

*We have one goal — improving the noise and vibration quality of our customers' products. Roush delivers innovative, effective noise and vibration control solutions. By combining advanced analysis capabilities, comprehensive engineering services, and state-of-the-art facilities, Roush has become a proven partner in identifying and resolving challenging noise and vibration issues. Backed by the diverse capabilities of the Roush family of companies, we are uniquely equipped to provide turnkey noise and vibration solutions.*

12011 Market St.  
Livonia, MI 48150  
Phone: 734-779-7400 or  
800-486-3637  
Fax: 734-779-7903  
NVH@roushind.com

[www.roushind.com/nvh](http://www.roushind.com/nvh)

## Aerospace NVH Engineering

Roush is a leading supplier of noise and vibration (NVH) control engineering services to the aircraft and aerospace industries. Our engineering staff continues to develop state-of-the-art experimental and analytical methodologies to provide comprehensive solutions to the complex noise and vibration issues in these fields.

Roush provides solutions to customer concerns on a variety of vehicles, ranging from small turboprop aircraft to helicopter, satellites and spacecraft. We combine our NVH expertise with Roush's extensive fabrication and engineering services to help our customers build winning products.

Our training and experience enables us to develop innovative solutions without compromising performance. We support product development from the initial design stage through production.

Our services include:

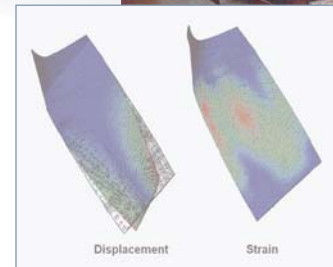
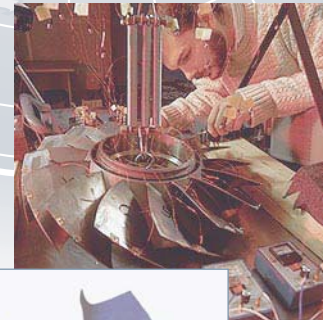
- Developing improved designs
- Finding causes of noise and vibration issues
- Comprehensive CAD/CAM/CAE
- FEA/BEA/CFD/thermal/kinematic analyses
- Statistical energy analysis/specialty vibration
- Gear noise evaluation/solutions
- Aeroacoustics/fan noise
- Custom damping/tuned absorber treatments

**Other laboratory support capabilities include:**

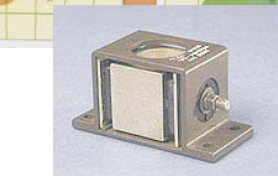
- Sound quality
- Modal/operating deflection shape analysis
- Noise path analysis
- Viscoelastic and acoustic materials laboratory
- Customized data acquisition and analysis
- Quiet room/reverberation room tests
- High g/environmental shaker testing



Operating Deflection Shape Analysis



Modal Displacement and Strain Distributions



Tuned Vibration Absorbers