**Miller Collection/Physics Single-Concepts**

The American Association of Physics Teachers

(AAPT) and its Instructional Materials Center has

produced these videos to help bring proven

instructional resources into today’s classrooms.

The videos in this collection are transcribed from the film

series produced by Franklin Miller, Jr., Kenyon

College, Gambier, Ohio at the Ohio State University

under a grant from the National Science Foundation.

These are copies from the original negatives that were

made in 1962-1963. The transfers to videotape and

videodisc were made in 1993 under the supervision

of Professor Miller, with the expectation that many of

them would prove to be still useful in teaching

elementary physics at various levels. The final

assembly of the prototype videotape cassettes was

performed at the AAPT Instructional Materials

Center, Robert G. Fuller, Editor, at the University of

Nebraska-Lincoln. The conversion of the videotapes

and videodiscs to DVD was done in 2001 by Ztek

Co., Lexington, Kentucky with Professor Miller’s

review and concurrence.

This Teacher’s Guide was written by Franklin Miller,

Jr. The films were originally designed to be silent, to

encourage use of the same footage in classrooms at

various levels, at the teacher’s choice. A sound track

has been added with the narration being written by

professor Miller. The use of the recorded narration is

optional.

Contents: (min:sec)

**I. Mechanics**

1. Tacoma Narrows Bridge Collapse (2:52)

2. Inertial Forces—Translational Acceleration (1:15)

3. Inertial Forces—Centripetal Acceleration (2:02)

4. The Wilberforce Pendulum (2:34)

5. Measurement of “G”—The Cavendish Experiment (2:14)

6. Coupled Oscillators—Equal Masses (2:00)

7. Coupled Oscillators—Unequal Masses (2:10)

**II. Waves**

8. Nonrecurrent Wavefronts (1:57)

9. Diffraction—Single Slit (1:52)

10. Diffraction—Double Slit (2:00)

11. Resolving Power (1:58)

12. Michelson Interferometer (2:27)

13. Temperature Waves (2:04)

**III. Molecular, Atomic and Nuclear Physics**

14. Critical Temperature (2:14)

15. Ferromagnetic Domain Wall Motion (2:24)

16. Paramagnetism of Liquid Oxygen (2:20)

17. Absorption Spectra (1:55)

18. Radioactive Decay (2:31)

19. Scintillation Spectrometry (1:47)

**Grade Level:** 12+

**Media:** CD-ROM

**The 19 single-concept videos on this DVD are**

**proven instructional aids that have been**

**successfully used by teachers since 1964 to**

**demonstrate difficult-to-illustrate**

**physics concepts.**

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