

# SPRENGNETHER



## *Seismographs*

for the

**Seismologist  
Meteorologist  
Experimenter  
Class Room  
Amateurs  
Museum**

# SEISMOGRAPHS SERIES AR

The Series A-R Seismographs were designed to satisfy a demand for low cost instruments which would be suitable for routine teleseismic observation as well as special research, amateur and demonstration purposes.

The seismograph consists of a highly sensitive optical lever (Wood-Anderson type) which records on photographic paper.

In presenting these new seismographs, we are especially proud to state that, for the first time in the history of seismology, a broad program for organized amateur seismology has definitely been made possible. In order to make the equipment available at the lowest possible cost for the amateur, we offer the instrument in an unassembled kit form, with complete directions for the assembly and installation. We also supply an elementary text book written especially for the amateur. The text book describes how to locate an earthquake by means of a single horizontal component seismograph. Travel time graphs for P & S waves are also supplied. The graphs are plotted for the time scale of the recorder, which is 25mm/min.

The amateur seismologist will derive the double satisfaction of engaging in a most pleasurable technical hobby, as well as cooperation in the possible solutions of very important problems in seismology. It is an interesting fact that no knowledge of mathematics or science is required to make fundamental determinations of the

epicenter of earthquakes. Observers with scientific backgrounds will find it very interesting to investigate the theories involved for a more complete understanding of the study. High School students interested in amateur seismology will obtain experience which will be valuable to them regardless of which branch of science they will eventually pursue.

The Sprengnether Series A-R Seismographs have received the approval of the Seismological Society of America, and in order to promote an active interest in seismology, the Society passed the following resolution at the June Meeting of 1956.

**RESOLVED:** That,

Whereas amateur seismologists can make important contributions if equipped with suitable instruments, and

Whereas, such instruments have been made available at very slight cost by the Sprengnether Instrument Company of St. Louis, to it

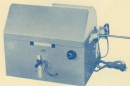
**RESOLVED:** That the Eastern Section of the Seismological Society of America and its individual members give every encouragement possible to such amateurs, . . .

Our ultimate goal in the amateur field is to have a wide distribution of seismographs, all of which will have the same characteristics. Having instruments all of the same type, the comparisons will be greatly simplified and the results more valuable.

The Series A-R seismographs will also have a strong appeal for those interested in the study of microseisms. In general, the number of instruments used in microseismic research is determined, not by the problem, but rather by the cost of the equipment. These instruments greatly reduce this cost limitation for most projects.

The seismographs are designed and built to provide many years of continuous operation. Precise adjustments of period and damping may be obtained. The recorder is provided with a complete optical system consisting of a 6-volt light source (for which a transformer is provided) and a 3" cylindrical focusing adjustment. A front surface mirror (FL = 1 meter) is mounted on the mass of the pendulum.





### SPECIFICATIONS:

Period range	1/2 sec. to 30 sec.
Damping	Electro-Magnetic
Magnification	500 to 1500 (depending upon period)
Foot length of optical lever	1 meter
Recorder	Photographic
Recorder dimensions	Length 14", Width 11", Height 11 1/2"
Drum speed	25 mm./min.
Record size	30 1/2" x 6"
Power requirement	110 v. 60 cy. AC
Time marks	Must be supplied by extra clock, if desired
Shipping Weight	25 lbs. (approximate)



Figure 1—Portion of the Sprengnether series A. B. seismogram for 3 October 1930 recorded at St. Louis, Mo. Illustrates body waves for an earthquake which centered on the Pacific coast of Costa Rica near 10 1/2° north latitude, 83° west longitude, origin time 14:05:10.5 Greenwich; S-P distance from Chart II is 1060 miles.



Figure 2—Portion of the Sprengnether series A. B. seismogram for 29 September 1930 recorded at St. Louis, Mo. Illustrates body and surface waves for an earthquake off the Pacific coast of Mexico near 28° north latitude, 101° west longitude, origin time 05:05:15.5 Greenwich. The S-P distance for this record by Chart II is 1760 miles.

The instruments may be purchased in kit or completed form. The completed instruments contain some refinements not obtainable in the kits.

### APPLICATIONS:

Earthquake recording  
 Hurricane detection  
 Microseism projects  
 Seismological research  
 Class Room demonstrations

Amateur seismology  
 Quarry blast recording (where permanent installation is possible)  
 Museum displays  
 Et cetera



