



National Museum of Forest Service History Newsletter

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The Forest Service Technology and Development Program

By Bert Lindler

Bert is a technical editor at the Forest Service Missoula Technology and Development Center. Before joining the Forest Service, he worked for the Stars and Stripes newspaper in Germany and the Great Falls Montana Tribune.

For the past 60 years, the Forest Service, U.S. Department of Agriculture, Technology and Development (T&D) program has provided practical solutions to problems identified by Forest Service employees and cooperators.

Problem: How can wildland firefighters protect themselves if they are trapped by fire?

Solution: The T&D Program developed a lightweight shelter to reflect the fire's heat while the firefighter lies against the ground where the temperatures are coolest. Although the fire shelter has been used since the 1960s, it was redesigned during the early 21st century to improve protection from flames as well as the fire's heat. Although the fire shelter has saved hundreds of lives and prevented many serious injuries, it cannot guarantee a firefighter's safety.

Problem: How can engines be prevented from throwing sparks that cause forest fires?

Solution: Spark arresters trap or destroy hot particles in the exhaust from chain saws, off-highway vehicles, and from other engines. The T&D Center in San Dimas, CA, manages the national spark arrester testing and qualifications program. Many States, municipalities, most federally managed lands, and all Forest Service regions require that all internal or external combustion engines must be equipped with a spark arrester that meets the national program's requirements.

Problem: How can safe, standardized firefighting equipment be provided nationally at the lowest cost?

Solution: The T&D Program develops specifications for hundreds of items of firefighting equipment. Contractors use the specifications to produce large quantities of the products



Different types of fire shelters were compared during testing in the 1950s.

Photo courtesy of the Forest Service.

for the General Services Administration that sells them to firefighting agencies. This saves millions of dollars and ensures greater standardization than if items were purchased in smaller quantities by individual agencies.

Problem: How can Forest Service recreational facilities become more accessible to people with disabilities?

Solution: The T&D Program has developed a campground handpump, boat-loading platforms, and gate latches that meet accessibility standards. In addition, a guidebook has been developed describing how designers and recreation professionals can integrate accessibility planning into recreation facilities.

Two T&D centers, in Missoula, MT, and in San Dimas, CA, serve as one problem-solving program for the Forest Service, working on 150 to 300 projects every year. Most projects are completed within 18 months to 3 years.

This variety of projects requires many different talents. The skills of the program's slightly more than 100



National Museum of Forest Service History

A Nonprofit Corporation

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The *Newsletter* is published quarterly for the members and supporters of the National Museum of Forest Service History, a non-profit corporation dedicated to preserving the history of the U.S. Forest Service.

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Membership Categories

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Student	\$15
Individual	\$30
Family	\$55
Contributing	\$150
Sustaining	\$300
Organization	\$100
Lifetime	\$1,000

Museum News

By Gray Reynolds, President

The Board of Directors increased the Capital Campaign goal at the January meeting. The new fundraising goal is \$8 million for design and construction of the 15,000 sq. ft. building and an additional \$2 million for endowment. The new goal reflects improved cost estimates for building construction and exhibits developed with our architect and interpretive consultants.

A new and larger campaign organization was approved during the February Board meeting to move more aggressively to obtain needed funds by August 1, 2009. Max Peterson and Bob Model continue as campaign co-chairs. A new position, the National Campaign Director, will coordinate campaign activities with the Regional Campaign Directors. Larry Gadt is the National Campaign Director. Frequent conference calls are planned to coordinate campaign activities. The Regional Campaign Directors are: R1- Dave Wright, R2 - Bjorn Dahl; R4 - Dick Smith; R5 - Jerry Gause, R6 - Steve Mealey, R8 - Jerry Coutant; R9 - Tom Hamilton and R10 - John Sandor. The Region 3 position will be filled soon. Each Director will need three or more people helping to identify contacts and talk with potential donors. This organization will also work to increase museum awareness and memberships.

Building Design — The Museum Support Committee is working closely with Stan Zimet of OZ Architects in designing the building. Committee members are Dick Bacon, Gary Brown, John Drake, Beryl Johnston, Bo Nielsen and Dave Stack. The floor plan included in the November 2007 newsletter remains essentially unchanged. On the ground floor is an 8,000 sq. ft. exhibit / theater area, 3,000 sq. ft. lobby featuring timber framing / small-diameter wood trusses, 1,000 sq. ft. traveling exhibit space plus a small office and restrooms. The basement will house the curation center, two classrooms, library, additional offices, restrooms and storage. Three-dimensional building drawings will be available in March on the Museum's web page.

Conceptual Exhibit Plan — We have received the final report from Split Rock Studios of Minnesota. The actual exhibits and storylines will likely see some change but the concepts will guide improvements before exhibit construction begins. We plan on forming small national groups for each theme area to review storylines and develop new storylines if needed. A key component of the plan is the **Introductory Theater**. The theater will present an exciting experience that will awaken visitors to the drama of the Forest Service story and the far-reaching impact of Forest Service conservation. As visitors enter the theater, they will see large photomurals to focus their attention on the need for conservation management, and the video program provides the answers. What follows is not, however, a simple video presentation, but is actually a visually exciting object theater, with multiple screens flanked by two revolving stages.



N.M.F.S.H. Museum Exhibit Conceptual Plan



A new rotary handpump developed by the T&D Program allows anyone to pump water at a campground, even if they don't have strong arms and a long reach. Photo courtesy of the Forest Service.

employees include engineering, forestry, machine tool operation, metal fabrication, drafting, publication design, helicopter rappelling, smokejumping, explosives, recreation management, sociology, global positioning systems, equipment design, textile design, contracting, editing, photography, Web design, safety, statistics, chemical analysis, reforestation, and video production.

Although the centers are funded specifically to solve problems for the Forest Service, their solutions have been widely adopted by other agencies, the U.S. Army, and nonprofit organizations in the United States and abroad.

Missoula Technology and Development Center

During the late 1940s, Forest Service employees at the Aerial Fire Depot in Missoula, MT, began working on ways to use aircraft more effectively in fighting fires in remote areas.

When regular aircraft patrols detected a forest fire, smokejumpers and cargo were dropped to the fire. The success of these techniques led to the establishment of the Missoula Aerial Equipment Development Center in 1953.

Center employees worked in a variety of locations in the Missoula area before offices were moved to Fort Missoula in the 1960s.

San Dimas Technology and Development Center

Also during the 1940s, Forest Service employees were consolidating equipment development activities at the Arcadia (CA) Fire Equipment Development Center. The southern California site was selected in 1945 because of frequent fire activity in the area, evolving industrial and academic centers there, and a Forest Service facility the center could move into.

Late in the 1940s, a conference of Forest Service range management administrators and researchers recognized that equipment for range seeding and other improvements needed to be adapted or developed. The Forest Service's range program became the second "sponsor" at Arcadia and the center's name was changed to the Arcadia Equipment Development Center.

Technology and Development Program

The centers soon were solving other nationally important natural resource problems for the Forest Service. In 1987 the names of both centers were changed from "Equipment Development Centers" to "Technology and Development Centers" in recognition of their expanded role.

Both centers were scheduled for new facilities during

the 1960s and the Forest Service purchased land near the Missoula airport for a new facility.

The Arcadia center moved to its new facility at San Dimas, CA, in 1965, but the Missoula facility was not funded. Plans for a new Missoula facility were redrafted several times, but funding for construction wasn't available until 2000.

In 2002 the Missoula center moved from seven buildings around Missoula to its new facility near the airport. The new facility includes offices, a chemistry laboratory for analyzing fire retardants, a photo studio, a video editing studio, a textile fabrication shop, an electronics shop, a machine shop, and a large meeting room for training.



Missoula Technology & Development Center testing fire shelters in a planned crown fire.

Northwest Territories, Canada, 1997

Photo courtesy of the Forest Service.

Missing Museum Members

We need help to track Museum members who have moved and did not leave a forwarding address. The last known address is listed below for the missing members. Please contact us if you have additional information.

Glenn A. Cooper, 44755 NW Elk Mountain Rd,
Banks, OR 97106

Robert W. Merz, 1389 W county Road B2, Roseville, MN 55113

Ask a Friend
to become a
Museum Member

Long Serving Museum Board Member

Allen Lorin Hearst, Jr.
1926 — 2007



This photo of Lorin was taken on the Lyon Creek Fire which burned 25,000 acres on the Ft Howes Ranger District, Custer National Forest - 07/22/1966

Photo courtesy of Ina Hearst

Lorin was born September 22, 1926, at his grandparents' home in Thompson Falls, Montana. He was raised throughout western Montana as his family followed his father's work as a mining engineer.

In 1943, the family settled in Plains, MT. It was there that Lorin met Ina McCann, his future wife, and graduated from Plains High School. During high school, Lorin's love of flying led him to get his pilot's license. Toward the end of World War II, Lorin entered the U.S. Army Air Corps.

After returning from the service, Lorin attended the University of Montana (then called Montana State University); married Ina, and graduated from the School of Forestry with a degree in Forest Management in 1953.

Lorin's career with the U.S. Forest Service began with summer work during high school and college. After graduating from UM, Lorin was appointed Assistant Ranger in Plains. He went on to serve as Assistant Ranger on the Gallatin Forest at the Squaw Creek Ranger Station. In 1956 Lorin left the Forest Service and worked with a lumber company in Plains as a forester. Lorin utilized his pilot's license as he flew to examine timber sales. He returned to the USFS in 1959 and after working as a Regional Check Scaler and later as Ranger of the Calder District in the St. Joe National Forest, he was transferred to the Regional Office in Missoula, where he concentrated on the improvement of quality and quantity of forest products produced from lumber and plywood plants.

Over the next 20 years, Lorin worked closely with sawmill plants in Idaho and Montana to help mills increase the recovery of lumber from logs without increasing the volume of logs sawn. During Lorin's career, he also fought forest fires. He was Plans Chief on one of the Regional Fire Overhead teams and fought fires in California, Arizona, Washington, Idaho and Montana. As a retiree, he drove supplies to fires for the Forest Service.

Lorin served on the Board of Directors for the Historical Museum at Fort Missoula and until his death was a member of the Executive Committee on the Board for the National Museum of Forest Service History which he had served on since 1993. He stayed involved in various forest-related activities, including more than 50 years as a member of the Society of American Foresters.

Lorin and Ina had four children: Leslie, Lorin IV (who died at age 14), Randee and Stacie. Lorin and Ina celebrated their 58th anniversary in June of 2007. Lorin is survived by his wife, Ina, daughters, Leslie, Randee, and Stacie and three grandsons.

Coming Events

Forest Service Reunion 2009

September 7-11, 2009, Missoula, MT. Cosponsored by the National Smokejumper Association, Northern Rocky Mountain Retirees Association & the Museum.

May 2008 Newsletter

The next issue will feature an article about the Emergency Programs during World War II to develop new sources of rubber.

Welcome New Members

11/10/2007 to 02/15/2008

Peter Avers
Stephen Cummings
Donna Edwards
Barbara & Joe Gorsh
Darrell & Lynn Kenops
Mary Jo Lovick

Stephen McCorquodale
Charles Miller
Sig Palm
Raymond Scharpf
Bruce Short
Harold Simpson

Alan Taylor
Kathy Hardy & Bruce Ungari
William Wyatt

Unrestricted Donations

11/10/2007 to 02/15/2008

John C. Barber Sr.
John C. Barrington
Ron & Patty Bauer
Chester A. Bennett
Dean Boe
Howbert Bonnett
Charles W. Burk
John Bushfield
Tony Dorrell
Edward J Gryczan
Mike Hallisey
Sam Halverson
Donna M. Hanson

Kathy Hardy & Bruce Ungari
Doug Hayden
Hank Hays
John R. Hook
Bob & Jean Irwin
Les Joslin
Darrel & Lynn Kenops
Michael King
W. David Kolb
Ron Lindmark
James L. McConnell
Ralph Mumme
Wally & Drucie Otterson

Scollay & Anna Parker
Richard Pomeroy
Del Radtke
Ted Rieger
John B. Smith
Patricia Smith
Marshall E. Spencer
Gary Stensatter
Arvin L. White
Ken I. Young
Steve Yurich
Southern Forest Service Retirees
Association

Capital Campaign Donations

11/10/2007 to 02/15/2008

Richard Baldwin
Herman E. Ball
Dr. Roger R. Bay
Chester A. Bennett
Lynn R. Biddison
Rene Bunster
Dick & Carole Carson
John P. Case
George Chesley
John A. Combes
Bill Cooperrider
Edsel L. Corpe
Jay H. Cravens
Carol J. Ede
James W. Fears
Rick Hafenfeld
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Jack R. Miller
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Tom Schenarts
John Sherrod
Al & Nancy Smith
Ted C. Stubblefield
Vern Sylvester
Tom Thompson
James F. Torrence
Allan & Joyce West
Jane Westenberger
B. Wolfe
Ski Apache, Justin Rowland

In-Kind Donations

Beaudette Consulting Engineers,
Inc.
DJ&A, P.C. Consulting Engineers
OZ Architects

Memorials Donations

11/10/2007 to 02/15/2008

Gary Brown
Donna Edwards
Doug Leisz
Tim Ortman
Glenda Reynolds

Capital Campaign Donation and Pledge Card
 National Museum of Forest Service History, P.O. Box 2772
 Missoula, MT 59806-2772

Donor Name(s): _____ Address _____

City: _____ State: ____ Zip: _____ Daytime Ph.: _____

I / We enclose a gift of \$ _____

I / We pledge a total gift of \$ _____

Pledge Payment Schedule:

1) Date _____ \$ _____ 3) Date _____ \$ _____

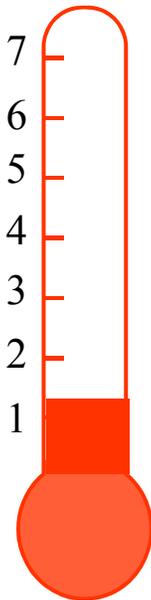
2) Date _____ \$ _____ 4) Date _____ \$ _____

Please pay pledges by December 31, 2008

Gifts and pledges may be paid by cash/check or by gifting securities (stocks and bonds). For securities, please call the Museum Office (406 541-6374) or write the Museum Office for transfer instructions. In accordance with IRS regulations, **your gift is fully tax-deductible.**

All persons donating will be recognized in a commemorative booklet available at the Museum. Donors giving \$1,000 or more will be recognized on the Wall of Honor in the Museum lobby.

**Capital Campaign
 Thermometer
 \$6 Million Goal**



**Capital Campaign
 Gifts
 As of 01/31/2008**

<i>CATEGORY</i>	<i>AMOUNT</i>
Members & Friends	\$ 376,380
Pledge Balance	84,746
Organizations	104,900
Foundations	20,000
Government	525,000
In-Kind Gifts	18,377
Endowments	17,034
TOTAL	\$ 1,146,437



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Note: Your mailing label shows the date your membership expires. Please mail dues payment, 1 month prior to the date listed above. This space is blank on complementary issues of the newsletter. Please renew EXPIRED memberships as soon as possible to continue support of the Museum program.

Membership Application

Fill out, detach, and mail to: National Museum of Forest Service History, P.O. Box 2772
Missoula, MT 59806-2772

Mr. ___ Ms. ___ Dr. ___ Name: _____ Address _____

City/State/Zip: _____ Daytime Ph.: _____

E-mail: _____ New Renewal GIFT

Membership Categories Annual Dues

Individual	\$30 or more	Sustaining	\$300 or more
Family	\$55 or more	Organization	\$100 or more
Student	\$15 or more	Life	\$1000 or more
Contributing	\$150 or more		

2007 Mail-In Newsletter Response Summary

The museum would like to thank all the members who responded to the mail-in questionnaire. There was a quick response to what we consider the beginning of better contact between members and the museum staff. The museum exists primarily through your support and willingness to participate. Please be patient with us as we integrate new ideas and interests in future newsletters.

There were 44 responses, the majority of members wanted articles concerned with forest service histories of people, places and historic buildings. 36 members graded the newsletter as good, 8 thought it was fair. Members wanting to receive the newsletter via email totaled 9; 28 said no to email. Those interested in writing an article for the newsletter totaled 9. We invite all members to feel free to submit articles of historical content relating to the Forest Service at anytime; it is of interest to us all.

This issue included a memorial article about Lorin Hearst, a request from the mail-in questionnaire.

Thank you for your input and we welcome your continued comments.