

**ENGINEERING
TECHNICAL
INFORMATION
SYSTEM**

FIELD NOTES • TECHNICAL REPORTS • TEXTS
DATA RETRIEVAL • CURRENT AWARENESS

Field **Notes**

Volume 4 Numbers 7 and 8
July-August 1972

**Who's Who In The
Washington Office
Division of Engineering
Compiled by Fran Owsley
News Items**



FOREST SERVICE • U.S. DEPARTMENT OF AGRICULTURE

ENGINEERING FIELD NOTES

This publication is a monthly newsletter published to exchange Engineering information and ideas among Forest Service personnel.

The publication is not intended to be exclusive for engineers. However, because of the type of material in the publication, all engineers and engineering technicians should read each monthly issue.

The publication is distributed from the Washington Office directly to all Forest, Regional, Center, Station, Area, Laboratory, and Research Offices. Adequate copies are printed to provide all who wish a personal copy. If you are not now receiving a personal copy and would like one, ask your Office Manager or the Regional Information Coordinator to increase the number of copies sent to your office. Use form 7100-60 for this purpose. Copies of back issues are also available from the Washington Office and can be ordered on form 7100-60.

It is intended that the material in the Field Notes be primarily written and used by Forest Service Field Engineers; however, material from other publications may be used.

Field Note material should always be informative and cannot contain mandatory instructions or policy. The length of an article may vary from several sentences to several typewritten pages. Material need not be typed (neatly written or printed is acceptable), or edited before being submitted to the Washington Office. The Washington Office will edit and prepare the camera copy to accommodate our format and allowable space.

Each Region has an Information Coordinator to whom field personnel should submit both questions and material for publication. The Coordinators are:

R-1	R-6 Kjell Bakke
R-2 Alfred Buerger	R-8 Ernest Quinn
R-3 Dan Roper	R-9 Clifford Hill
R-4 Fleet Stanton	R-10 Gerald Coghlan
R-5 Chuck Paletti	WO Stan Bean

Information contained in this report has been developed for the guidance of employees of the U.S. Department of Agriculture - Forest Service, its contractors and its cooperating Federal and State agencies. The Department of Agriculture assumes no responsibility for the interpretation or use of this information by other than its own employees.

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WHO'S WHO IN THE WASHINGTON OFFICE

DIVISION OF ENGINEERING

FOREWORD

Many requests from many Regions and Forests inspired this issue of the Field Notes.

To those of you who phone members of our staff and try to visualize a face from the sound of a voice -- the first few organizational pages are for you. And to those who need assistance in calling an engineer, a cartographer or technician on a specific subject -- try the listing of names with subject matter and phone numbers.

If the information in this issue of the Field Notes is helpful to you, and you would like it revised each year, please write us.



Fran Owsley
Editor

NOTE. Personnel changes made too late to include in this publication are:

Jeff Sirmon, WO, promoted to Regional Engineer, R-1.

Stan Bean, WO, promoted to Chief Operations Engineer, WO.

John Daly, WO, reassigned to Highway Engineer, Region 8.

Richard G. Deleisseques, reassigned from Forest Engineer, San Bernardino N. F., R-5, to Staff Engineer, WO (Vice Daly).

Dave Trask, WO, promoted to Assistant to the Chief, Chief's Office.

Bernard Hostrop, R-4, promoted to Cadastral Engineer, WO.

WO DIVISION OF ENGINEERING ORGANIZATION



MYLES R. HOWLETT
DIRECTOR



HAROLD L. STRICKLAND
Assistant Director
Operations

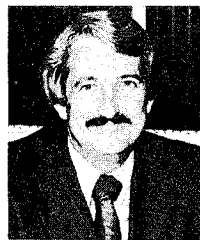


CHARLES R. WELLER
Assistant Director
Consultations and Standards



HEYWARD T. TAYLOR, JR.
Assistant Director
Technological Improvements

OPERATIONS



HAROLD L. STRICKLAND
Assistant Director



JEFF M. SIRMON
Chief Operations Engineer



FRANK J. HAMMOND
Chief Management Engineer



JOHN R. SWINNERTON
Chief Geometronics Engineer



STANLEY O. BEAN, JR.
Engineer, Technical Data Systems



JOHN H. DALY
Engineer, Technical Recruitment
and Development



A. L. COLLEY
Management Engineer



RICHARD O. MAHAN
Geometronics Engineer



OLLIE A. BROADWAY
Equipment Management Engineer



LEWIS G. GLOVER
Status and Atlas Chief



DIRK ROTTY
Geometronics Engineer



RAY P. ALLISON
Geometronics Cartographer



JAMES F. DIXON
Geometronics Cartographer

CONSULTATIONS AND STANDARDS



CHARLES R. WELLER
Assistant Director



DAVID B. TRASK
Chief Transportation Analysis Engineer



WILLIAM R. KINWORTHY
Chief Water Resource Engineer



CHARLES F. DWYER
Chief Engineer - Cableways (Denver)



LAWRENCE D. BRUESCH
Chief Highway Structures Engineer



STERLING J. WILCOX
Chief Construction and Maintenance
Engineer



THERAL R. NIELSEN
Chief Highway Design Engineer



JERRY M. HYDE
Structures Engineer



DICK L. HAHN
Solid Waste Management Engineer



EDMUND C. NEUMANN
Highway Safety Engineer



RONALD W. RHODS
Landscape Architect - Roadside Control



HARRY COORSH
Electrical Engineer



DANIEL M. MCVAY
Cadastral Engineer

TECHNOLOGICAL IMPROVEMENTS



HEYWARD T. TAYLOR, JR.
Assistant Director



BOONE Y. RICHARDSON
Chief Equipment Development Engineer



ADRIAN PELZNER
Chief Materials Engineer



DONALD L. SIROIS
Mechanical Engineer



LARRY E. MATSON
Mechanical Engineer



DAVID L. JONES
Materials Engineer



OLIN J. BOCKES
Systems Development, Geometronics



JAMES D. HOGAN
Systems Development Engineer
Computers



THEODORE A. LUPIEN
Chief, Engineering Design
Support Group



ROMAINE F. THOMPSON
Engineering Design Support Group

WO DIVISION OF ENGINEERING

Area Code 703 -- Dial 55 plus ext.

MYLES R. HOWLETT, Director
Ivonne A. Jaeger, Secretary

Extension
71811

OPERATIONS

Harold L. Strickland, Assistant Director 71827
Gloria J. Wenzlaff, Secretary

Stanley O. Bean, Jr., Chief Engineer -- 70575
Administrative Management, Data
Retrieval and Training. Provides super-
vision and guidance to the Technical
Information System, Training and Devel-
opment, Status and Drafting and to general
and unique operational problems.

Richard G. Deleisseques, Engineer -- 70456
Technical Data System. Plans,
organizes, and operates systems
for technical information storage and
retrieval. Coordinates activities for
Engineering Directives, Field Notes
Technical Reports, and Current Aware-
ness Programs.

Frances G. Owsley, Editor -- 79410
Technical Information System.
Edits and publishes Engineering
Field Notes and Technical Reports
publications.

Barbara J. Sam, Assistant Technical 70558
Information Specialist (Library) --
Implements the Current Awareness
Program and conducts Engineering
literature searches on request.
Maintains the in-Service and out-
Service distribution of the Engineering
technical publications. Maintains
the Technical Information Center
holdings.

_____ , Engineer -- Technical Recruitment Development and Training. Provides technical direction in recruit- ment, career development, man- power utilization, and training aspects of the Service-wide Engineering program. Analyzes manpower needs, assists in recruiting technical experts and formu- lates programs to provide needed training.	70456
 Lewis G. Glover -- Status and Atlas Chief. Provides leadership to the Drafting and Atlas Section and gives guidance on drafting and illustration needs to all Washington Office divisions.	 70427
 Edward F. Marshall -- Assistant Status and Atlas Chief. Edits Forest Series maps received from the Regional Offices. Maintains the National Forest boundary records.	 70427
 Robert P. Driskell -- Geographic Names Coordinator. Provides liaison on geographic names activity for all Regions and the Board on Geographic Names.	 70427
 Frank J. Hammond, Chief Engineer -- Manage- ment. Controls, reviews, or responds to Congressional mail. Coordinates Forest road and trail pollution abatement and other Engine- ering reports. Programs budget inputs and field allocations. Provides statistical information on R&T system.	 71821
 A. L. Colley -- Management Engineer. WO pollution abatement coordinator and generalist.	 71821

Ollie A. Broadway, Jr., Chief Engineer -- Equipment Management. Provides leadership and technical expertise in all phases of fleet equipment management to all resource divisions in the field. Coordinates this activity with other agencies in the USDA, other Government Departments and Bureaus, and private industry.	71835
John R. Swinnerton, Chief Engineer -- Geometronics. Provides Service-wide technical leadership in geometronics.	79050
Richard O. Mahan, Engineer -- Geometronics. Provides technical development in the area of photogrammetry for geometronics.	79050
Dirck Rotty, Engineer -- Geometronics. Coordinates, schedules and plans work for the Geometronics group and coordinates mapping activities with other Federal agencies.	79050
Ray P. Allison, Cartographer -- Geometronics. Provides administrative direction for the Photogrammetric Section including photogrammetric systems, stereoplotting, orthophotography scanning, ditizing, plate preparation and non-conventional imagery.	79050
James F. Dixon, Cartographer -- Geometronics. Specialist for Forest Service aerial photography activities. Forest Service representative on Departmental and Inter-departmental committees on aerial photography and photographic sales. Provides administrative direction to WO cartography section including photographic, orthophotographic, and cartographic reproductions.	79050

Photographic Laboratory Area Code
Ralph F. Fortune -- Chief 202 447-4685
Photographer, Washington, D. C.
Provides leadership to the Forest
Service WO Photographic Lab.

Office Support Services
Roger A. Nale -- Administrative 70532
Officer. Authorization for In-
Service Expenditures (6500-46).

Aileene B. McVay -- Statistics. 70475
Road and Trail Inventories;
FR&T Construction Progress
Reports; Tentative and Final
Accomplishment Reports.

CONSULTATIONS AND STANDARDS

Charles R. Weller, Assistant Director 70553
Ruth G. Kenestruck, Secretary

_____, Chief Engineer -- 70374
Transportation Analysis. Provides
leadership in transportation analysis
and operation of the transportation system.

William R. Kinworthy, Chief Engineer -- 71522
Water Resources. Consultation, leadership and guidance on Federal Power Commission projects. Forest Service contact for USDA in coordination of projects with the Federal Power Commission. Guidance on engineering aspects of water resource projects.

Area Code
Charles F. Dwyer, Chief Engineer -- 303 234-4405
Cableways (Denver). Provides leadership and guidance in the field of aerial passenger tramways, ski lifts and tows. Forest Service representative to:
American National Standards Institute
Committee on Aerial Passenger Tramways B77; International Organization for Transport by Ropeway; and Association of Recreational Tramway Authorities.

Lawrence D. Bruesch, Chief Engineer -- 70419
Highway Structures. Provides leader-
ship in the field of highway structures
for the transportation system.

Sterling J. Wilcox, Chief Engineer -- Construction and Maintenance. Provides leadership in construction and mainte- nance of roads and trails in the National Forest Transportation System.	70418
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Theral R. Nielsen, Chief Engineer -- Highway Design. Consults with Engineers, Foresters and others about survey and design of Forest Service roads. Prepares material for Engineering Handbooks and Manuals on the implementation of standards and policy.	71479
Jerry M. Hyde, Structures Engineer. Provides Service-wide technical leadership and assistance to the field in design, construction and maintenance of the buildings by reviews, coordination with other divisions and agencies, and preparing material for Forest Service Manuals and Handbooks on policy and standards.	70490
Dick L. Hahn, Solid Waste Management Engineer. Provides technical leadership in programs on solid waste activities. Coordinates public health and pollution control activities with other Federal agencies.	71522
Daniel M. McVay, Cadastral Engineer. Provides technical and professional leader- ship, direction and coordination of the Service-wide cadastral engineering program.	70474
Edmund C. Neumann, Highway Safety Engineer. Provides leadership to a highway safety program in complying with the Highway Safety Act of 1966. Cooperates with National Highway Safety Administration on projects that are concerned with accidents and highway safety on National Forest Development Road System.	70436

Ronald W. Rhoads, Landscape Architect --
Roadside Control. Provides leadership in
roadside landscape development, traffic
control, and signing. Coordinates with
engineers in applying advanced techniques
of adapting highways and roads to the
environment in an esthetically acceptable,
safe and functional manner.

70436

Harry Coorsh, Electrical Engineer.
Provides assistance to field offices in
design of electrical facilities. Reviews
the compatibility of utilization equipment
with the electric supply system.

70490

TECHNOLOGICAL IMPROVEMENTS

Heyward T. Taylor, Jr., Assistant Director Judy K. Rice, Secretary	70508
Boone Y. Richardson, Chief Engineer -- Equipment Development. Plans and programs the Forest Service Equipment Development Program.	70883
Donald L. Sirois -- Mechanical Engineer. Provides programing and technical guidance for Service- wide equipment development and testing.	70883
Larry E. Matson -- Mechanical Engineer. Provides technical guidance in equipment development studies.	70883
Adrian Pelzner -- Chief Materials Engineer. Provides leadership and direction con- cerning the application of engineering technology to various construction materials such as soil, rock, asphalt, concrete, metal, and wood.	71805
David L. Jones -- Materials Engineer. Provides technical guidance in the application of engineering technology to construction materials.	71805
Olin D. Bockes, System Investigation Engineer -- Geometronics. Develops and tests new technology in remote sensing and display techniques to apply to Forest Service needs.	71712
James D. Hogan, Engineer, System Development -- Computer. Investigates, develops and implements Engineering computer applications and systems.	71712

Theodore A. Lupien, Chief Engineer -- 71661

Design Support Group (EDSG). Develops, designs and implements computer programs for use in road design, structures, water systems, and transportation systems.

Romaine E. Thompson, Engineer -- 71661

Design Support Group (EDSG). Assists in developing and implementing computer programs for use in road design, structures, water systems and transportation.

NEWS ITEMS

AN EASY SOLUTION TO SKY LINING

By: C. D. Swarthout, Division of Engineering
California Region

In this paper the author discusses a computer program which can be used to analyze skyline logging systems and provides the user with a printout showing the proposed system, the final skyline layout, a live, standing, or running skyline analysis. The results of this analysis show the feasibility of a proposed skyline system for one sale or for an area requiring the development of a log transportation system to serve many sales.

The program was developed in Region 5. A very large portion of Region 5's timber is old growth timber and is located in hard-to-reach areas. Harvesting this timber in many instances requires a skyline system. Region 5 has been using this program for the past two years and has found it very useful in analyzing alternate log transportation systems. The program requires about 30 seconds of computer time to analyze the average skyline profile; therefore, it is a very powerful tool that enables a planner to obtain facts very quickly on alternate skyline systems.

Input data for this program is easy to prepare. One control card is used to provide the design parameters for the entire list of cable way profiles. The profile data is usually prepared directly, using a Kelsh Plotter, a photogrammetric measuring instrument equipped with a X, Y, Z digitizer and key punch machine. If this instrument is not available or if the profiles have been obtained by other methods, the data can be key punched manually. The horizontal measurement along the profiles is recorded in either the X, or Y field. The Z field is always used to record the elevation of the point.

The program is operatable on the Control Data Corporation 3100 Computer and Univac's 1108. Information on the use of the program may be obtained by contacting C. D. (Bob) Swarthout, Forest Service, Region 5, San Francisco, Calif.

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THE EFFECTS OF DEICING SALT ON CONIFEROUS TREES

By: Byron E. Foss

Mr. Foss completed his Master's Thesis entitled "The Effects of Deicing Salt Spray on Coniferous Trees" January 29, 1971. He obtained the information relayed in his interesting paper by performing a special study project while working toward a Master's Degree with a Joint Major in Botany and Zoology at the University of Wisconsin in Milwaukee.

According to his findings, salt can injure plants, either by accumulation of chloride via root absorption, or by foliar spray. Salt spray on the surface of the needles of coniferous plants creates an unfavorable relationship between the osmotic concentration of the surface solution and the internal osmotic concentrations of the needles. When possible, only those species of coniferous trees relatively tolerant to salt spray should be located next to highways. Spruces are generally more tolerant than pines; those conifers which appear to be most susceptible to salt damage are the potted red pine and the eastern white pine. Grassy vegetation which is moderately salt tolerant should be planted in areas denuded of trees, to prevent erosion and to beautify the roadside environment.

Very little research concerning the direct effects of deicing salt sprays on plants has been done. Additional study is required before the relationship of deicing salt spray to visible damage on coniferous trees is fully understood.

Mr. Foss' paper may be useful in developing guidelines for the planting of screening vegetation along roads where salting can be anticipated. Also it may be of special interest to our landscape architects and useful to Forest engineers working with State and county highway departments on roads that traverse National Forest lands.

For those who are interested in obtaining copies of this paper, write Mr. Byron Foss, who is located on the Monongahela National Forest in West Virginia.

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TIMBER CRIB RETAINING WALL STUDY

By: Adrian Pelzner, Chief Materials Engineer, WO

A study is underway to evaluate existing design criteria for timber crib retaining structures and to develop or modify these criteria so that such structures can be fabricated from locally available timber and backfilled with locally available soils. The study is being conducted by the University of Idaho under the terms of a cooperative agreement with the Forest Service. Although timber has long been used successfully in retaining structures, few criteria have been developed to aid or guide designers in this use. Attention will be focused on the criteria for the structural quality of the timber members, the connecting devices, and the physical characteristics of the foundation and backfill soils. The principal investigators for the study are Professor Robert L. Schuster, Chairman, Department of Civil Engineering at the University of Idaho and Walter V. Jones, Soils Engineer, Idaho Department of Highways.

As an important part of this study, the investigators are analyzing information on timber retaining structures supplied by the Regions, Experiment Stations and other Forest Service units. They have also visited the sites of timber and other type retaining structures as well as the Forest Products Laboratory.

The ultimate goal of the study is to produce a design system for timber crib retaining walls that is better and more economical than the designs presently being used for this type structure. The target date for completion is December 31, 1972. Information developed from the study will be distributed Service-wide.

If warranted, a second and related study may be initiated to design, instrument and monitor the performance of a timber crib retaining wall. This wall would be constructed at an actual project site and in accordance with the design recommendations developed in the first study.

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SPECIAL REPORT ON THE FIRST
EARTH RESOURCES TECHNOLOGY SATELLITE

By: Ray P. Allison, WO

On July 23, 1972 the first Earth Resources Technology Satellite (ERTS-1) was launched into a circular, near polar earth orbit from Vandenberg Air Force Base, California.

The mission of ERTS-1 is to monitor earth resources from satellite sensors. Over 300 scientific investigators from the United States and 37 countries are receiving data from ERTS-1. The satellite is covering 80 percent of the United States with 500 photographs.

The July 31, 1972 issue of Aviation Week and Space Technology magazine features a special report on the ERTS-1. The article provides information on all systems aboard the satellite, and is recommended reading for those interested in the ERTS Program. Additional information on the ERTS Program may be obtained from Olin Bockes of the Washington Office Division of Engineering.

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EDITOR'S NOTE: The news item by Sam Fischer and Ed Tomm in Volume 4, Numbers 3 and 4, March-April issue of the Field Notes has stirred up several controversies. Good! I'm glad to know that you are reading the Field Notes.

The phraseology, "Some of the survey crews are scheduled to work their first 40 hours of the week in the first 4 days," was misleading. In actuality, the crews are working on an unscheduled first 40-hour basis.

Gerald Baughman of the WO Personnel Management Pay Section states:

"First 40-hour tours are non-standard indefinite tours of duty and can be established only when working hours are determined by irregular and unpredictable needs for service and when functioning of the organization would otherwise be seriously handicapped or costs would be substantially increased (FSM 6161.13b). Whenever possible, working hours should be scheduled in advance."

