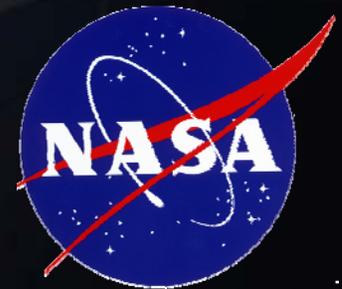


***Agency Hearing Conservation
Buy-Quiet/Quiet-by-Design Program Status***

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Discussion topics

- Review NASA Buy-Quiet and Quiet-by-Design requirements (in NPR 1800.1B Chapter 4.9)
- Report current status of field center programs
- List progress goals for next 6 and 12 months
- Clarify HQ roles and responsibilities
- Present HQ past year activities and progress
- Discuss projects in progress and in the queue

What are BQ/QBD requirements?

- Each field center must develop and implement a center-specific program with the following key goals:
 - “Include noise emissions with technical and performance criteria*** when purchasing or designing new equipment that is expected to generate noise emission levels of concern for hearing conservation (80 dBA and above).”
- Noise emissions shall be considered equally with all other functional and EH&S requirements.

What's the *real* goal?

- ☐ Raise awareness of the need to *intentionally* consider noise emissions of new equipment and systems
- ☐ Encourage behaviors in the spirit of the requirement
- ☐ Create a culture where noise-exposure-related consequences of every design and purchase decision are anticipated
- ☐ Promote “best practices” approach when non-hazardous noise conditions affect communication and safety

Buy-quiet strategy

- ☐ Noise emission specification language included in procurement documents
 - ☐ Vendor assumes burden of meeting spec
 - ☐ Vendor must provide verification data
- ☐ Smaller purchases (e.g., PCARD) that don't involve formal specifications consider noise emission criteria during “shopping” phase
- ☐ User is responsible for specifying **reasonable and achievable** equipment noise *emission* limit that supports noise *exposure* limits

Quiet-by-design strategy

- ≡ NASA/contractor assumes technical burden “in-house”
- ≡ Applies to engineering of gas flow systems
 - ≡ End-user involvement often requires graduate-level engineering knowledge (e.g., gas dynamics, aero-acoustics)
 - ≡ Buy-Quiet program output (noise emission limits) provides overall goal and specifications for purchased equipment
- ≡ Applies to engineering of research and office spaces
 - ≡ End-user involvement is expected “best-practices” architectural and engineering design for inhabited spaces
 - ≡ Also requires understanding of hearing conservation goals

Whose responsibility is it?

- ☐ Responsibility is placed on the entire center and is shared by all levels of management and all organizations, including facilities, engineering, and research
- ☐ Contractor organizations must have own program or participate in NASA program
- ☐ Identified POC at each center (in EH&S organization) leads effort and communicates with HQ
- ☐ Facilities (MAF, PBS, WFF, WSTF) considered independently for purposes of reporting to HQ

What do centers need to do?

- ☐ Interpretation of “include noise emissions” is left up to each field center
- ☐ Each center needs to develop and implement procedure(s) that implement requirements
- ☐ Program implementation should be center-specific for best results
 - ☐ Organization, communications, and process
 - ☐ Technical and process tools and documentation
 - ☐ Process for documenting and approving “waivers”
- ☐ HQ providing support and common resources

Communication with center teams

- ☰ Centers named POCs and teams after 07 OH conference
- ☰ Needs assessment telecons conducted during Q1 FY 08
 - ☰ Collected center-specific operational and organizational information
 - ☰ Compiled composite “wish list” and common concerns
 - ☰ Identified low-noise procurement process guidance as #1 priority
- ☰ Status assessment conducted via email 03/08
 - ☰ Presented at NASA Safety Directors’ OH Managers’ meeting
 - ☰ Guy presented at AIHCe NASA breakout session
- ☰ POCs and teams/roles updated via email 06/8
 - ☰ Facilities (MAF, PBS, WFF, WSTF) now tracked independently
- ☰ Status telecons held 06/08
 - ☰ Presenting results at 08 OH conference
 - ☰ **Please note any errors in chart and send to my attention**

Center/facility team rosters

Center/Facility	POC	POC's Supervisor	POC's COTR, if contractor	Other EH&S Team Members	Others to include as cc's
ARC	Danielle Prohaska	Diana Harrington	Marjorie Glazer	John Steen, Ramsey Razik, Diana Harrington, Zack Likins	Stan Phillips; Jan Babcock
DFRC	John Piatt	Dan Mullen		Bette Davis, Kathleen Walter	Gregg Bendrick
GRC	Marne Bold	Betty Hodgson	Dan White	Betty Hodgson	Dave Forth
GSFC	Jeff Dalhoff	Phillip Nessler		Bruce Lippy, Mike Cooper, Pat Hancock, Roy Deza	Jay Traverso
JPL	Bill Hyatt	Lynne Lee	Randy Aden	Lynne Lee, Robin Precie	Patricia Smith-Araki, Carolyn Chester
JSC	Angel Plaza	Sean Keppta		Denton Crotchett, David Rose, Richard Danielson, Christine Morgan	Romie Richardson
KSC (except USA)	Mike Cardinale	Dave Tipton		Dave McDemott, Gary Bergstrom, Jim Taffer, Joe DeGano, Robin Kramer	Michael Flynn, Charles Smallwood
KSC (USA)	Esau Perez	Don Paniale	Richard Schmidgall	Wendy Benison, Don Paniale	Arthur Edwards
LaRC	Pat Cowin	Jose Caraballo		Brian VanDevender	Carter Ficklen
MAF	Alan Rovira	Greg Lain	Steve Turner	Yaisa Wilson, Steve Turner	
MSFC	Jamie Schagene	Eddie Phillips	David Thaxton	David Thaxton, Eddie Phillips	
PBS	Amy Bower	Manny Dominguez		Robert Puzak, Thomas Keating	David Stringer, Paul Barnhart, Boyd Vance
SSC	Mike Blotzer	Maria Benigno		Dan Dobrinen, Mack Kersanac	Herman Woessner, Randy Canady
WFF	Marv Bunting	Les Brimer	Robert Nock	Glenn Liebig, Todd Thornes	Florence Smith
WSTF & El Paso	Ray Gruben	Denton Crotchett	Sean Keppta		

Expected progress at this point (07/08)

BQ/QBD goals #1 - #6

1. Center policy reflects BQ/QBD requirements as stated in NPR 1800.1B.
2. Management (OH up through Center Director) is aware of BQ/QBD requirements.
3. Facilities and engineering management are aware of requirements and their specific responsibilities.
4. Procurement management is aware of requirements.
5. A center-wide team is forming to develop procedures for implementing BQ/QBD.
6. Hearing conservation training includes mention of BQ/QBD requirements

Center status chart

(per 06-08 telecons)

- ☰ Indicates cumulative progress on goals #1- #6
- ☰ Uses Y/N status (except for #1: C, I, N)
- ☰ Notes additional activities from past 6 months
- ☰ Please look for errors and omissions
- ☰ **Let me know ASAP what's not correct**
- ☰ Corrections communicated this afternoon will be made before posting/distribution

Center status per 06-08 telecons

		1	2	3	4	5	6	
Center/Facility	Telecon participants 06/08 (*POC)	Policy update status (C=complete I=draft stage or in review/approval N=not drafted)	Management briefing status	Facilities and Engineering Briefing status	Procurement briefings status	Begin to solicit program participants outside EH&S?	Incorporate BQ/QBD into hearing conservation training	Other actions initiated
ARC	Danielle Prohaska*; Diana Harrington, Ramsey Razik, Zack Likins	N (?)	N (?)	Y	Y	N	N	Intern project; procurements noted.
DFRC	John Piatt*	I	N	N	Y	N	N	Procurements noted
GRC	Marne Bold*	C	N	N	Y	Y	Y	Supervisor training. Involvement in design projects.
GSFC	Jeff Dalhoff*, Mike Cooper, Roy Deza	C	N	N	N	N	N	
JPL	Bill Hyatt*, Lynne Lee	C	Y	Y	Y	Y	Y	
JSC	Angel Plaza*, Denton Crotchett, Dick Danielson, David Rose	C	Y	Y	N	I	Y	BQ/QBD requirements were included in a recently awarded contract. Have asked contractors to assign POCs. Facility design involvement.
KSC (except USA)	Mike Cardinale*; Gary Bergstrom	C	Y	N	N	N	N	
KSC (USA)	Esau Perez*	C	Y	N	N	N	Y	Noise levels are part of procurement checklist. Ares and CEV have been soliciting advice.
LaRC	Pat Cowin*	N	Y	N	N	N	N	Have provided input to some purchases.
MAF	Alan Rovira*	I	Y	Y	N	N	Y	Have also briefed R&A and construction.
MSFC	Jamie Schagene*	C	N	N	N	N	N	
PBS	Amy Bower*	C (use GRC)	Y	Y	N	Y	Y	
SSC	Mike Blotzer*, Dan Dobrinen	N	N	Y	Y	Y	N	
WFF	Marv Bunting*	C (use GSFC)	N	N	N	N	N	Procurements noted.
WSTF & El Paso	Ray Gruben*	C	I	I	I	I	I	

Next 6-month goals #7 - #11 (expected progress) for 1/09 telecon

- Incomplete (as of 07/08) goals (#1 - #6) are met.
- 7. All major relevant contractor organizations are aware of BQ/QBD requirements.
- 8. Each major relevant contractor organization has identified a POC for communication purposes.
- 9. A mechanism is in place for 2-way communication with contractor POCs and other center stakeholders.
- 10. A center-wide team is established and is developing procedures for BQ/QBD.
- 11. Facilities/engineering staff are aware of BQ/QBD.

12-month goals #12 - #15 for telecon prior to 07/09 OH conference

12. Center-specific procedure(s) are drafted and undergoing review/approval if not already finalized
13. Procedure(s) have been implemented, at least on a small scale, for testing (regardless of status of #12)
14. Stakeholders have been briefed on procedures
 - ☐ Management
 - ☐ Facilities
 - ☐ Procurement
 - ☐ Hearing conservation program participants
 - ☐ Contractors
15. Training has been provided to users of tools

What centers want from HQ (updated per 06/08 telecons)

- ≡ Lists of equipment that should be captured in BQ process
- ≡ Examples of available noisy vs. low-noise equipment
- ≡ 1-page, simple advocacy materials for further distribution
- ≡ Case studies of BQ/QBD programs in other industries/agencies
- ≡ Quantitative information (noise emissions, costs, etc.)
- ≡ Examples of lessons-learned from not using BQ/QBD
- ≡ Templates, forms, processes, specs to use directly or adapt
- ≡ More policy (e.g., beyond OCHMO) “teeth” for BQ requirements
- ≡ HQ Facilities support and “push” for center Facilities personnel
- ≡ Step-by-step guidance for low-noise procurement
- ≡ Computer-based training and awareness briefings
- ≡ Training via SATERN that can be tracked

Centers' request: information-sharing between centers

- ☰ Contract language
 - ☰ Specifications
 - ☰ Policy documents
 - ☰ Procedures developed
 - ☰ Program implementation process
 - ☰ Forms, templates
 - ☰ Lessons-learned from not using BQ/QBD
 - ☰ Success stories and case studies
- ☰ Please let me know if you're interested in participating in a focus group or steering committee

Clarification of HQ roles

☰ My role:

- ☰ Providing resources
- ☰ Providing training and training materials
- ☰ Recommending external resources
- ☰ Sharing information across centers
- ☰ Communicating expectations
- ☰ Assessing and reporting center progress
- ☰ Offering feedback and input

☰ Guy's role:

- ☰ Policy-setting
- ☰ Establishing expectations
- ☰ Evaluating center progress
- ☰ Auditing center programs
- ☰ Issuing judgments
- ☰ Receiving complaints
- ☰ Considering pleas
- ☰ Enforcing requirements
- ☰ Communicating with your management when needed

Procedure for next status telecons: January 09

- Will assess progress on goals #1 - #6 and #7 - #11
- Will distribute self-assessment questionnaire in early December
- Complete assessment and return it by end of December with 3 preferred telecon times
- Telecons to take place January 19 – 30
- POCs may choose to include team members
- If you have concerns, please talk to Guy

Advocating broader HQ-level policy support for BQ/QBD

- ≡ Held HQ-level meetings and telecons
 - ≡ Carl Weber, Office of Procurement
 - ≡ Harriet Ross, Facilities Engineering and Real Property Division
 - ≡ Jon Mullin, Safety and Assurance Requirements Division
- ≡ Addressed specific center requests for more “teeth”
 - ≡ Officially require BQ/QBD programs for contractors
 - ≡ Capture full range of procurement sizes and mechanisms
 - ≡ Identify and propose modifications to reflect BQ/QBD in relevant agency policy documents beyond NPR 1800.1B
 - ≡ Communicate and support BQ/QBD requirements and responsibilities through established networks of end users

HQ Procurement Discussions

- ☐ Short term goal: propose modification to [NF 1707](#) (Hazardous Procurements form) to add line for noise emissions
 - ☐ Likely to be accomplished in few months
- ☐ Mid-term goal: propose adding BQ/QBD language and references to NPR 1800.1B to NPR 8715.3C
 - ☐ Would require agency-wide advocacy and NODIS process
- ☐ Longer term goal: propose adding reference to new sections of NPR 1800.1B (not just BQ/QBD language) to NASA FAR supplement (1823.7001) Safety and Health Clause (1852.223-70) and plan provision (1852.223-73)
 - ☐ Would take > 1 year and require circulating updated NPR 1800.1B and proposed FAR supplement changes for public comment

HQ facilities discussions

- ☐ QBD requirements should already be addressed as best practices architecture/engineering principles in common use agency-wide
- ☐ Lapses or exceptions (e.g., inappropriate space usage) represent opportunities to reinforce message and tie to BQ/QBD requirements
 - ☐ HQ requested identification of specific examples
- ☐ QBD information could be incorporated into CoF course
- ☐ QBD requirement could be inserted into NPR 8820.2F (Facility Project Requirements)
- ☐ HQ feels that Specsintact is not appropriate vehicle for setting equipment noise emission limits at this time
- ☐ LEED certification opportunities may provide some incentive
- ☐ HQ will identify existing agency-wide networks of facilities personnel as obvious contact points for field center POCs (LEED, ECIC, CoF)
- ☐ Recommended similar discussions with Systems Engineering and Operations/Maintenance

NF 1707 proposed modification



National
Aeronautics and
Space
Administration

Special Approvals and Affirmations of Requisitions

CENTER

REQUISITION NUMBER

REQUESTING ORGANIZATION

NAME AND SIGNATURE OF APPROVER

DATE

SECTION 6 — SAFETY

THIS PROCUREMENT DOES NOT ACQUIRE ANY HAZARDOUS MATERIALS NOR ARE HAZARDOUS MATERIALS USED IN PRODUCTION OR PERFORMANCE OF SERVICE UNDER THIS PROCUREMENT

OR

THIS PROCUREMENT IS FOR, OR PERFORMANCE REQUIRES THE USE OF, ANY OF THE FOLLOWING:

- EXPLOSIVES OR PYROTECHNICS
- RADIOACTIVE MATERIALS AND EQUIPMENT WHICH MAY EMIT IONIZING RADON
- CONTROLLED SUBSTANCES AND PRESCRIPTION DRUGS
- EQUIPMENT THAT EMITS AIR CONTAMINANTS OR WASTE WATER DISCHARGE
- AIR POLLUTANTS (E.G. REGULATED GASES, VOLATILE SOLVENTS, PAINTS AND COATINGS WITH VOC)

***Equipment emitting sound levels equal to or greater than 85 dBA, measured at 1 meter.**

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Additional HQ support activities

- Distributed a Buy-Quiet/Quiet-by-Design overview PowerPoint presentation
 - Intended for use by center POCs and teams in advocacy, employee training, and management briefings.
 - Please use this and let me know what other slides you'd like
 - Awareness briefings are appropriate, regardless of policy status!
- GRC funded FY 08 project: BQ "Process Guidance"
 - Intended to assist users with procurement process
 - Expected release: late fall, 2008

BQ/QBD process guidance (call this “Quiet NASA” Project??)

- ≡≡≡ Modular structure will encompass all procurement and design categories
 - ≡≡≡ Types of equipment and facilities/systems
 - ≡≡≡ Purchase and design mechanisms
- ≡≡≡ Modules to be developed in stages, as funding allows
- ≡≡≡ Web-based on GRC site, publicly-accessible
 - ≡≡≡ Links to external resources
 - ≡≡≡ Internally menu-driven
- ≡≡≡ Current (first) task will develop structure and one module
 - ≡≡≡ Will focus on Buy-Quiet process
 - ≡≡≡ Will incorporate updates of existing BQ/QBD resources
 - ≡≡≡ Resulting module will be one integrated tool

Buy-quiet process module

- ≡ Modular in structure for flexibility and broad use
- ≡ Will provide guided path through process
 - ≡ Identifying relevant purchases
 - ≡ Researching a low-noise purchase
 - ≡ How to request noise emission data from vendors
 - ≡ Evaluating data and making comparisons
 - ≡ “Outboard” noise control as an alternative to low-noise equipment
 - ≡ Assessing cost and exposure impact of purchase options
 - ≡ Documenting process, decisions, and impact
- ≡ Customizable forms, templates, checklists, and specifications for download and printing

Planned HQ support activities

- ≡≡ Prepare and distribute advocacy materials
 - ≡≡ Simple process and informational flyers
 - ≡≡ Case studies from industry, military, and other agencies
- ≡≡ Provide information on availability and \$/ΔdB for low-noise products
- ≡≡ Establish web-based distribution of resources
 - ≡≡ PowerPoint presentations
 - ≡≡ Technical tools
 - ≡≡ Links to external resources and vendors
- ≡≡ Establish information-sharing mechanism between centers
- ≡≡ Develop and distribute hearing conservation training resources



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Noise Control

NASA Glenn Research Center has developed a number of unique solutions to our industrial noise control challenges. We offer these as resources that may provide ideas to inspire solutions to noise control problems faced in other industries and work environments. These solutions are not intended to replace the services of a qualified noise control engineer, nor are they intended to be adopted without modification.

More information on assessing, developing, and implementing an industrial noise control project may be found in the publications below:



Cooper, Beth A., Hange, Donald W. and Mikulic, John J. "Engineering Solutions to Reduce Occupational Noise Exposure at the NASA Glenn Research Center: A Five-Year Progress Summary (1994-1999)." Proceedings of Inter-noise 1999. (.pdf file)



Cooper, Beth A. "In-Plant Noise Exposure Management for an Industrial Process Air System." Proceedings of Noise-Con 1996. (.pdf file)



Danielson, COL R.W. and Cooper, B.A. "Promoting a noise control program: Resources for successfully advocating a low-noise environment." Proceedings of Inter-noise 2002. Dearborn, MI. 19-21 Aug. 2002. (.pdf file)

Related media



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NASA Glenn Research Center Training Resources

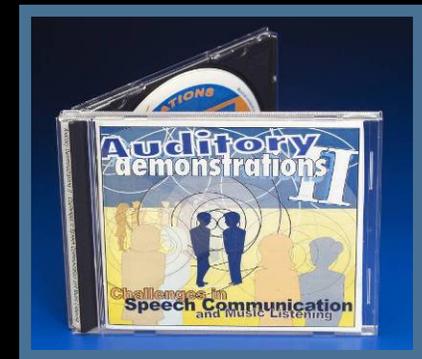
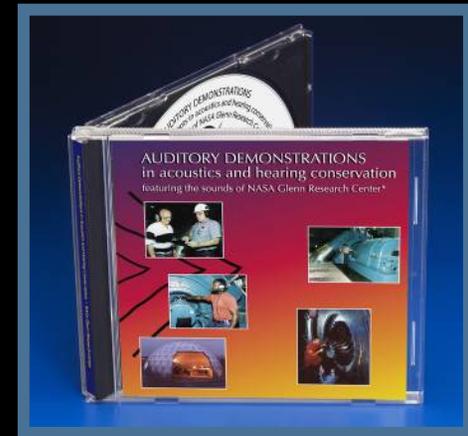
Free educational resources that promote:

hearing loss prevention

low-noise advocacy

Request them on-line:

<http://acousticaltest.grc.nasa.gov>



Hearing Conservation Game for
Employee Training

Action Items (for POCs)

- ☰ Complete Goals #1 - #6 and communicate progress
- ☰ Work on meeting Goals #7 - #11
 - ☰ Incorporate major relevant contractor organizations
 - ☰ **Communicate POC names to me**
 - ☰ Assemble a team and start developing your program
 - ☰ Establish an internal 2-way communication mechanism
 - ☰ Continue to brief stakeholders on requirements and on your program as it develops
- ☰ Adapt and use the PowerPoint slides to brief stakeholders, regardless of policy status
- ☰ BQ/QBD concept is very similar to “green” and “sustainable” engineering, so explore those connections and look for synergies!

Communications

- ☐ Communicate team role changes and additions
- ☐ Add recipients to my distribution list as appropriate
- ☐ Send progress updates on goals as they're accomplished, if you wish
- ☐ Send me news of your success stories
- ☐ Send me a paragraph about any “lessons-learned” from non-application of BQ/QBD
- ☐ Let me know of any external resources and relevant news/information that might benefit other centers

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If the answer is "nothing much", consider yourself lucky. Environmental noise causes hearing loss, difficulty concentrating, problems sleeping and excessive fatigue for millions of Europeans.

And although we'll never fully eradicate noise pollution, being aware of the problem is the first step towards combating it. That's why the League of hard of hearing is sponsoring the 13th Annual International Noise Awareness Day on April 16th. It's why AEG-Electrolux is installing noise-level meters in five European cities. And it's why we pride ourselves on our ability to engineer laundry appliances that perform in virtual silence.

Start dB meter



Menu Previous City **Madrid** Next City View all cities



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show location

56 dB
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Madrid

show location

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