



## THE OSBORNE FIREFINDER

Joe Fleming, Mechanical Engineering Technician  
Rich G. Robertson, Acting Fire Program Assistant

### BACKGROUND

The Osborne Firefinder, designed by W. B. Osborne, has been used for nearly a century to pinpoint fire locations. It is accurate, requires no power to operate, and is a valued piece of equipment among the firefighting community. Over the years, misfortune and vandalism have taken their toll on the few remaining Osborne Firefinders. Fire lookout personnel have asked for a replacement parts source. However, Leupold & Stevens, Inc., the last manufacturer of the firefinder, has not produced parts since 1975. The company no longer has casting patterns or production drawings.

The following article—A Day in the Fire Lookout Tower—A Fantasy, by volunteer Dorit Quaas—appeared in the October 1996 Angeles [National Forest] Volunteer News. This article relates her experience using the Osborne Firefinder. “When I was first introduced to the Osborne Firefinder I was amazed how much easier it was to pinpoint the area where I had observed some smoke. You just line up the hair in the front sight (similar to a rifle sight) with the base of the fire and the peephole in the rear sight. Once the hair is properly aligned with the smoke you take the horizontal reading in degrees and minutes. Then you obtain the vertical angle reading by using the measurement on the sliding metal piece on the rear sight and estimate the miles between the tower and the sight of the smoke using the metal tape on the Osborne Firefinder. After I check the map which is calibrated to my tower’s location and affixed to the Firefinder I can pinpoint the area of a fire very closely.”

### THE OSBORNE FIREFINDER REPRODUCTION

San Dimas Technology and Development Center (SDTDC) was contacted regarding the deteriorating condition of the Osborne Firefinders housed in fire lookouts throughout the United States. SDTDC’s investigation found that the models produced between 1920 and 1935 differed mostly in minor modifications. Many of the parts were interchangeable. SDTDC tried unsuccessfully to locate a source for either new Osborne Firefinders or replacement parts for existing units.

Comments from fire lookout personnel helped SDTDC determine which model to reproduce. SDTDC’s reproduction is similar to the 1935 model. Changes include a base made of aluminum, not cast iron; and nylon set screws in the sight ring used as adjustable bearings to minimize wear and maximize accuracy. A set of AutoCAD drawings documents the preferred design, and casting patterns have been fabricated.

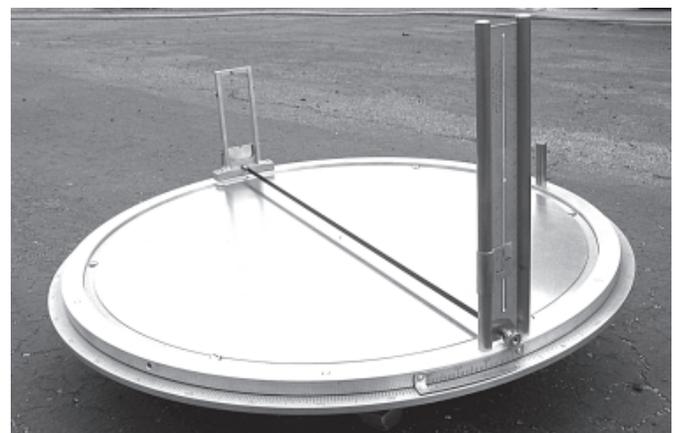


Figure 1—SDTDC’s prototype firefinder.

The pilot production run of two complete units is presently undergoing evaluation at SDTDC. One prototype unit, constructed entirely from new parts, was put in service at the Odell Butte Lookout near Bend, OR, to be evaluated during the 2003 summer fire season. Comments from one of the most experienced lookouts in region 6 and other visitors have been noted and will lead to minor modifications in the design. When SDTDC accepts the prototype units, the center will coordinate orders for replacement parts and replacement firefinders with the manufacturer, Palmquist Tooling, Inc. The manufacturer is anticipating an approximate cost of \$2,400 each based on a minimum order of 12 units. A significant price break is also available on replacement parts in lots of 12 or more. However, no minimum quantity is required.



Figure 2—Original Osborne firefinder.

For more information on the Osborne Firefinder, or to request a copy of the firefinder instruction manual, contact Joe Fleming, project leader, by phone: 909–599–1267, ext. 263; by fax: 909–592–2309; or by e-mail: [jdfleming@fs.fed.us](mailto:jdfleming@fs.fed.us).

## ABOUT THE AUTHORS...

### Joe Fleming

Joe has worked as a mechanical engineering technician at SDTDC since 1989. He has a background in foundry and casting practices and has studied machine design. Joe worked in private industry prior to coming to SDTDC. He presently provides technical support to many projects at the center.

### Rich Robertson

Rich is a detailer from the Eldorado National Forest and has been at SDTDC since May 2003. Rich is a forester who has been a timber sale administrator/sale preparation officer, recreation planner, survey technician, lands officer/realty specialist, and a hotshot firefighter.

---

Information contained in this document has been developed for the guidance of employees of the U.S. Department of Agriculture (USDA) Forest Service, its contractors, and cooperating Federal and State agencies. The USDA Forest Service assumes no responsibility for the interpretation or use of this information by other than its own employees. The use of trade, firm, or corporation names is for the information and convenience of the reader. Such use does not constitute an official evaluation, conclusion, recommendation, endorsement, or approval of any product or service to the exclusion of others that may be suitable.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities



---

on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.