

SUMMARY OF FAA NOISE IMPACTS RESEARCH WORKSHOPS

Presented to: Aviation Noise Impact Roadmap Meeting

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Date: April 19, 2011



Federal Aviation
Administration



Motivation for Workshops

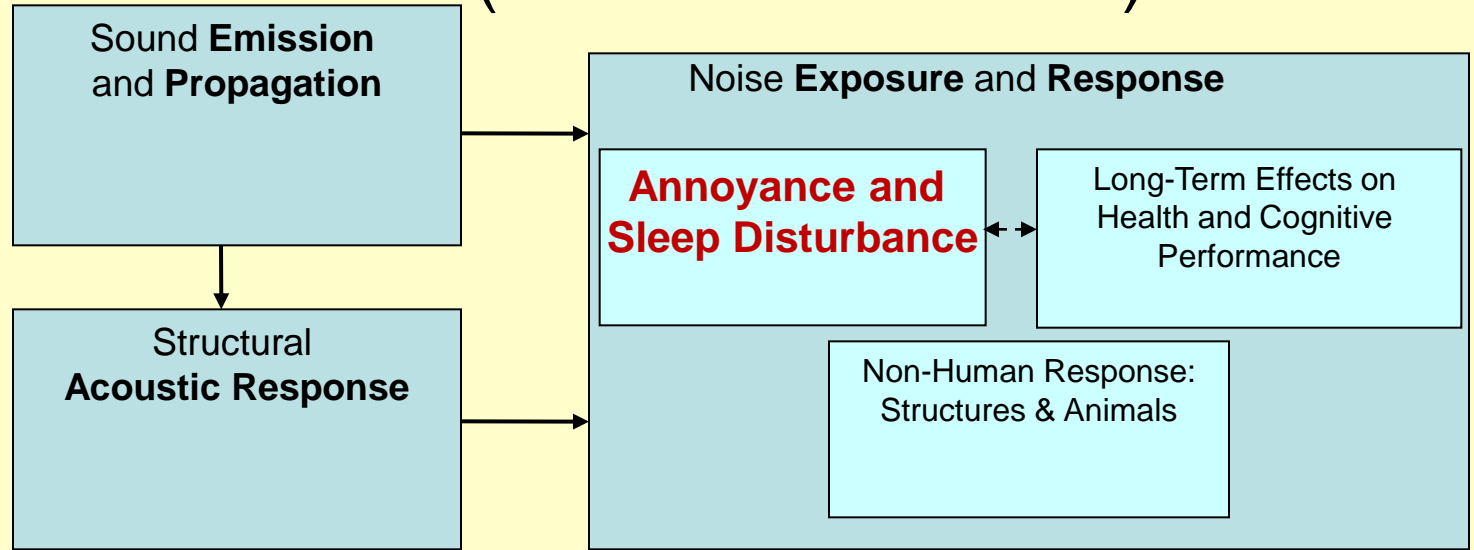
- **Expected Increase in Air Transport Capacity.**
- **Current FAA Noise Compatibility Policy based on early studies, needs to be updated.**
- **To update the policy, research on increased understanding about aircraft noise and its effects is needed.**



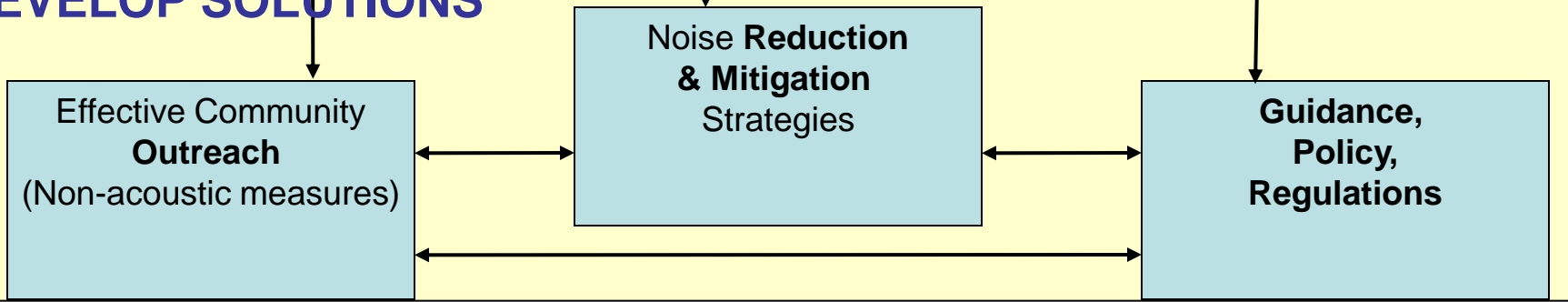
FAA Noise Research Framework

UNDERSTAND PROBLEM

(Characterize noise)



DEVELOP SOLUTIONS



Forum and Workshops

- **1st Workshop - International Forum**
 - Ottawa, Canada (August 27, 2009)
 - Defined Basic Research Issues
- **2nd Workshop**
 - Washington, D.C. (December 11-12, 2009)
 - Discussed Research Roadmap Concepts
- **3rd Workshop**
 - San Diego, CA (March 4, 2010)
 - Solicited Comments on Research Roadmap Projects

Detailed info is available at *faa.gov* and *fican.org*



Planning Panels

Annoyance:

- Kenneth Hume (Manchester Metropolitan U.)
- Sandy Lancaster (DFW airport)
- Arlene Mulder (Mayor of Arlington Heights, IL; ONCC)
- Paul Schomer (Consultant)
- Kevin Shepherd (NASA)
- Catherine Stewart (US Army)

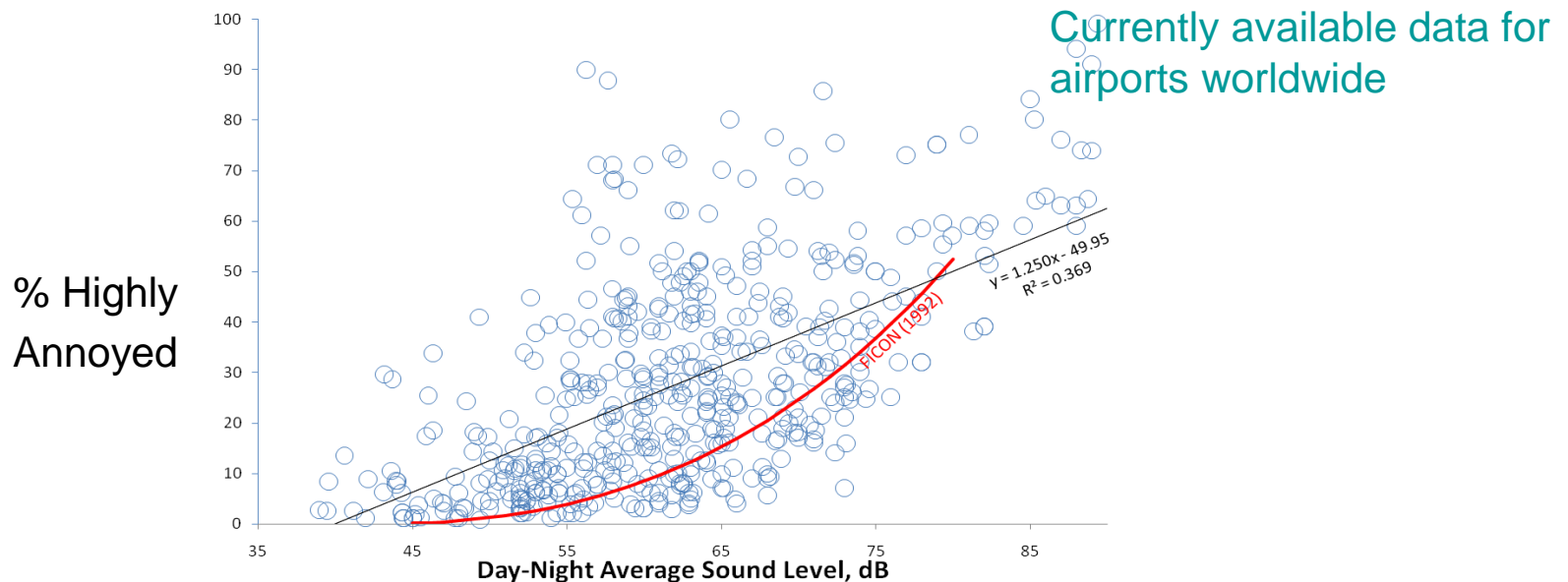
Sleep Disturbance:

- Mathias Basner (U Penn)
- Patricia Davies (Purdue U.)
- Jim Fields (US researcher)
- Barbara Griefahn (TU Dortmund U.)
- Nick Miller (Consultant)



Key Issues–Annoyance

- How well does FICAN* relationship between annoyance and DNL apply to US airport communities today?



* FICAN: Federal Interagency Committee on Aviation Noise



Key Issues–Annoyance

- **Can we develop an annoyance model with greater predictive ability?**
 - Has annoyance increased with time?
 - Is it different for different aircraft?
 - E.g., commercial jet airports v. GA propeller only
 - Is it location dependent – i.e., does low frequency content affect annoyance?
 - Is annoyance due to a step change in exposure the same as annoyance for more gradual changes?
 - How well does DNL capture non-acoustic factors?



Key Issues–Annoyance

- **What factors affect private annoyance?**
- **Can community / public actions be predicted?**
- **What can be learned from complaint data?**
- **Can models or standards for communicating aircraft noise exposure and effects to the public be developed?**



Key Issues–Sleep Disturbance

- **Small population samples in aircraft noise studies**
 - Can non-noise sleep disturbance studies of health effects be useful for noise-induced sleep disturbance?
- **Can results from studies performed outside the US be generalized to US populations?**
- **How severe are next-day effects of noise-produced sleep disturbance?**
- **Reliability of different sleep disturbance models – is there a noise exposure-response relationship for sleep disturbance we can use?**



Workshop Results

- **Defined Research Topics for Annoyance (5) and Sleep Disturbance (8) Projects.**
- **Discussed Various Funding Vehicles for Projects.**
 - Initiated Problem Statements for FY-11 ACRP* Projects.
- **Recommended Annual Meetings.**

* **ACRP:** Airport Cooperative Research Program



Ongoing Research on Annoyance

- **Schultz Curve Update**
- **Alternate and Supplemental Metrics (2 contracts)**
- **Survey Database and High Interest Survey Memo**
- **“Address Noise Issues beyond 65 DNL Contour Requirements”**
- **ACRP Survey Design Project (see next slide)**
- **PARTNER* Project 24: “Annoyance Modeling for Level and Number of Events”**
- **ACRP Children's Learning Project**

* **PARTNER:** Partnership for AiR Transportation Noise and Emissions Reduction

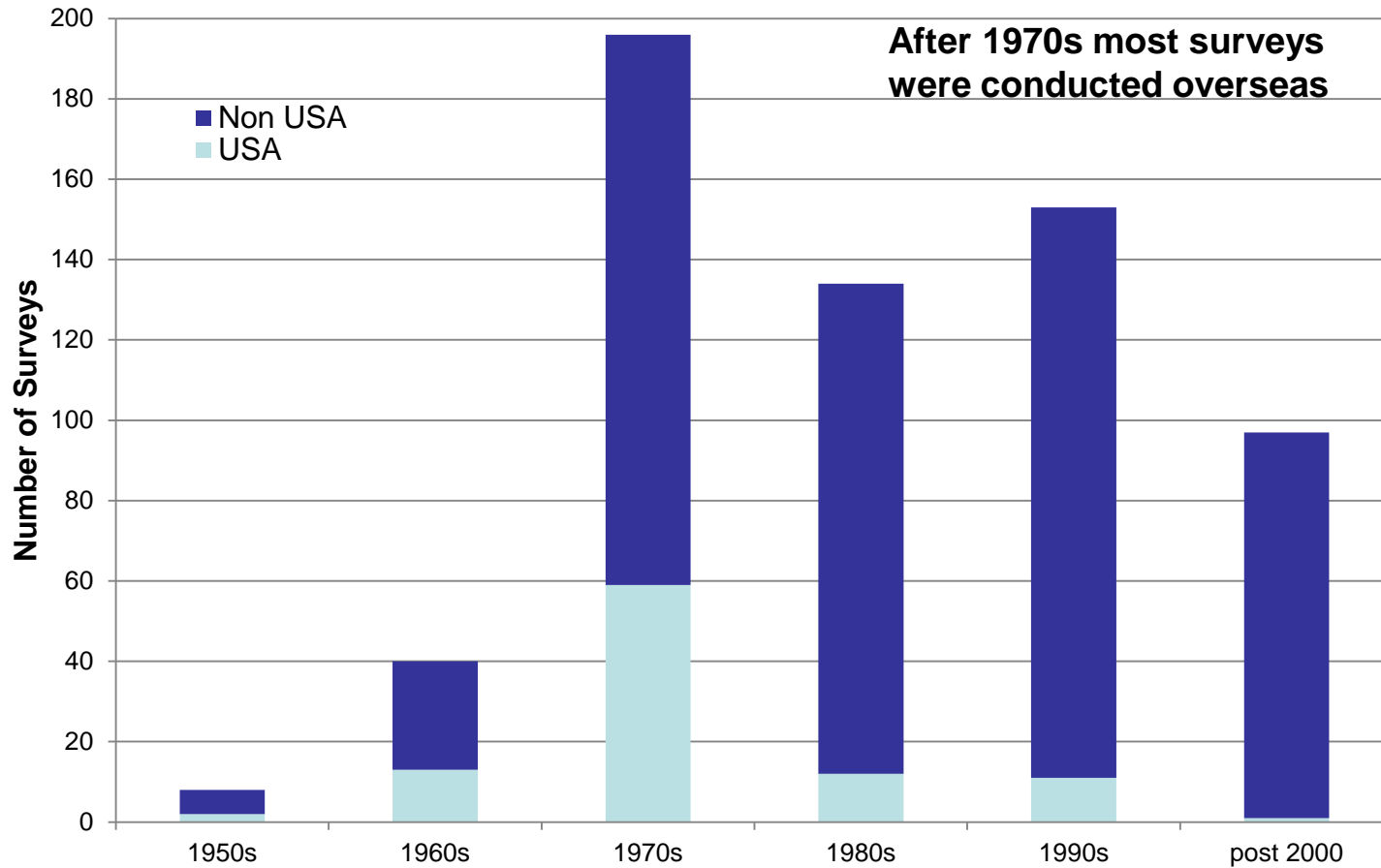


Ongoing Research on Sleep

- **PARTNER Project 25 – “Noise Exposure Response: Sleep Disturbance”**
- **ACRP Project 02-35: “Understanding Public Perceptions of Aircraft Noise and Noise-induced Sleep Disturbance.”**



Social Surveys of Reaction to Noise



Ongoing High Interest Efforts

- **Formulating with NIH to identify frame work for research on health impacts of aircraft noise**
- **Working together with CDC to analyze existing national health survey data**
- **Interfacing with European experts on health impacts of aircraft noise**

