaping, etc. This barrier may be viewed on the eastbound side of the Masspike just east of Exit 17.

At Masspike's Natick site, right-of-way was available and a 'standard' earth berm was used (see Natick Typical Section). A two to one maximum side slope was used for soil stability and a ten foot plateau was provided at the barrier. The plateau provides two uses: 1) to allow construction vehicle access to auger a hole for the post foundation and 2) to provide a five foot area for future maintenance on both sides of the barrier.

This project is also under current construction and expected to be completed this spring. This section of the Masspike is heavily wooded and the noise barrier meanders through the woods to save as many mature trees as possible. A wooden noise barrier was appropriate for this site and the HOOVER Plywall Post and Panel system with Parallam Posts was selected. With an average height of 16 feet and a length of 2,000 feet, the total wall area is 33,000 square feet. Casby Broth-

ers, Inc. of Boston was awarded this contract with a low bid of $700,000. This price also included retaining walls, landscaping, fencing, etc. This barrier is located on the westbound side of the Masspike approximately two miles west of Exit 15.

Town of Natick

At a smaller scale, the Town of Natick, MA promised noise abatement to four residences adjacent to the site of their new equipment maintenance facility (see Town of Natick typical section and photos). An initial assessment of this site showed that a 300 foot long, 20 foot high noise barrier would be required for adequate noise abatement and to eliminate nighttime lighting from the maintenance facility to the first floors of the adjacent homes. Using a cost of $15.00 per square foot, the preliminary construction cost of $100,000 was, of course, a shock to the Town.

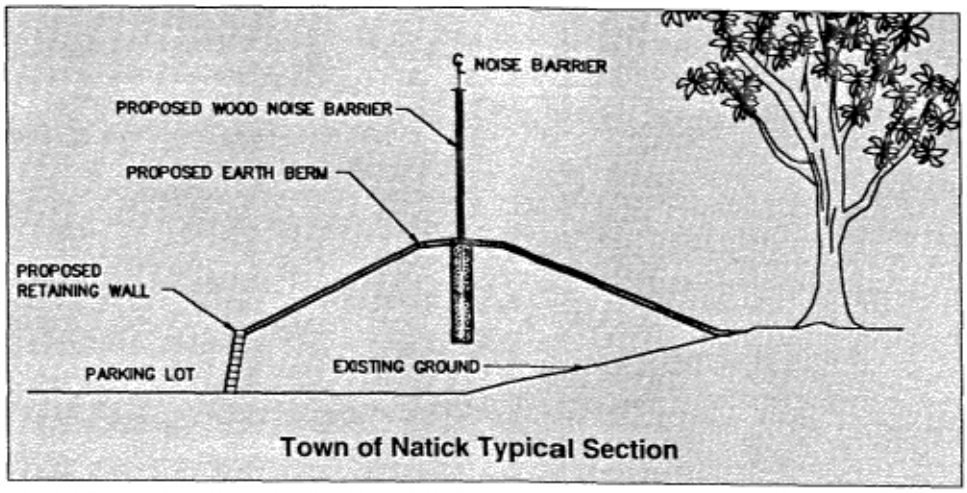
The second option of placing a 12 foot high barrier at the property line was also not acceptable as a row of mature trees would most likely be destroyed and also, the Town wanted a maximum eight foot high barrier so that it would look as much like a residential fence as possible (the adjacent neighborhood is fairly exclusive).

A site plan was developed which showed the adjacent parking lot was oversized. Using AASHTO turning vehicle guides for the type of vehicles which used this facility, the parking lot was redesigned, which increased the usable space for the construction of the noise barrier. This increase in space made the use of an earth berm feasible. A landscaping retaining wall was also used so that there was no net loss of parking spaces.

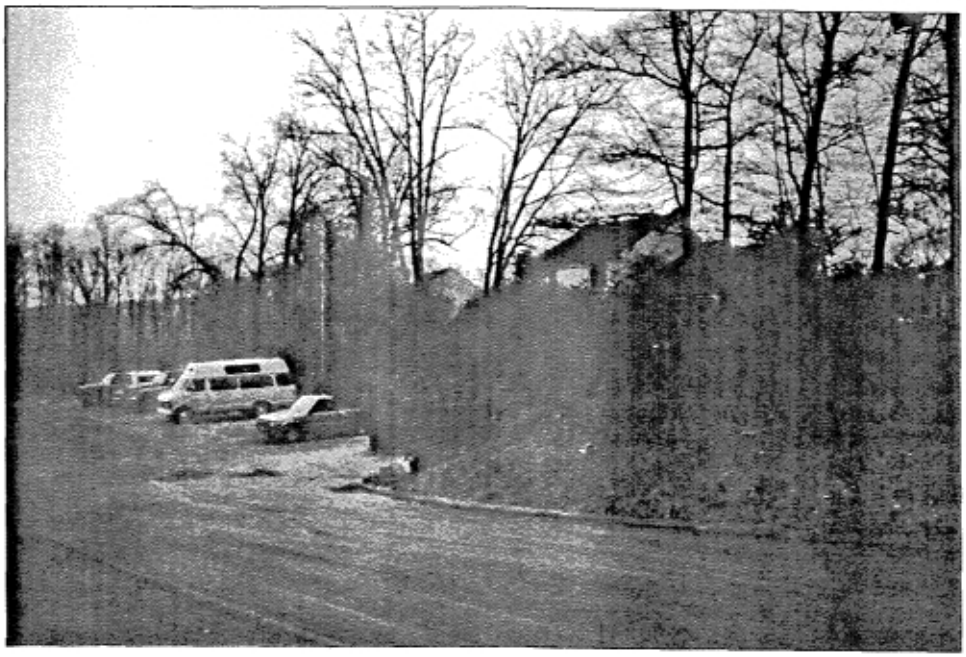
The project was constructed in the spring of 1994 by Town of Natick, Department of Public Works personnel using their own design for the eight foot high wooden noise barrier. The average height of the earth berm/noise barrier is approximately 20 feet with a total length of 275 feet for a total of 5,500 square feet. Including materials for the noise barrier, retaining wall, earth berm, mulch, new fence, etc., the entire project cost was approximately $30,000 or $6.00 per square foot. The Town of Natick Director of Public Works, Charlie Sisitsky and his assistant, Sarkis Sarkisian, are to be commended for their work in developing a solution that is both cost effective and aesthetically pleasing.

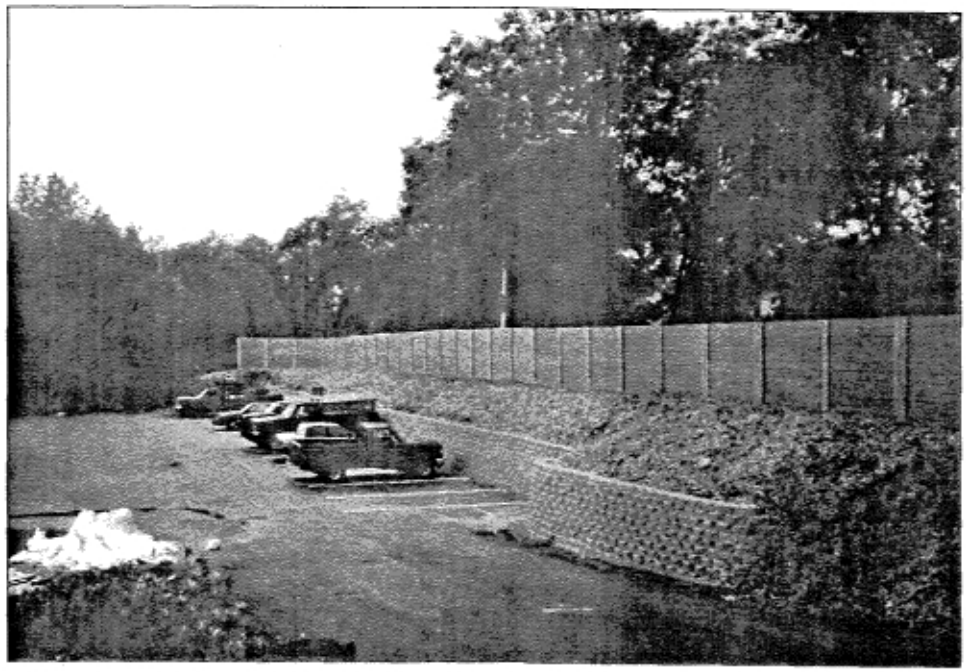
Hopefully, the addition of earth berms to these projects will have a positive impact on both the adjacent residents and the traveling public because, as Hastings put it, "The true joy of life is the trip". ■

For more information on these projects, call:
John K. Hendrickson, Principal Engineer
Fay, Spofford & Thorndike, Inc.
Burlington, Massachusetts
Tel 617 221-1000 Fax 617 229-1115



Town of Natick Typical Section


Town of Natick Maintenance Facility Parking Lot - BEFORE


Town of Natick Maintenance Facility Parking Lot - AFTER

NOISE FROM VIRGINIA

By Cary B. Adkins, Virginia Department of Transportation

When writing for fun — writing when I want to rather than when I have to — I usually need to be inspired. I spend so much of my time at the Virginia DOT doing 'have to' writing, that I usually am out of inspiration when it's time to do fun writing. I checked the back issues of The Wall Journal and found that I haven't been inspired since the 6th issue, two years ago. Well, for the 16th issue, El Angove has INSPIRED me (I won't say how). Actually, I've wanted to write this article for several months. I just needed a little push.

Virginia, as do most other states, has a noise abatement cost ceiling that is used to determine whether or not an abatement measure is cost effective. When the cost exceeds the ceiling, the abatement measure is normally eliminated from further consideration. Virginia's State Noise Abatement Policy established $20,000 per property as the ceiling for residential properties. In the case of sound barriers, the ceiling includes only the costs for materials and installation.

When an effective (minimum reduction of 5 decibels) barrier can be provided for $20,000 or less per property, the barrier is constructed, unless the affected residents do not want it. Until two years ago, a barrier that cost more than $20,000 per property could not be built with federal or state funds unless an extenuating circumstance existed. The extenuating circumstance element of the State Policy is intended only for extreme situations and has only been applied twice.

Whether an effective barrier cost $21,000 or $81,000 per property made no difference. If the cost per property exceeded $20,000, the barrier was not approved for construction. And since Virginia does not have a retrofit program, abatement for the affected communities could not be considered again unless another Type I project was initiated. In most situations, that was the end of the story. Well, not quite. Many of Virginia's 'no barrier' decisions have been followed by letter writing campaigns that in some cases have lasted for several years.

One such 'no barrier' decision has resulted in a new opportunity for providing abatement to communities where barriers are found not to be cost effective. Two years ago, the noise analysis conducted in conjunction with an interstate widening project in Northern Virginia (everything controversial happens in Northern Virginia) indicated that construction of a sound barrier for a particular community and a small adjoining development would not be cost effective. The barrier cost per residence was slightly less than $30,000.

A letter writing campaign along with challenges to Virginia's noise analysis procedures and results followed. At some point, the question was raised as to the possibility of constructing the barrier if a third party would fund the amount above $20,000 per property. Virginia and the FHWA agreed that the $20,000 per residence state and federal share of the barrier cost could be contributed if the amount above $20,000 was provided by a third party.

Even with the new barrier opportunity, the community was not happy with having to raise more than $200,000 as the third party share, and further challenges to Virginia's results as well as the State Policy followed. In fairness to the community, $10,000 per affected residence is a substantial amount. However, the third party funding option does provide an opportunity for noise protection that did not previously exist. The community, realizing that its challenges were not going to be successful, requested that VDOT reduce the length of the barrier to eliminate protection to the adjoining, and more difficult to protect, development. The shorter (design length) would cost $25,200 per property or $72,000 as the third party share.

While $5,200 per affected residence is still significant, it does not appear to be unrealistic. The community was given a cutoff date for making a commitment on funding the third party share of the barrier. A decision beyond that date would not allow the barrier to be constructed as part of the ongoing widening project, and would increase the cost significantly. As I write this article in late February, a commitment has not yet been made by the community.

Ironically, on another project in Northern Virginia (naturally), the third party funding option has already been used successfully to help construct three sound barriers. The amount provided by the third parties were $3,232 for five residences, or $16,160; $7,875 for eight residences or $63,000; and $7,000 for four residences or $28,000.

The third party funding option is now being offered on all qualifying projects. Commitments from the affected communities are being required by the date the FHWA signs the PS&E assembly. The option has been available for less than two years and therefore it is impossible to predict its eventual success. I would like to hear from other states which are now using or investigating third party funding options. I would be interested in hearing your experiences.

I hope to remain inspired during the coming months and that you will hear from me in future issues of The Wall Journal. It is my belief that many of us are under-utilizing this medium for exchange of technical and political information, for project reports and new products, and for just plain visiting with each other.

As you can see, I ***am*** inspired. ■

Cary Adkins is an Environmental Program Planner for the Virginia Department of Transportation and manager of VDOT's noise program. He may be contacted by phone at 804 371-6765 or by fax at 804 786-7401.

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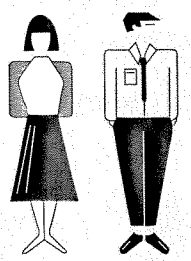

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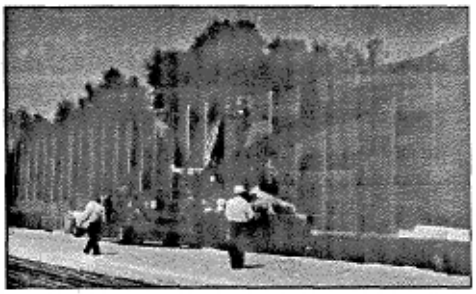

Noise Barrier Construction Forecast

This forecast of anticipated noise barrier construction has been compiled by **LEAP Associates, Inc.**, consulting engineers of Denver and Tampa, and is an update of the data presented in Issues 9, 10 and 11 of **The Wall Journal**. This material is for general information purposes only, and is subject to change without notice. **LEAP Associates, Inc.** have graciously allowed us to publish it for our readers.

Bid Date	Location	Highway	State	Length	Height	Comments
96+	North Little Rock	US 67 West	AR	not set	not set	in studies
7/95	Chandler	I-10	AZ	10,500 lf+	10-20 ft	one side of road
96-98	Squaw Pass/Phoenix	St. Rte. 51	AZ	not set	20-40 ft	both sides of road
97/98	Flagstaff	I-17/I-40	AZ	3,600 lf	14-18 ft	one side of road
2000	Chandler	St. Rte. 101	AZ	4,200 lf	8-12 ft	both sides of road
2002	Chandler	St. Rte. 101	AZ	5,300 lf	8-12 ft	both sides of road
2003	Chandler	St. Rte. 101	AZ	5,500 lf	8-12 ft	both sides of road
Not set	Tempe, Scottsdale, Mesa	St. Rte. 101	AZ	20,000 lf	10-16 ft	both sides of road
10/94	Colorado Springs	Powers Blvd.	CO	900 lf	not set	need right-of-way
10/94	Lafayette	Hwy. 287	CO	8-9,000 lf	10-16 ft	brick look
Spring 95	Colorado Springs	I-25	CO	up to 15,000	not set	ROW being obtained
mid 95	Pueblo	Hwy. 47	CO	2,500 lf	not set	concrete, not sure if precast yet
9-10/95	Fountain	I-25	CO	3,000 ? lf	not set	retro-fit
99-2000	Berthoud	Hwy. 287	CO	not set	not set	under study
6-7/95	Auburn/Kent	St. Rte. 167	FL	2,000 lf	10-12 ft	both sides of road
6-7/95	Auburn/Kent	St. Rte. 167	FL	2,400 lf	10-12 ft	both sides of road
6-7/95	Auburn/Kent	St. Rte. 167	FL	400 lin.ft	5 ft	both sides of road
7/95	Jacksonville	I-95	FL	not set	14-20 ft	public meetings
Mid- 95	West Palm Bch, Del Ray Bch	I-95	FL	16,000 lf	18 ft ave.	16 sep. sites
4/96	Seminole County	I-4	FL	1,430 lf	not set	in design
8/96	Jacksonville	I-295	FL	6,000 lf	15 ft	looking at materials
96+	Tampa	I-4	FL	not set	not set	studying two places
8/97	Orlando	Maitland Blvd.	FL	3,104 lf	12-17 ft	in design
98	Orlando	Maitland Blvd.	FL	540 lf	12-14 ft	in design
99+	Tampa	I-275	FL	2-3 miles	18-20 ft	both sides of road
2000+	Miami	State Road 826	FL	6,000 lf	16-20 ft	both sides of road
2002+	Miami	State Road 826	FL	15,000 lf	10-20 ft	in three sections
Not set	Miami	State Road 826	FL	not set	15-20 ft	both sides of road
Not set	Sumter County	State Road 44	FL	2,100 lf	12-14 ft	2 sections: 600 & 1,500 lf
94/95	Atlanta	I-75 & I-85	GA	not set	not set	evaluating 30 miles worth
95+	Marion, Cedar Rapids	Hwy. 100	IA	not set	not set	one side of road
Mid- 95	Eagle	State Hwy. 44	ID	1,600 lf	10 ft	3 sections: 300, 500 & 800 lf
96/97	Eagle	State Hwy. 55	ID	not set	not set	may not end up with walls
Not set	Napa	US 30	ID	not set	not set	in design
Spring 95	Streamwood	St. Hwy. 59	IL	1,435 lf	6-16 ft	one side of road
Fall 95	Hinsdale	St. Hwy. 83	IL	4,935 lf	6-14 ft	one side of road
Fall 95	Burr Ridge	I-55 at I-294	IL	1,760 lf	8-15 ft	one side of road
Fall 95	Naperville	St. Hwy. 59	IL	1,300 lf	14-18 ft	one side of road
96/97	Chicago	I-355 extension	IL	5,400 lf	15-25 ft	building with Toll Authority
98+	Not determined	I-90	IL	not set	not set	w/hwy widening projects
98+	Chicago	I-355 extension	IL	not set	not set	needs EIS
Not set	Carbondale	U.S. 51	IL	not set	not set	wants info on precast
Not set	Bloomington	Bus. Loop 55	IL	not set	not set	one side of road
Not set	Alton	I-310, Bypass	IL	not set	not set	one side of road
Spring 95	Hammond, Muenster, Other	I-80/94	IN	15,800 lf	16 ft	must match color Phases 1 & 2
95	Gary, Hammond, Others	I-80/94	IN	3,000 lf	17-19 ft	1 of 3 sections
96	Gary, Hammond, Others	I-80/94	IN	3,000 lf	17-19 ft	2 of 3 sections
98	Gary, Hammond, Others	I-80/94	IN	1,200 lf	14 ft	3 of 3 sections, part 1
98	Gary, Hammond, Others	I-80/94	IN	3-4,000 lf	20 ft	3 of 3 sections, part 2
98	Gary, Hammond, Others	I-80/94	IN	3,000 lf	16 ft	3 of 3 sections, part 3
1/95	Overland Park & Leawood	I-435	KS	2,500 lf	8-16 ft	in segements
3/95	Hopkinsville	Bypass	KY	not set	not set	one side of road
97	Covington	I-75	KY	not set	not set	one side of road
6/95	Shreveport	I-49	LA	19,000 lf	10 ft	1 of 8
6/95	Shreveport	I-49	LA	1,400 lf	10 ft	2 of 8

Bid Date	Location	Highway	State	Length	Height	Comments
6/95	Shreveport	I-49	LA	1,800 lf	10 ft	3 of 8
6/95	Shreveport	I-49	LA	4,500 lf	10-12 ft	4 of 8
6/95	Shreveport	I-49	LA	2,000 lf	10 ft	5 of 8
6/95	Shreveport	I-49	LA	1,300 lf	16 ft	6 of 8
6/95	Shreveport	I-49	LA	6,700 lf	20 ft	7 of 8
6/95	Shreveport	I-49	LA	1,000 lf	10 ft	8 of 8
1996	Milton, Quincy	I-93	MA	not set	not set	waiting for design contract
Not set	Ludlow	Mass. Turnpike	MA	2,840 lf	12-16 ft	on hold for funding
3/95	Farmington Hills	I-696	MI	not set	not set	on hold
4/95	Royal Oak	I-75	MI	not set	not set	just into design
7/95	Rochester Hills	St. Rte. 59	MI	not set	not set	in discussion
7/95	Grand Rapids	St. Rte. 6	MI	not set	not set	in discussion
10/95	Madison Heights	I-75	MI	not set	not set	in discussion
6/96	Pontiac	I-75	MI	not set	not set	was deferred
11/96	Detroit	I-75	MI	not set	not set	not in design yet
11/97	St. Clair Shores	I-94	MI	not set	not set	not in design yet
11/98	Ann Arbor	U.S. 23	MI	not set	not set	not in design yet
3/95	Fenton	Route 151	MO	2,200 lf	8-12 ft	two walls, one on each side
1995	Clayton	Hwy. 40	MO	not set	not set	probably one side of road
Not set	Ladue	Not set	MO	not set	not set	only in discussion
11/94	Mecklenburg	Indep. Blvd.	NC	5,737 lf	17 ft	5 pieces, brick, try for inserts?
9/95	Carteret	St. Rte. 24	NC	650 lf	12 ft	one side of road
10/95	New Hanover	Smith Creek Pkwy	NC	810 lf	16 ft	one side of road
11/96	Forsyth	I-40	NC	4,500 lf	17 ft	one side of road
10/98	Cumberland	US 13/S R.24	NC	1,360 lf	14 ft	one side of road
5/99	Cumberland	US 13/S R.24	NC	5,200 lf	16 ft	one side of road
1995	Omaha	I-80	NE	1,780 lf	8-16 ft	one side of road
Not set	Omaha	I-80	NE	500-600 lf	not set	one side of road
Not set	Omaha	I-80	NE	2,000+ lf	not set	one side of road
Not set	Omaha	I-80	NE	800-900 lf	not set	one side of road
9/95	Nashua	Everett Turnpke	NH	600 lf	15-18 ft	one side of road
2/96	Nashua	Everett Turnpke	NH	700 lf	12-14 ft	both sides of road, not opposing
2/96	Nashua	Everett Turnpke	NH	1,200 lf	15-18 ft	both sides of road, not opposing
2/97	Nashua	Everett Turnpke	NH	3,300 lf	15 ft	one side of road
10-11/94	Bayonne	NJ Turnpike	NJ	2,300 lf	12-18 ft	one side of road
6/95	Edison	NJ Turnpike	NJ	3,300 lf	12-18 ft	one side of road
6/95	Edison	NJ Turnpike	NJ	2,500 lf	12-18 ft	one side of road
end 95	Tom's River	Garden State Pkwy	NJ	not set	not set	waiting CAFRA approval
end 96	Woodbridge	NJ Turnpike	NJ	3,300 lf	12-18 ft	one side of road
end 96	Woodbridge	NJ Turnpike	NJ	2,100 lf	12-18 ft	one side of road
end 96	Woodbridge	NJ Turnpike	NJ	1,800 lf	12-18 ft	one side of road
end 96	Woodbridge	NJ Turnpike	NJ	1,100 lf	12-18 ft	one side of road
end 96	Woodbridge	NJ Turnpike	NJ	2,500 lf	12-18 ft	one side of road
96	Edison	NJ Turnpike	NJ	3,700 lf	12-18 ft	1 side of road
96	Edison	NJ Turnpike	NJ	1,900 lf	12-18 ft	1 side of road
97	Milltown	NJ Turnpike	NJ	590 lf	12-18 ft	one side of road
97	Edison	NJ Turnpike	NJ	1,600 lf	12-18 ft	one side of road
98	Secaucus	NJ Turnpike	NJ	1,400 lf	12-18 ft	one side of road
98	Mt. Laurel Township	NJ Turnpike	NJ	1,100 lf	12-18 ft	one side of road
98	Hightstown	NJ Turnpike	NJ	600 lf	12-18 ft	one side of road
98	Hightstown	NJ Turnpike	NJ	900 lf	12-18 ft	one side of road
98	Bordentown Township	NJ Turnpike	NJ	3,000 lin. ft.	12-18 ft	one side of road
98	Bordentown Township	NJ Township	NJ	800 lf	12-18 ft	one side of road
Not set	Union Township	Garden State Pkwy	NJ	not set	not set	study only so far
Not set	Saddlebrook Township	Garden State Pkwy	NJ	not set	not set	study only so far
1997	Edison	NJ Turnpike	NJ	470 lf	12-18 ft	one side of road
8/95	Albuquerque	I-40	NM	not set	not set	exposed aggregate both sides
94/95	Brewster/White Plains	I-684	NY	8,000 lin.ft	12-18 ft	precast, colored tan
early 95	Queens' County	Long Island Expwy	NY	2,000 lin. ft.	10-16 ft	both sides of road
1/95	Village of Westbury	Long Island Expwy	NY	4,000 lf	10-16 ft	both sides of road
2/95	Township of Oyster Bay	Long Island Expwy	NY	16,700 lf	15-24 ft	both sides of road
3/95	Nassau & Suffolk Counties	Long Island Expwy	NY	not set	not set	walls depend on public
Spring 95	Pelham	I-95	NY	1,800 lf	15-18 ft	one side of road
Spring 95	New Rochelle	I-95	NY	3,600 lf	11-14 ft	one side of road
Spring 95	Mamaroneck	I-95	NY	2,200 lf	11-14 ft	one side of road
Spring 95	Mamaroneck	I-95	NY	1,500 lf	11-14 ft	one side of the road

(Continued on page 16)

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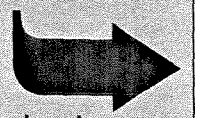

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PRESS RELEASE

FOR IMMEDIATE RELEASE

High noise levels generated by ground run-up testing of British Airways' jet aircraft at London's Heathrow Airport maintenance base have been reduced to 73 dBA at the airport boundary by installation of a special sound-absorbing NoiShield® Aircraft Run-Up Pen, designed and constructed by the British branch of Industrial Acoutics Company (IAC), headquartered in New York City.

The Run-Up Pen, close to offices and residential housing at the edge of BA's maintenance base, will enable the airline to conduct critical engine tests on its complete fleet of aircraft, including Boeing models 767, 757, 737, 747-400 and BA's airplane of the future, the new 777.

An assembly of IAC Modular Sound-Absorbing Noishield Steel Panels, with prerequisite sound transmission loss characteristics, the Pen occupies an area 75 meters wide by 67 meters long, with side and rear walls 12 meters high. A further benefit of the modular Run-Up Pen is demountability; should BA wish to relocate it, it can readily do so.

For the required blast resistance, reinforced load absorbing concrete panel sections are incorporated into the rear blast walls. All panels are fitted within a structural steel framework. For nighttime operations, the facility is equipped with high level floodlights annd under-wing lighting. In compliance with safety requirements, two emergency exit doors are included.

Sound surveys conducted by independent acoustical consultants at similar IAC Run-Up Pens installed in the United States and Germany demonstrate that such a facility's noise reduction performance is of the order of 19 to 23 dBA. Results will, of course, depend on locations of noise sources and residences in relationship to the barrier and the height of the barrier wall itself.

Completed in early 1995, the Pen's design and performance is currently being examined by other airlines, because it offers a highly cost-effective and reliable solution to the noise problems associated with aircraft ground run-up testing. A duplicate or similar Run-Up Pen, including foundations, can be constructed ready for operations in less than 12 months time. ■

Industrial Acoustics Company (IAC), a New York based international company founded in 1949, specializes in custom-designed aero-engine test facilities and a wide range of noise control products. IAC has subsidiaries in England and Germany and representatives worldwide. The Company has provided aircraft multi-engine test cells, high-houses, run-up pens, blast fences, test stands and data acquisition systems to military and commercial aircraft operators in many countries. The Company is currently working on aviation projects in the U.S., Pakistan, Kuwait, Korea, the U.K., Portugal and Holland.

For more information contact:
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Industrial Acoustics Company (IAC)
1160 Commerce Avenue
Bronx, NY 10462
Tel: 718 931-8000 Fax: 718 863-1138

Ground Run-Up Pen reduces noise in residential communities bordering London's Heathrow Airport. Designed, built and installed by Industrial Acoustics Company, this type of acoustic structure can be used by airlines, airports, aircraft and aircraft-engine manufacturers to reduce noise to tolerable levels in communities neighboring their respective facilities.

*(**Noise Barrier Construction Forecast**, continued from page 13)*

Bid Date	Location	Highway	State	Length	Height	Comments
Spring 95	Harrison	I-95	NY	2,200 lf	11-20 ft	one side of the road
Spring 95	Harrison	I-95	NY	2,200 lf	11-20 ft	one side of the road
Spring 95	Rye	I-95	NY	1,600 lf	11-20 ft	one side of the road
9/95	Township of Oyster Bay	Long Island Expwy	NY	not set	not set	in EIS
12/95	Brookhaven & Islip	Long Island Expwy	NY	not set	12-24 ft	both sides of road
12/95	Suffolk County	Long Island Expwy	NY	not set	12-24 ft	both sides of road
end 95	Queens	Long Island Expwy	NY	2,000 lf	18-20 ft	in community meetings
1995	Rochester	I-490 & SR 441	NY	not set	not set	both sides road
3/96	Elmira	Rte. 328 (new rd.)	NY	not set	not set	one side of road
late 96	Nassau & Suffolk Counties	Long Island Expwy	NY	not set	not set	in EIS
1996	Baldwinsville	New bypass	NY	not set	not set	under study
1/97	Town of Brookhaven	Long Island Expwy	NY	not set	not set	in EIS
1/97	Town of Brookhaven	Long Island Expwy	NY	not set	not set	in EIS
1997	Rochester	I-490	NY	not set	not set	both sides of road
11/98	West Windsor	Rt. 17	NY	not set	not set	under study
1998	Brewster	St. Rte. 22	NY	not set	not set	just starting design
1998	White Plains	I-287	NY	not set	not set	in EIS
1999	Rochester	I-490	NY	not set	not set	just returned to active status
Not set	Binghampton	I-81	NY	not set	not set	under study
Not set	Broome County	Rts. 17/434 &17C	NY	not set	not set	under study
6/95	Dayton	St. Rte. 49	OH	not set	not set	more than one site
7/95	Cleveland, Garfield Hts, Other	I-77 & I-480	OH	not set	not set	five locations, two both sides
7/95	Medina County	I-71	OH	not set	not set	more than one site
7/95	Akron	I-77	OH	not set	not set	two locations
7/95	Akron	I-76	OH	not set	not set	two locations
8/95	Akron	I-77	OH	not set	not set	three locations
9/95	Toledo	I-475	OH	not set	not set	three locations
12/95	Huber Heights	I-70	OH	not set	not set	two locations
1/96	Toledo	I-475	OH	not set	not set	five locations
1/96	Toledo	I-475	OH	not set	not set	seven locations

Bid Date	Location	Highway	State	Length	Height	Comments
6/96	Beachwood, Lyndhurst, Other	I-271	OH	not set	not set	14 locations
7/96	Warrensville Heights	I-480	OH	not set	not set	four plus locations
9/96	Vandalia	I-70	OH	not set	not set	more than one location
1/97	Springdale	I-275	OH	not set	not set	two locations, both sides
1/98	Cincinnati	I-71	OH	not set	not set	two locations
1/99	Springdale	I-275	OH	not set	not set	more than one location
Not set	Akron	I-77	OH	not set	not set	one location
Not set	Cincinnati	I-274	OH	not set	not set	three locations
Not set	Cleveland, Brooklyn, Brook Pk.	I-71	OH	not set	not set	seven locations
Not set	Cleveland & the suburbs	I-90	OH	not set	not set	five locations
Not set	Cleveland	St. Rte. 2	OH	not set	not set	one location
Not set	Cleveland, N. Olmstead, Other	I-480	OH	not set	not set	six locations
Not set	Chagrin Falls	U.S. 422	OH	not set	not set	one location
Not set	Cleveland	U.S. 422	OH	not set	not set	one location
Not set	Cleveland	I-77	OH	not set	not set	three locations
Not set	Cincinnati	I-275	OH	not set	not set	three locations
Not set	Batavia	St. Rte. 32	OH	not set	not set	one location
Not set	Lima	I-75	OH	not set	not set	three locations
Not set	Ashland	St. Rte. 42	OH	not set	not set	three locations
Not set	Columbus	I-70	OH	not set	not set	two locations
Not set	Cleveland metro area	I-270	OH	not set	not set	five locations
Not set	Cleveland	I-71	OH	not set	not set	five locations
Not set	Columbus	St. Rte. 315	OH	not set	not set	two locations
Not set	Dayton	I-75	OH	not set	not set	three locations
Not set	Chicago	I-355	OH	not set	not set	locations not known
Not set	Mayfield	U.S. 30	OH	not set	not set	nine locations
Not set	Toledo	St. Rte. 23	OH	not set	not set	four locations
Not set	Toledo	I-75	OH	not set	not set	six locations
Not set	Toledo	I-75	OH	not set	not set	seventeen locations
Not set	Cincinnati	I-275	OH	not set	not set	two locations
Not set	Norwood	I-71	OH	not set	not set	three locations

(Continued next page)

(Noise Barrier Construction Forecast, continued from page 17)

Bid Date	Location	Highway	State	Length	Height	Comments
Not set	Monfort Heights	I-74	OH	not set	not set	three locations
Not set	Cincinnati	I-75	OH	not set	not set	four locations
Not set	Toledo	I-475	OH	not set	not set	eleven locations
Not set	Cuyahoga Falls	St. Rte. 8	OH	not set	not set	four locations
Not set	Canton	St. Rte. 30	OH	not set	not set	two locations
Not set	Findlay	I-75	OH	not set	not set	two locations
Not set	Elyria/Lorain	I-57	OH	not set	not set	seven locations
Not set	Amherst, Avon	St. Rte. 2	OH	not set	not set	three locations
Not set	Weymouth	I-71	OH	not set	not set	three locations
Not set	Wadsworth/Seville	I-76	OH	not set	not set	four locations
Not set	Barberton	St. Rte. 21	OH	not set	not set	five locations
Not set	Bay View/Axtel	St. Rte. 2	OH	not set	not set	four locations
Not set	Middletown	I-75	OH	not set	not set	two locations
Not set	Beaver Creek	I-675	OH	not set	not set	one location
Not set	Kenton	U.S. 68	OH	not set	not set	one location
Not set	Wooster	U.S. 30	OH	not set	not set	one location
Not set	Troy	I-75	OH	not set	not set	one location
Not set	Canton	U.S. 30	OH	not set	not set	one location
Not set	Defiance	U.S. 21	OH	not set	not set	one location
Not set	Diamond	I-76	OH	not set	not set	one location
Not set	Madison/Willoughby Hills	St. Rte. 2	OH	not set	not set	one location
Not set	Akron	I-77	OH	not set	not set	one location
Not set	Akron	I-76	OH	not set	not set	one location
Not set	Cleveland	I-480	OH	not set	not set	one location
Not set	Norwood	I-562	OH	not set	not set	one location
Not set	Dodson/Sulphurgrove	I-70	OH	not set	not set	one location
3/98	Cincinnati	I-275	OH	not set	not set	two locations
Not set	N. Olmstead	St. Rte. 113	OH	not set	not set	three locations
Not set	Warren	St. Rte. 82	OH	not set	not set	three locations
Not set	Xenia	St. Rte. 35	OH	not set	not set	two locations
2000+	Oklahoma City	I-235	OK	not set	not set	will have several sections

Bid Date	Location	Highway	State	Length	Height	Comments
1996	Salem	Salem Daytn Hwy	OR	2,000 lf	12-16 ft	one side of road
4/98	Beaverton	Farmington Hwy	OR	6,500 lf	8-10 ft	one side of road
10/94	Lackawanna County	Lckwna Vly Hwy	PA	6,600 lf	4-14 ft	2 sides of road, exp aggregate
12/94	Reading	St. Rte. 3040	PA	200 lf	12 ft	one side of road
12/94	Reading	St. Rte. 3040	PA	200 lf	16 ft	one side of road
95-96	Bristol Township	I-195 & SR 413	PA	5,000 lf	10-16 ft	one side of road, exp aggregate
8/96	Bethlehem Township	Rte. 33 extension	PA	not set	not set	starting design
96	Lower Saucon Township	St. Rte. 33	PA	not set	not set	starting design
1/99	Reading	Warren St. Ext	PA	not set	not set	both sides road, several walls
Not set	Hollidaysburg	intersection	PA	not set	not set	controversial, battle over roadway
Not set	Kittanning	SR 28	PA	not set	not set	under study
Not set	Warrendale	I-79 & Penn Tpke	PA	not set	not set	under study
2000	N. Kingstown, E. Greenwich	Rt. 403 relocated	RI	9,200 lf	10-15 ft	3 sections of wall
Not set	Woonsocket, Lincoln, Other	Rt. 99	RI	not set	not set	under study
Not set	Columbia	I-26/I-20 interchge	SC	not set	not set	need funding
Not set	Columbia	I-26/I-20 interchge	SC	not set	not set	need funding
Not set	Columbia	I-26/I-20 interchge	SC	not set	not set	need funding
7/95	Nashville	Briley Pkwy	TN	6,000 lf	10 ft	both sides of road
11/94	Dallas	Hwy. 190	TX	7,790 lf	12 ft	1 of 2
11/94	Dallas	Hwy. 190	TX	4,272 lf	15 ft	2 of 2
5/95	Houston	Beltway 8	TX	not set	not set	in conjunction with the city
6/95	College Station	Business Rte. 6	TX	not set	8 ft	one side of road
8/95	Dallas	Hwy. 161	TX	130 lf	8 ft	one side of road
8/95	Dallas	Hwy. 161	TX	150 lf	12 ft	one side of road
8/95	Dallas	Hwy. 161	TX	510 lf	14 ft	one side of road
8/95	Dallas	Hwy. 161	TX	2,355 lf	12 ft	one side of road, 3 pieces
11/95	Lubbock	East/West Freeway	TX	1,650 lf	10 ft	possibly brick in precast
1995	Longview	Spur 63 Extension	TX	380 lf	8-10 ft	one side of road
early 96	Dallas	Dallas N Tollway	TX	not set	not set	10 sections of wall
6/96	Wylie	St. Hwy. 78	TX	401 lf	9 ft	one side of road

(Continued on page 20)

(Noise Barrier Construction Forecast, continued from page 19)

Bid Date	Location	Highway	State	Length	Height	Comments
6/96	Wylie	St. Hwy. 78	TX	800 lf	9 ft	one side of road
7/96	Houston	St. Hwy. 59	TX	not set	not set	both sides of road
10/96	Lubbock	East/West Freeway	TX	2,250 lf	10 ft	possibly brick in precast
10/96	Lubbock	East/West Freeway	TX	1,350 lf	11 ft	possibly brick in precast
8/97	Lubbock	East/West Freeway	TX	1,500 lf	9 ft	possibly brick in precast
8/97	Lubbock	East/West Freeway	TX	1,600 lf	11 ft	possibly brick in precast
8/97	Lubbock	East/West Freeway	TX	85 lf	13 ft	possibly brick in precast
1997+	Pharr	US 83/US 77	TX	not set	not set	with new construction
1997+	Pharr	US 83/US 77	TX	not set	not set	with new construction
Not set	Dallas	US 75/I-635	TX	1,500+ lf	14-20 ft	opposite sides
Not set	Dallas	US 75/I-635	TX	1,500+ lf	14-20 ft	opposite sides
10/94	Salt Lake City	I-215	UT	4,000 lf	12 ft	3 sections of wall
Mid- 95	Salt Lake City	I-15	UT	10,500 lf	not set	hiring consultant
8/95	Provo	St. Rte. 189	UT	800 lf	12 ft	one side of road
1996	Salt Lake City	Bangerter Blvd.	UT	not set	not set	several walls
1998	Provo	I-15	UT	not set	12 ft	both sides of road
10/94	Norfolk	I-64	VA	2,300 lf	18 ft	one side of road
10/94	Norfolk	I-64	VA	2,600 lf	19 ft	one side of road
1/95	Roanoke	Roue 117	VA	2,800 lf	8-18 ft	one side of road
4/95	Norfolk	I-264	VA	600 lf	14 ft	one side of road
4/95	Norfolk	I-264	VA	1,060 lf	11-13 ft	one side of road
4/95	Norfolk	I-264	VA	5,960 lf	9-21 ft	one side of road
4/95	Norfolk	I-264	VA	5,200 lf	7-20 ft	one side of road
4/95	Norfolk	I-264	VA	2,700 lf	10-16 ft	one side of road
4/95	Norfolk	I-264	VA	2,950 lf	12-15 ft	one side of road
10/95	Troutdale	I-24	WA	900 lf	12-14 ft	one side of road
11/95	Salem	Pacific Hwy.	WA	6,070 lf	10-16 ft	both sides of road
12/95	Covington, Maple Valley	St. Rte. 18	WA	8,000 lf	12 ft	not set
end 95	Sea Tac	I-5	WA	2,000 lf	8-14 ft	one side of road

(Noise Barrier Construction Forecast, conclusion)

Bid Date	Location	Highway	State	Length	Height	Comments
1995	Spokane	St. Rte. 90	WA	7,035 lf	12 ft	both sides of road
2/96	Seattle	St. Rte. 167	WA	7,000 lf	16 ft	not set
end 96	Federal Way	I-5	WA	4,000 lf	8-14 ft	one side of road
10/97	Portland	I-205	WA	6,850 lf	15 ft	both sides of road
1997	Beaverton	Sunset HwyIntrchg	WA	3,000 lf	12 ft	both sides of road
1997	Spokane	St. Rte. 90	WA	8,300 lf	12 ft	both sides of road
Not set	Redmond	St. Rte. 202	WA	815	5-10 ft	one side of road
Not set	Seattle	St. Rte. 5	WA	not set	not set	not set
Not set	Seattle	St. Rte. 9	WA	not set	not set	not set
Not set	Seattle	I-5	WA	not set	10-14 ft	one side of road
Not set	Seattle	St. Rte 520	WA	not set	10-14 ft	one side of road
Not set	Seattle	St. Rte. 405	WA	not set	10-14 ft	one side of road
Not set	Aberdeen, Holquiem	U.S. 101	WA	not set	not set	not set
Not set	Tacoma	I-5	WA	not set	not set	not set
2/96	Seattle	St. Rte. 525	WA	not set	not set	not set
1997	Seattle	St. Rte. 527	WA	not set	not set	not set
Not set	Redmond	St. Rte. 202	WA	625	3-12 ft	one side of road
1995	Appleton	U.S. Hwy. 10	WI	2,100 lf	8-25 ft	one side of road
1995-97	Milwaukee County	I-94/I-43	WI	9,500 lf	not set	in planning
1996	Appleton	U.S. Hwy 41	WI	4,500 lf	10-15 ft	one side of road
1996	Wisconsin Rapids	St. Trunk Hwy. 54	WI	1,000 lf	10 ft	one side of road
1997	Madison	I-90	WI	8,000 lf	20-30 ft	one side of road
1998	Madison	I-90/94	WI	1,000 lf	18 ft	one side of road

ED. NOTE: This completes the update of the Noise Barrier Construction Forecast with the exception of a few more listings from Colorado, Arizona and Washington, as well as all listings for California. LEAP Associates, Inc. are endeavoring to obtain this material, and we will publish as soon as we receive it. Again, we would like to thank the people at LEAP for their hard work in accumulating these listings and for providing it to our readers. ■

PRESS RELEASE

FOR IMMEDIATE RELEASE

The Scott System, a pioneer in the development of elastomeric form liners for architectural concrete and the Brick Precast System, has introduced two new products for thin brick facade treatment. Brick Grids are single-use liners developed for the site-cast market to integrally cast thin brick into any size panel. Brick Grids work in a similar fashion to the liner for precast applications, but instead of using a reusable rubber liner, the Grids are manufactured in 2' x 4' pieces and are easily cut to size with scissors and are placed in the form. Thin bricks are then inserted into the grid pockets, followed by reinforcing and concrete. Once the concrete is cured, the Grids are easily stripped and the panel is cleaned. The result is a tilt-up panel with integrally cast brick!

The second product, called Brick Snaps, is the most innovative of the two; a simple and cost-effective method developed especially for cast-in-place applications, the brick-clad panels look just like field-laid masonry with tooled mortar joints. Brick Snaps include three components: concrete retarder paper, thin brick, and a plastic carrier that holds the two in place. The carriers are snapped together in either a running bond or soldier course pattern. While connecting the Snaps to fit the panel size requirements, the assembly is pin-stapled in the process to the vertical form. Concrete is poured, cured, and the Snaps are stripped and discarded, leaving a vertically cast panel with integrally cast thin brick; an excellent application for sound and retaining walls. ■

(For more information, contact Dana Scott at the Scott System, Inc. in Denver CO, by telephone: 303 371-9580 or by fax at 303-371-8614).

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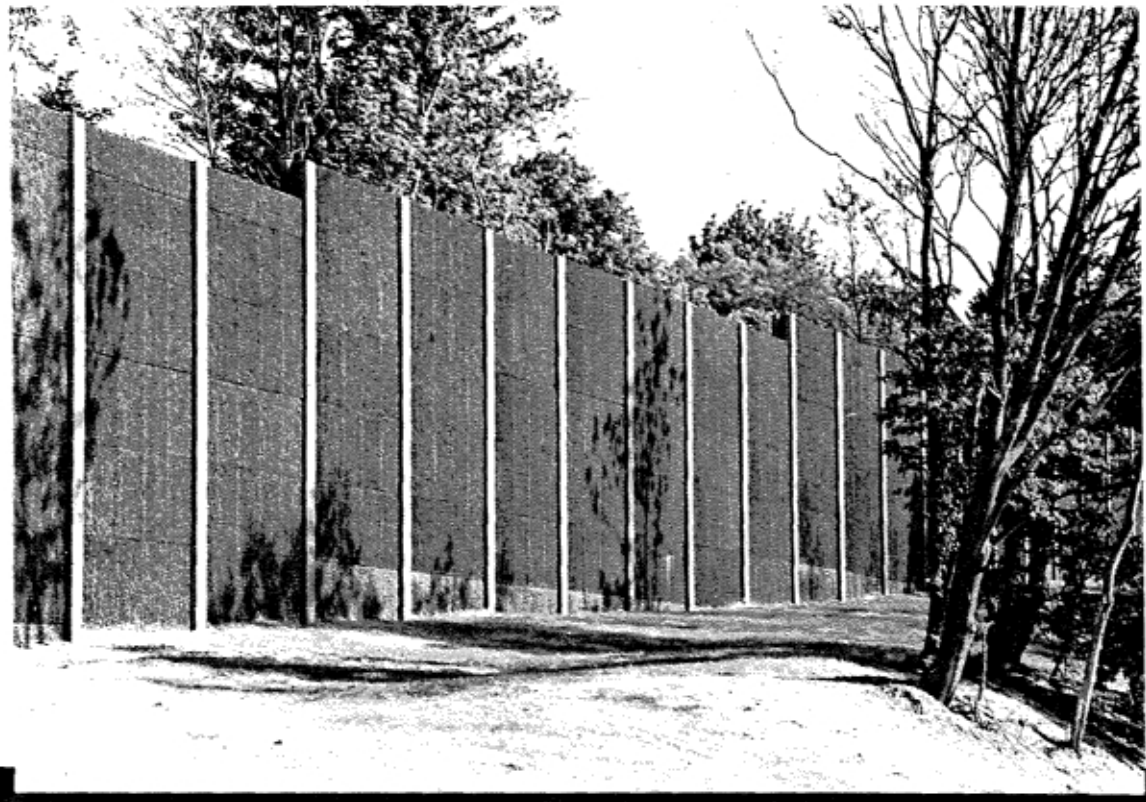

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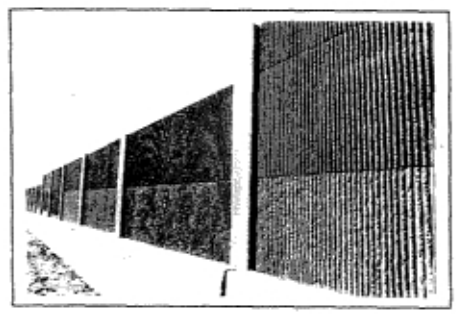

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