

# The New Mexico Years

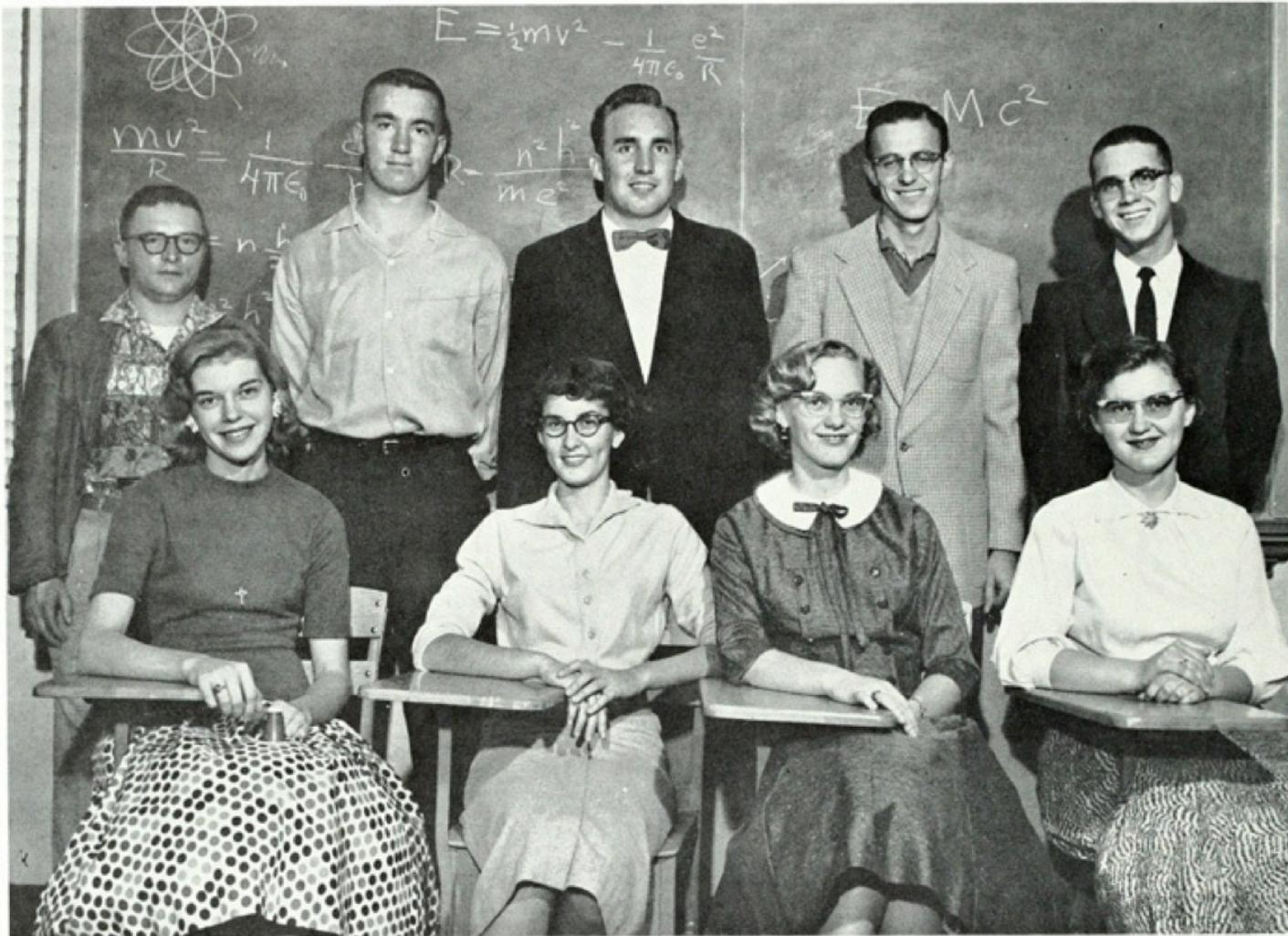
1949-1957



Father worked at White Sands Proving Ground, was Navy Civil servant. We lived on the base for one year, in Las Cruces the other years.

# New Mexico College of Agriculture and Mechanical Arts

## AMERICAN INSTITUTE OF PHYSICS



***There is no concept in the whole field of physics which is more difficult to understand than is the concept of entropy, nor is there one which is more fundamental.***

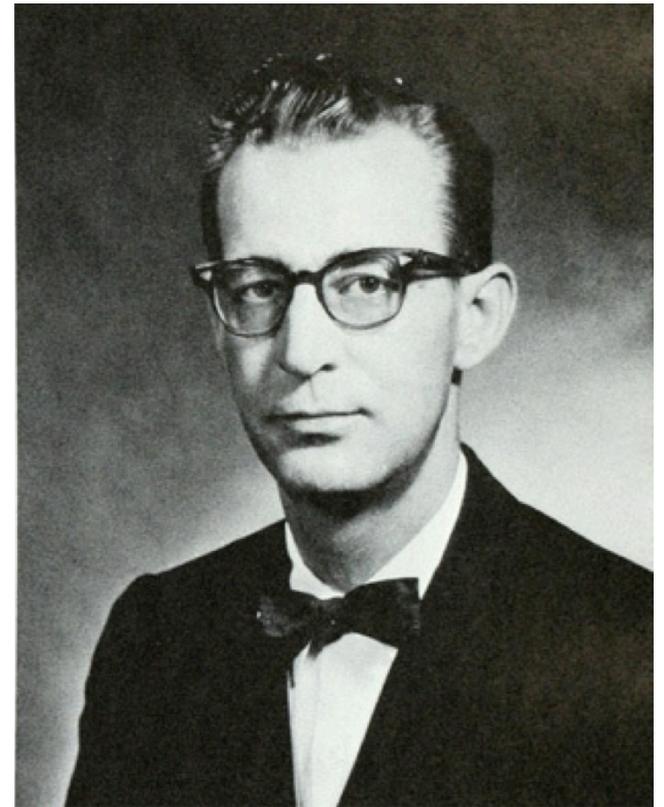
**Francis Weston Sears (1950). Mechanics, Heat and Sound, Addison-Wesley principles of physics series**



Francis Weston Sears

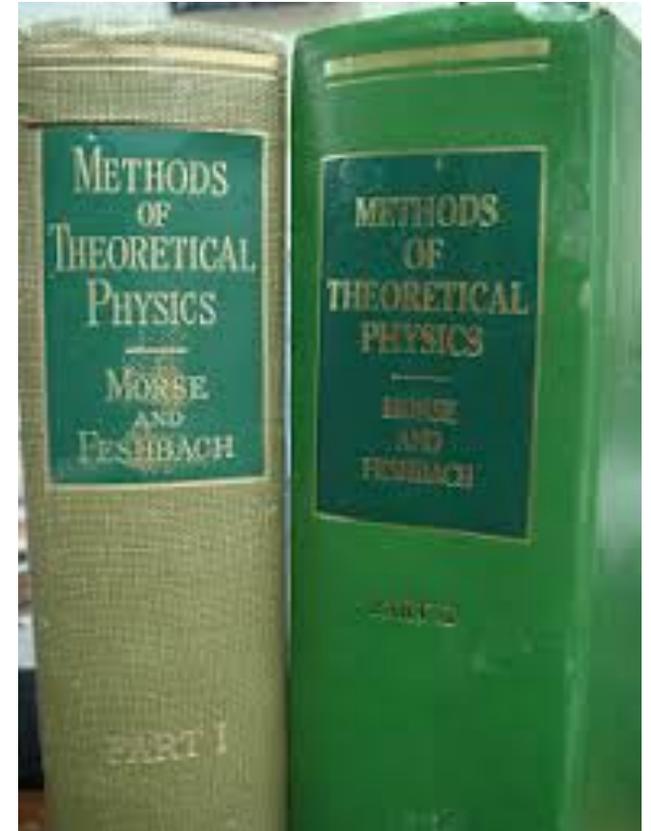


Berken Chang, classmate in 1954-1955,  
transferred out to Cal Tech



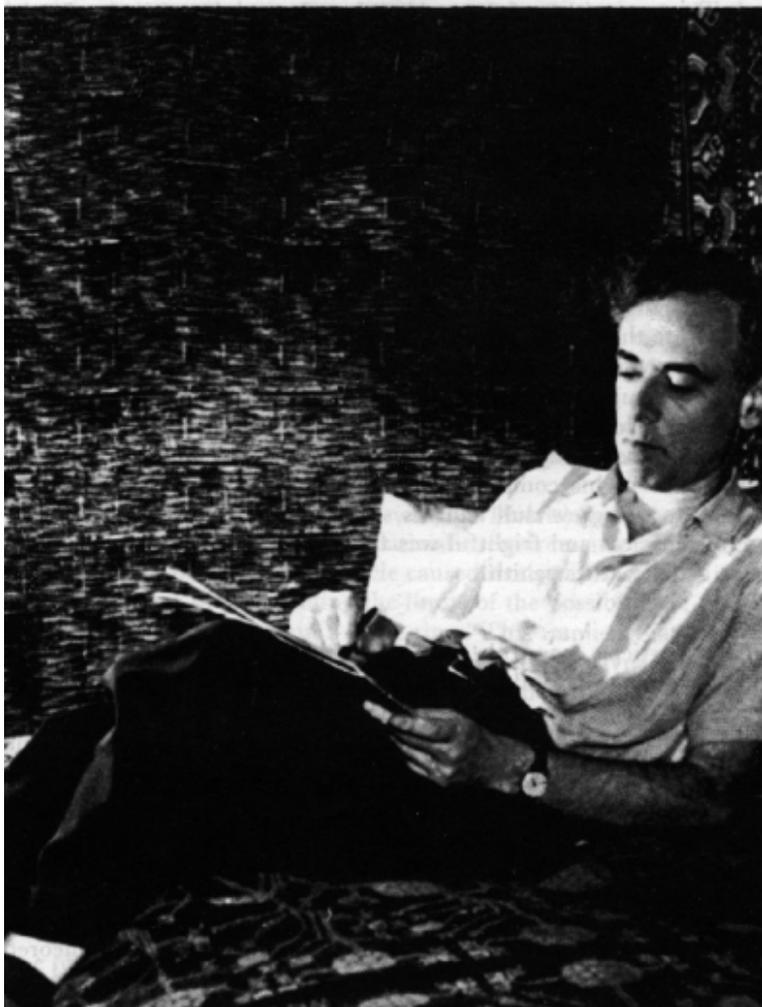
Richard H. Duncan, Assistant  
Prof in 1954-1955

# Aftermath of the Duncan “drought”



# MIT - Graduate Student Years

1957-1961



**Thesis advisor was Laszlo Tisza, who had studied with Landau in Russia, left after regime put Landau in jail**



*J. Robert Oppenheimer in the 1960's*

## Electron-lattice interaction and the generalized Born-Oppenheimer approximation

**The RAND Corporation was running full page ads in Physics Today during the late 1950's.**

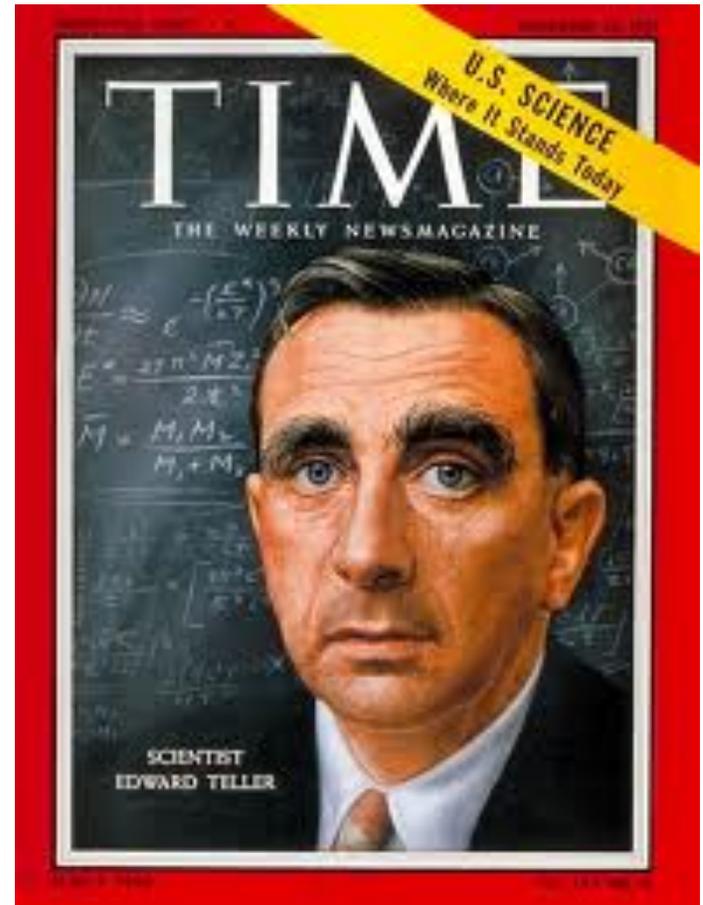
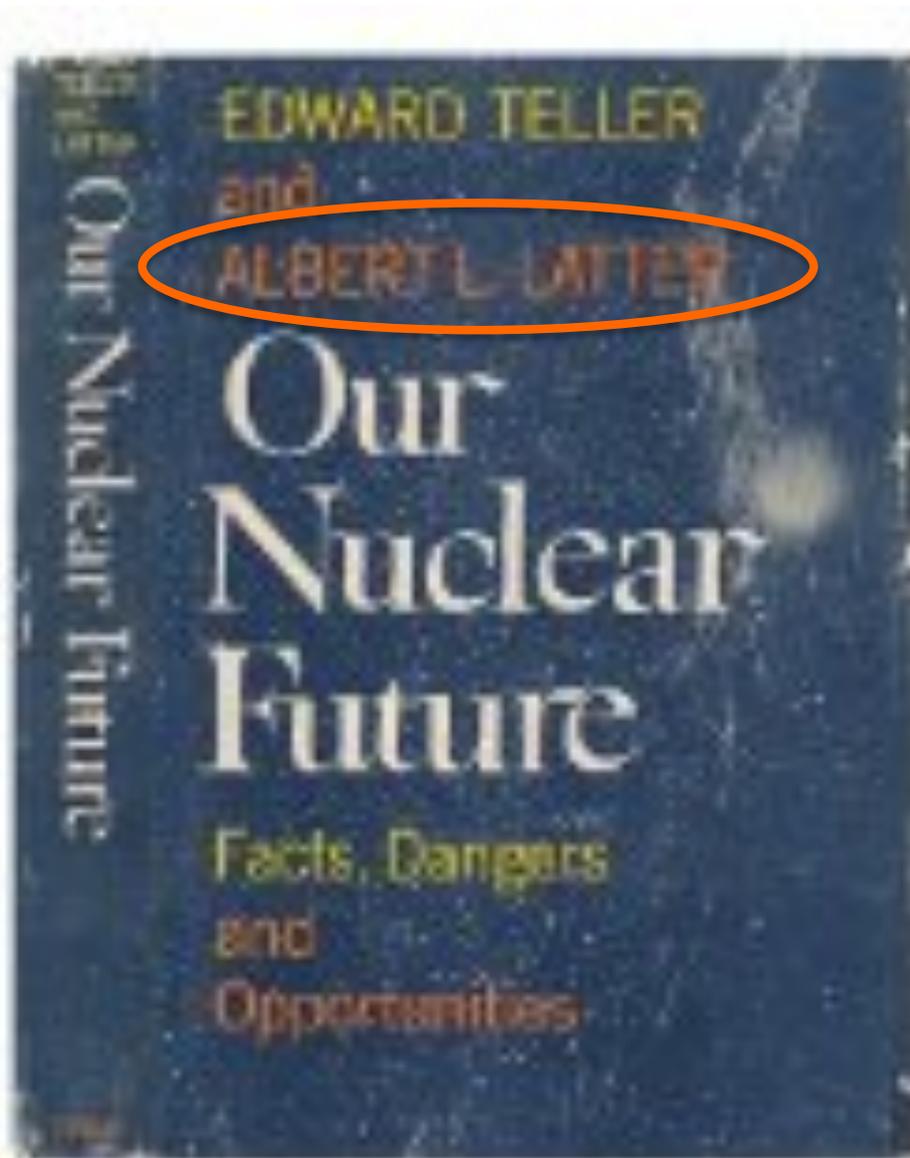
**P M Morse was on the Board of Directors.**



# The RAND Years

1961-1963





**Physics Department head  
at RAND was Albert Latter**

## **Albert Latter:**

**The last people we hired were from Harvard, students of Schwinger, and they didn't work out, so we thought we would try someone from MIT.**

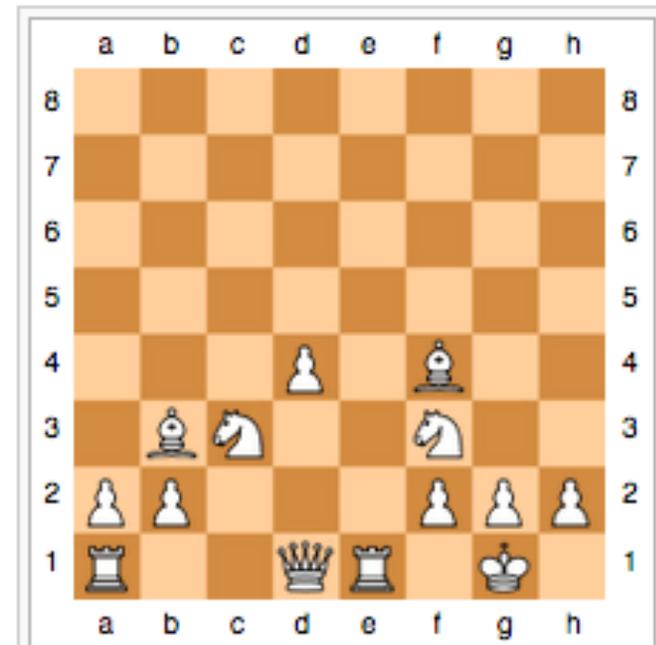


**We have this acoustics problem that no one here seems to want to work on**

# Milton Plesset, consultant to RAND and CalTech Prof:



The best way to learn a subject is to work a problem.



Kriegspiel, the game in progress. Position as seen by White player.

## **Readings during RAND years**

**Landau and Lifshitz, Fluid Mechanics**

**Brekhovskikh, Waves in Layered Media**

**Lamb, Hydrodynamics**

**Many, many papers in Proc Roy Soc, Rev Mod Phys, J Appl Phys, and JASA. Several papers in Russian journals**

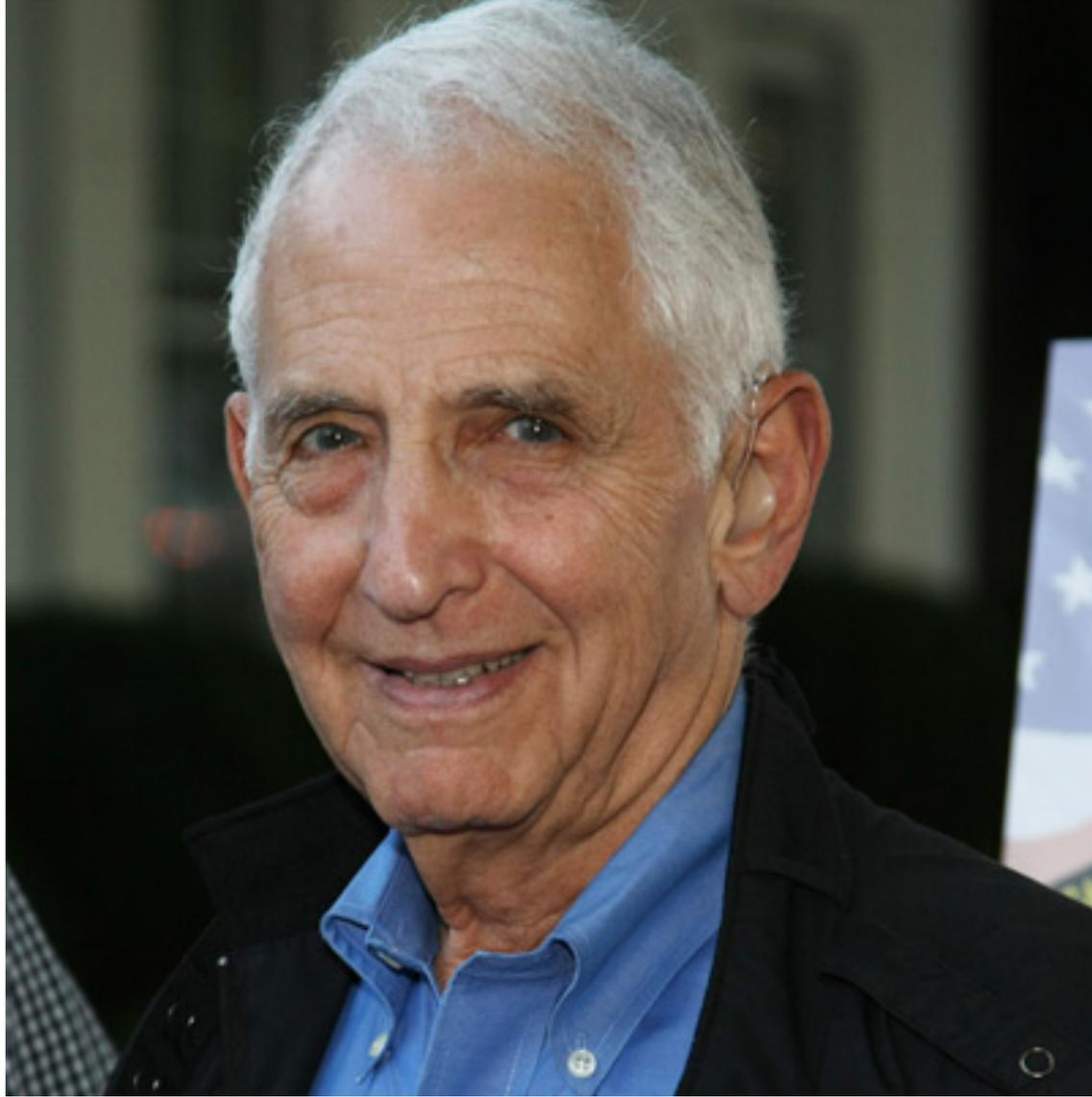
**Standard books on acoustics were useless**

# **Propagation of Acoustic-Gravity Waves from a Small Source above the Ground in an Isothermal Atmosphere**

ALLAN D. PIERCE\*

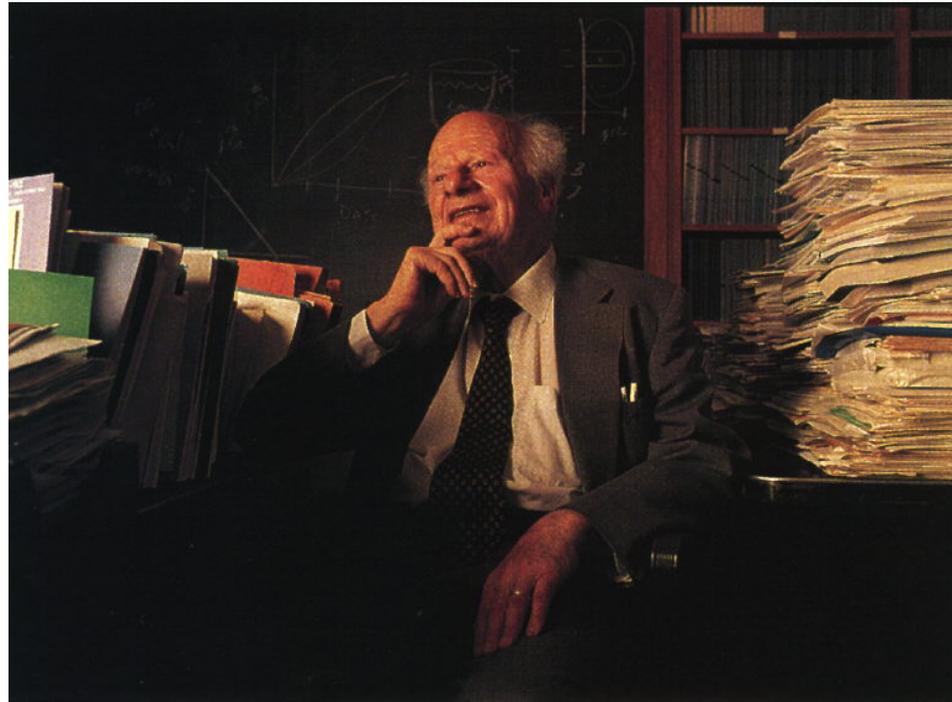
*The RAND Corporation, Santa Monica, California*

(Received 12 June 1963)



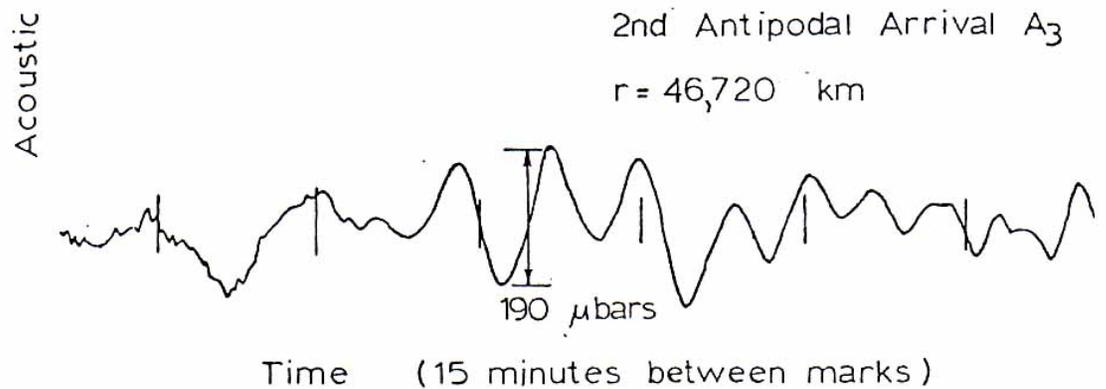
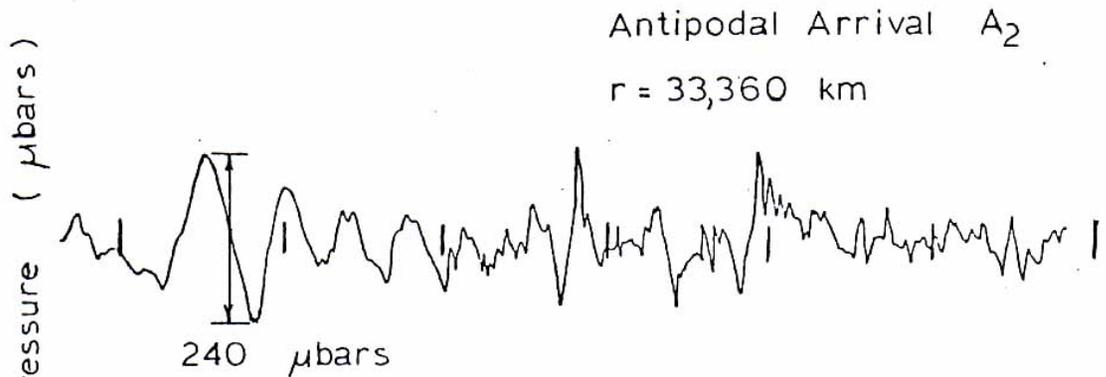
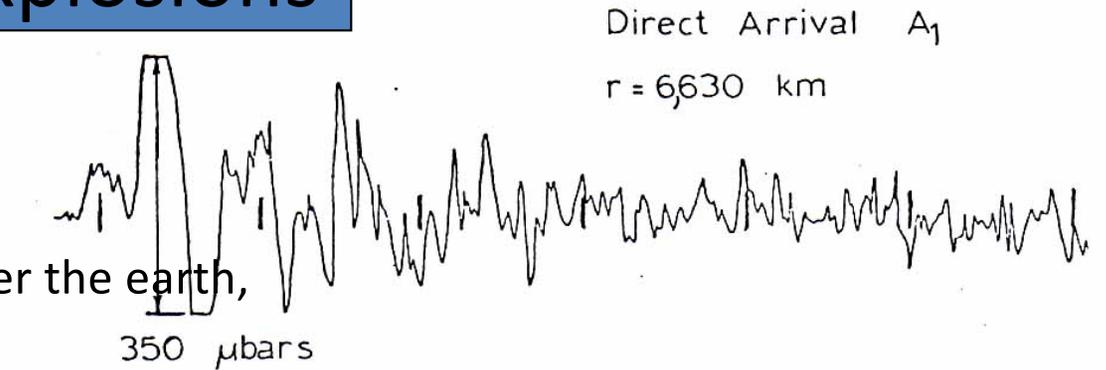
# The Avco years

1963-1966



# Large atmospheric explosions

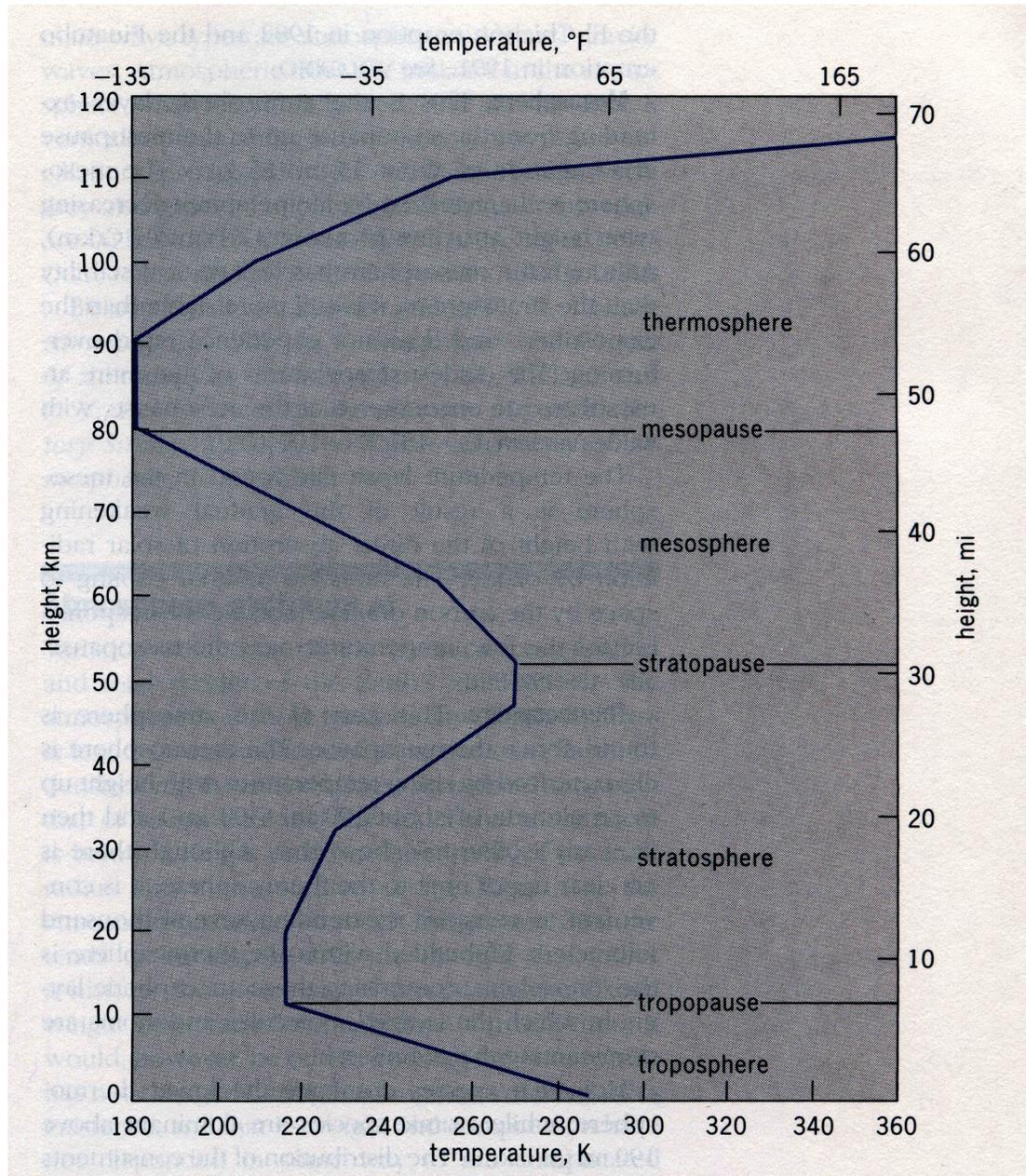
- generate infrasound pulses
- travel great distances over the earth,
- often circling the globe one or more times.



X (Largest nuclear explosion so far, Oct. 30 1961, Novaya Zemlya)



**Frank Press**



## [Extension of the Method of Normal Modes to Sound Propagation in an Almost-Stratified Medium](#)

[AD Pierce](#) - [The Journal of the Acoustical Society of America](#), 1965 - [link.aip.org](#)

A theory is presented that permits the extension of the method of normal modes to guided-wave propagation in a **medium** with properties varying slowly with horizontal coordinates in addition to varying with the vertical coordinate. The principal assumption is the neglect of ...

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# How I came to academia



# MIT – the Junior Faculty Years

1966-1973

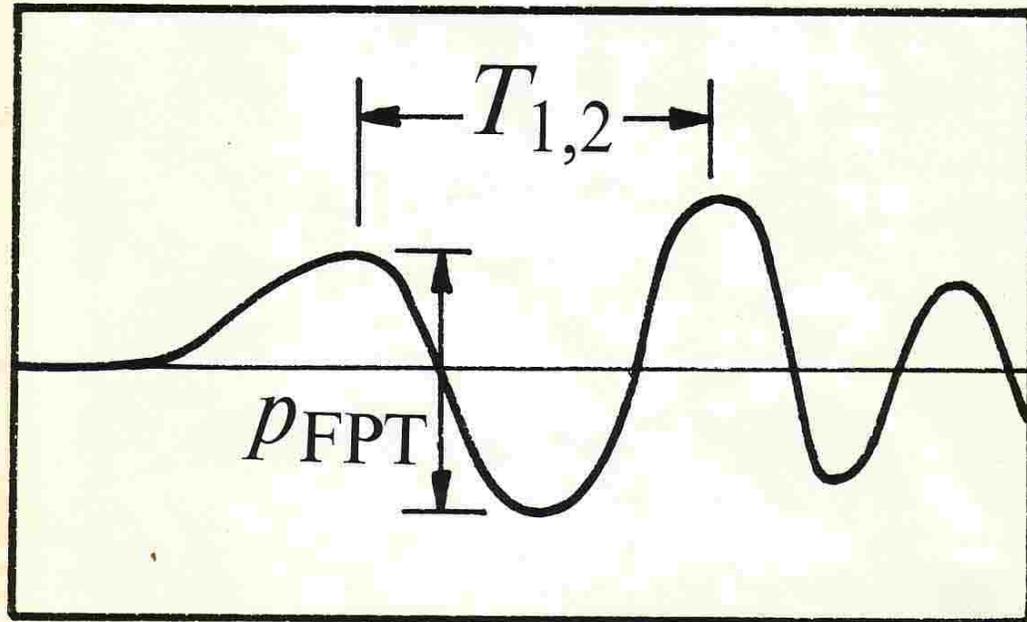
*I become a bona-fide  
mechanical engineer*

Allan D. Pierce, PE

# NATURE

Vol. 232 No 5308 July 23 1971

FRIDAY



Microbarographs and nuclear explosions

Dating bones by thermoluminescence...  
Pheromones again... Chromosomes and  
malnutrition... Alkaloids from cannabis

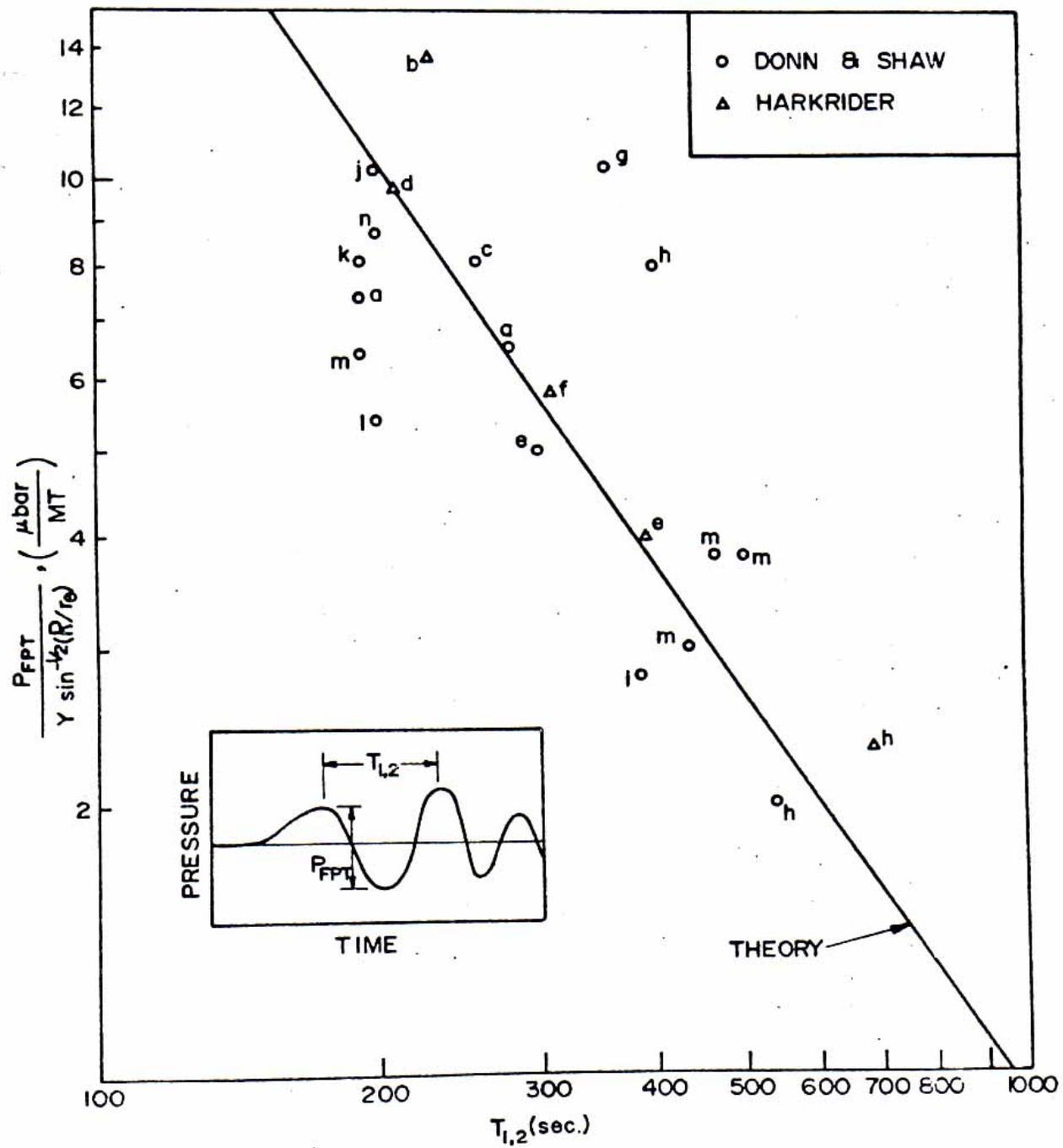
Macmillan Journals Limited

25p UK \$1.00 USA

SECOND-CLASS POSTAGE PAID AT NEW YORK, N.Y.

Prediction of single mode  
theory:

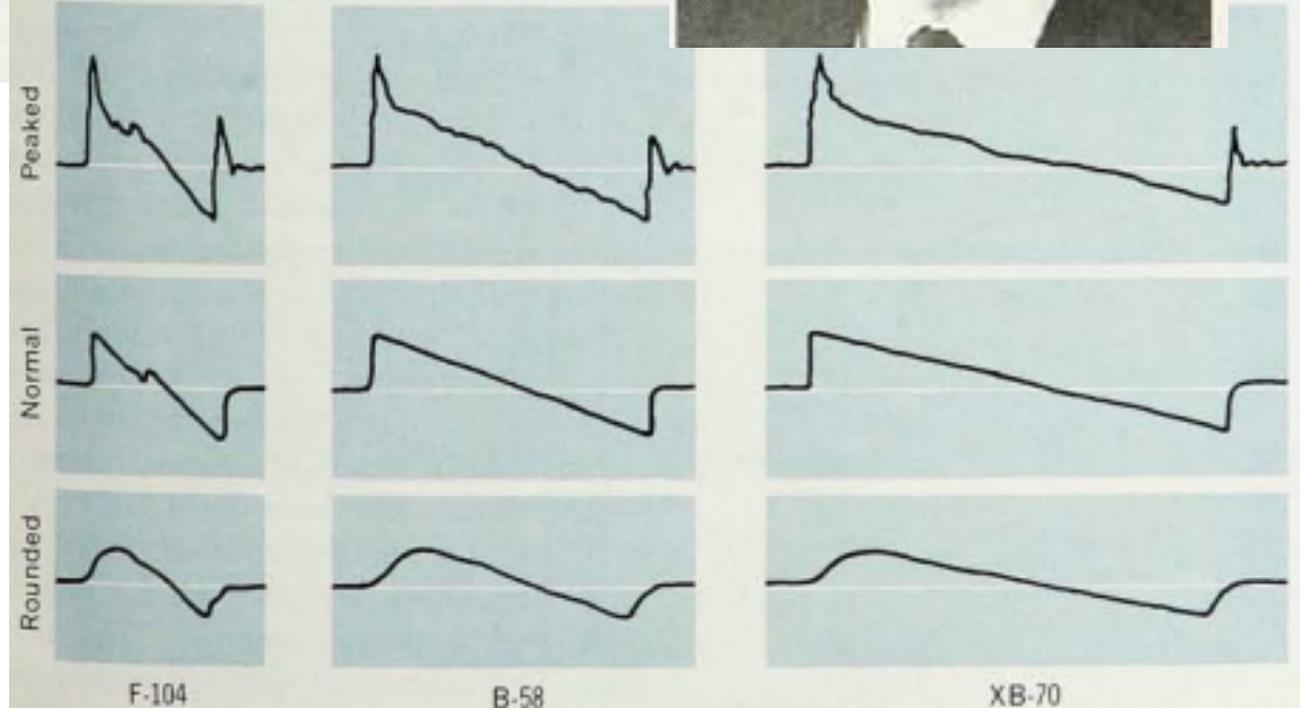
Early portion of all pressure  
pulse waveforms have the  
same general shape



# Sonic Booms

*How are sonic booms created?  
What do they do to people and buildings?  
Will the future be dominated by the boom?*

*by Harvey H. Hubbard*



VARIATION of measured sonic-boom pressure signatures at ground level for small, medium and large aircraft traveling in steady, level flight. —FIG. 7

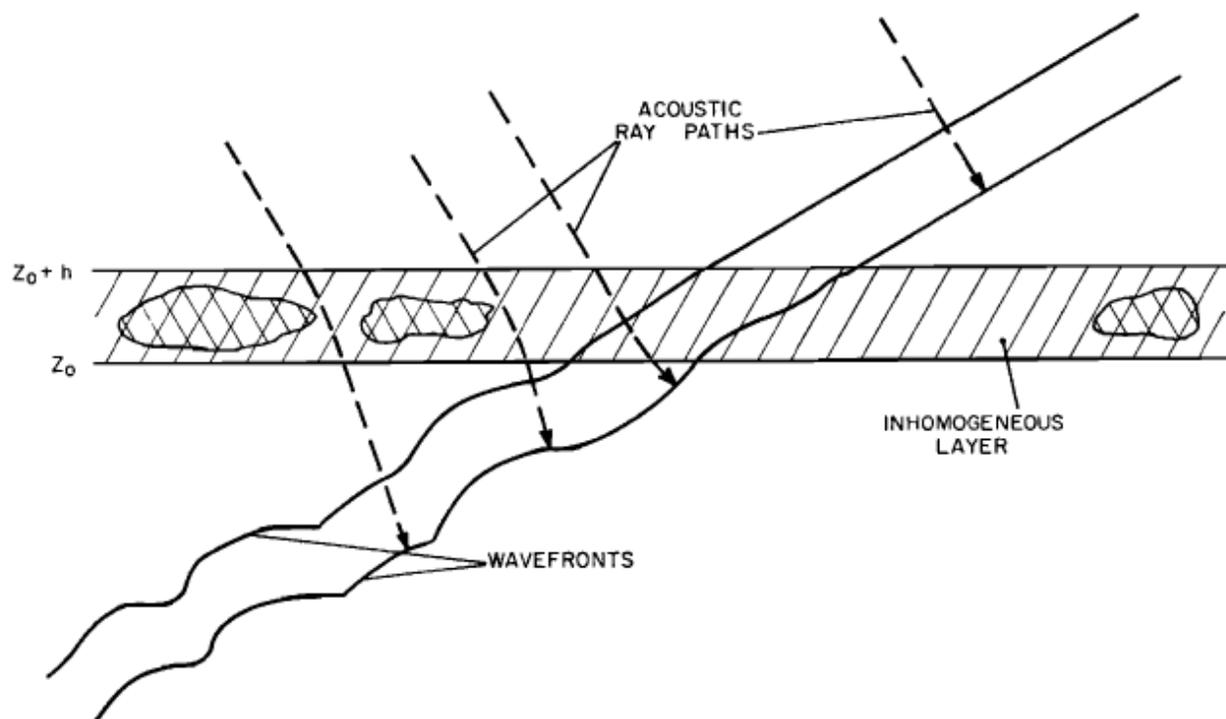
Physics Today,  
February 1968

# Spikes on Sonic-Boom Pressure Waveforms

ALLAN D. PIERCE

*Massachusetts Institute of Technology, Cambridge, Massachusetts 02139*

A. D. PIERCE





# The Georgia Tech Years

1973-  
1988

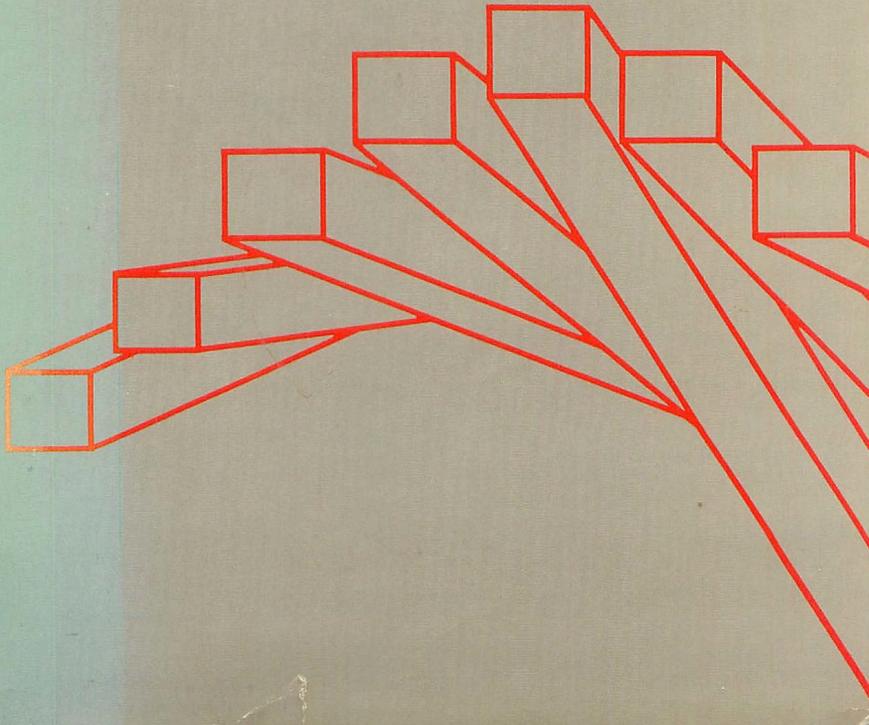
PIERCE

# ACOUSTICS:

An Introduction  
to Its Physical Principles  
and Applications

ALLAN D. PIERCE

ACOUSTICS: An Introduction to  
Its Physical Principles and Applications



[book] [Acoustics: an introduction to its physical principles and applications](#)

AD Pierce - 1989 - [books.google.com](#)

This edition, with minor corrections and with the addition of a section of hints and answers to exercises, is the same as the first edition published by McGraw-Hill in 1981. An errata of obvious misprints and subtle mistakes accumulated over the intervening years, and I am ...

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## Acoustics: An Introduction to Its Physical Principles and Applications [Hardcover]

[Allan D. Pierce](#)  (Author)

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**Available from [these sellers.](#)**

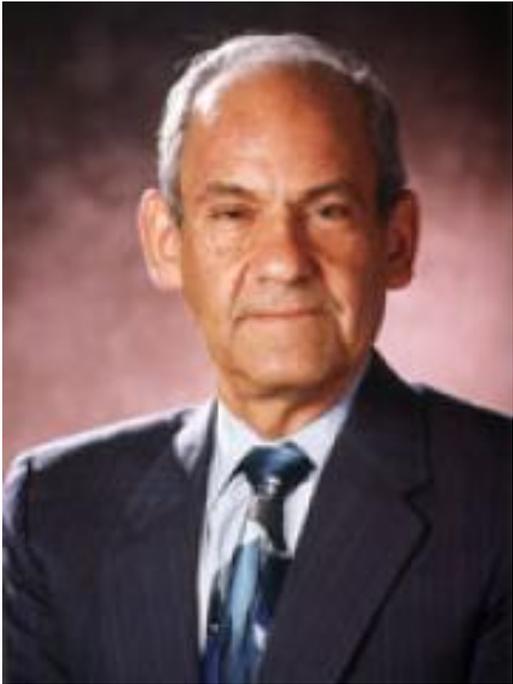
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9/15/13



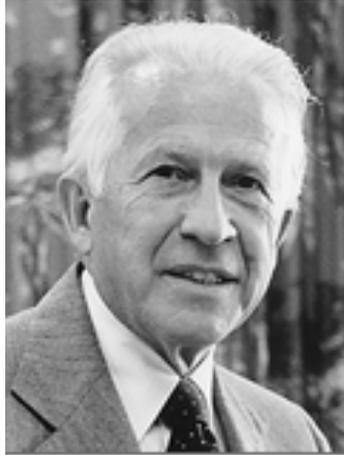




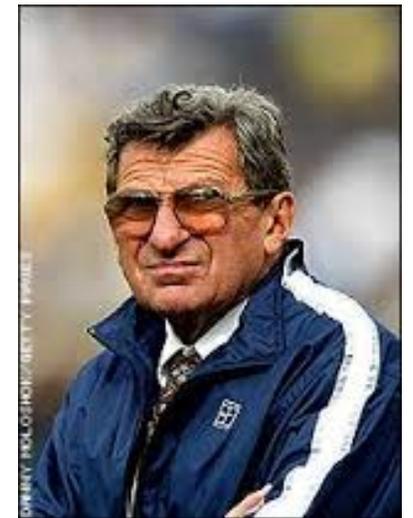
# The Penn State Years

1988-1993

# William E. Leonhard



1914-2008





# **The Boston University Years**

**1993--2012**

*The physical mechanism (viscosity related) of low frequency acoustic wave attenuation in sandy/silty sediments*



Allan D. Pierce  
William M. Carey

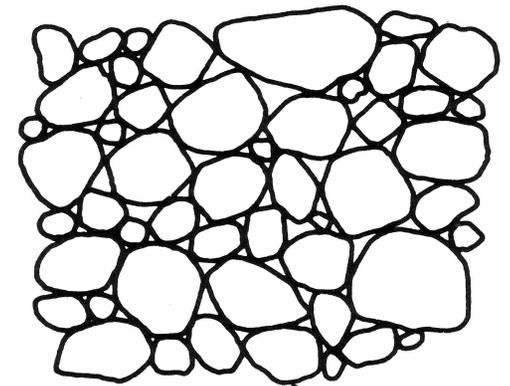
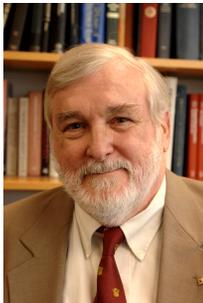
**Acoustical Society of America**

**11 November 2008**

**Miami, Florida**



*Please try to follow the logic. It isn't all that intricate and it is more nearly correct than the other stuff that has been fed to you.*



*Sediment shear as a perturbation in  
geoacoustic inversions and the  
explanation of the anomalous frequency  
dependence of the attenuation*

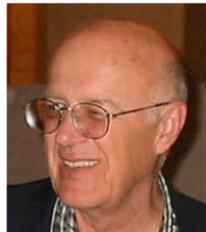
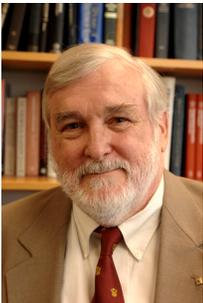


Allan D. Pierce  
William M. Carey

Acoustical Society of America

27 October 2009

San Antonio



# The Editor-in-Chief Years

1999-present

