FILE FOLDER

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DUPLICATE

CONTRACT N62470-74-C-0628

SPECIFICATION NO. 05-74-0628 and AMENDMENT NO. 1

WEYERHAEUSER COMPANY
(Contractor)

for

TIMBER HARVESTING, FY-74

at the

MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA

NAVAL FACILITIES ENGINEERING COMMAND
DEPARTMENT OF THE NAVY
WASHINGTON, D.C.

STANDARD FORM 114-A
MARCH 1960
PRESCRIBED BY GENERAL
SERVICES ADMINISTRATION
REGULATION 1-IV-302.00

SALE OF GOVERNMENT PROPERTY
BID AND AWARD

BID
(This Section to be completed by the Bidder)

DATE OF BID: 25 October 19 73

In compliance with the Invitation identified on the cover page hereof, and subject to all the General Sale Terms and Conditions (Standard Form 114-C, March 1960 Edition), and any Special Conditions contained in the Invitation, all of which are incorporated as a part of this Bid, the undersigned offers and agrees (as set forth in Condition No. 3 of Standard Form 114-C), if this Bid be accepted within 60 calendar days (60 calendar days if no period be specified by the Government or by the Bidder, but not less than 10 calendar days in any case) after date of Bid opening, to purchase and pay for any or all of the items or lots of property listed on the attached Item Bid page(s) 3 (and, if a detailed description of property is furnished with this Invitation, as more particularly set forth therein) upon which prices are bid, at the price set opposite each item or lot, and unless otherwise specified in the description or in any Special Conditions, to remove the property ~~within~~ prior to 30 JUN 75 ____ calendar days (10 calendar days if no period specified) after notice of acceptance by the Government. The total amount bid is $ 585,181.00 and attached is the required bid deposit in the form of check, in the amount of $ 117,036.20

(Envelopes containing bids must be sealed and marked on the face with the name and address of the Bidder, the Invitation number and the date and hour of opening.)

BIDDER REPRESENTS: *(Check appropriate boxes)*

1. That he ☐ is, ☒ is not, a small business concern. *(See Standard Form 114-C for definition of small business and small business classifications referred to in 2, hereinbelow.)*

~~2. If Bidder is a small business concern, that it is a small business concern in the classification or classifications checked below applicable to the Bidder's principal business activity.~~

3. (a) That he ☐ has, ☒ has not, employed or retained any company or person (other than a full-time bona fide employee working solely for the Bidder) to solicit or secure this contract, and (b) that he ☐ has, ☒ has not, paid or agreed to pay any company or person (other than a full-time bona fide employee working solely for the Bidder) any fee, commission, percentage or brokerage fee, contingent upon or resulting from the award of this contract; and agrees to furnish information relating to (a) and (b) above as requested by the Contracting Officer. *(For interpretation of the representation, including the term "bona fide employee," see Code of Federal Regulations, Title 44, Part 150.)*

RECEIPT OF THE FOLLOWING AMENDMENTS ACKNOWLEDGED: AMENDMENT NO. 1

NAME AND ADDRESS OF BIDDER *(Street, city, zone, and State Type or print)*
Weyerhaeuser Company
P. O. Box 1391
New Bern, North Carolina 28560

SIGNATURE OF PERSON AUTHORIZED TO SIGN BID
/s/Ed Kessler

SIGNER'S NAME AND TITLE *(Type or print)*
ED KESSLER - PROCUREMENT REP.

ACCEPTANCE BY THE GOVERNMENT
(This Section for Government use only)

DATE OF ACCEPTANCE: 30 October 19 73

ACCEPTED AS TO ITEMS NUMBERED
1, 2, 3 and 4

UNITED STATES OF AMERICA
BY /s/ R. E. Daggett
(Contracting Officer)

TOTAL AMOUNT
$ 585,181.00

CONTRACT NUMBER
N62470-74-C-0628
Spec. 05-74-0628

TITLE OF CONTRACTING OFFICER
R. E. DAGGETT, CAPT, CEC, USN
For Commander, Naval Facilities
Engineering Command (Contracting Officer)

The contractor shall make payments to the Government prior to commencing operations in each payment unit area. Full payment of the total amount of the individual payment unit area must be made prior to removal of any property therein. The contractor may pay for more than one payment unit area at a time or the entire amount of the contract. The amount of payment for each payment unit area is as follows: Compartment No. 1 $196,863.87, Compartment No. 4 $230,769.52 and Compartment No.18 $157,547.61.

Notice to proceed will be issued upon receipt of payment in full for the first payment unit area to be entered.

The entire work shall be completed prior to 30 June 1975.

U.S. GOVERNMENT PRINTING OFFICE : 1960 OF—560992

STANDARD FORM 114 B MARCH 1960 PRESCRIBED BY GENERAL SERVICES ADMINISTRATION REGULATION 1-IV.30.00	SALE OF GOVERNMENT PROPERTY ITEM BID PAGE	PAGE NO. 2	SOLICITATION NO. N62470-74-B-0628

ITEM NO.	ARTICLES FOR SALE	QUANTITY (No. of Units)	UNIT OF MEASURE	PRICE BID PER UNIT	TOTAL PRICE BID DOLLARS	CENTS
	Total amounts bid shall be under the conditions set forth herein, payable to the Government.					
	Item 1. Total amount to be paid to the Government for the harvesting of pine saw timber, complete in accordance with the drawing and specification.			LUMP SUM	481532	00
	Item 2. Total amount to be paid to the Government for the harvesting of pine pulpwood, complete in accordance with the drawing and specification.			LUMP SUM	80750	00
	Item 3. Total amount to be paid to the Government for the harvesting of hardwood saw timber, complete in accordance with the drawing and specification.			LUMP SUM	13403	00
	Item 4. Total amount to be paid to the Government for the harvesting of hardwood pulpwood, complete in accordance with the drawing and specification.			LUMP SUM	9496	00
				TOTAL	585181	00

Award of the contract, if made, will be based upon the highest bid computed to be the total of Bid Items 1, 2, 3 and 4. Split awards will not be made.

Definition of Small Business, Std. Form 114-C (March 1960 Edition) is hereby deleted and the following definition is substituted therefor:

(1) For the purpose of the sale of Government-owned timber a small business is a concern that:
   (i) Is primarily engaged in logging or forest products industry;
   (ii) Is independently owned and operated;
   (iii) Is not dominant in its field of operations; and
   (iv) Together with its affiliates employs not more than 250 persons.

(2) Any concern which submits bids or offers for the purchase of Government-owned timber in its own name but which proposes to resell such timber in the form of logs, bolts, pulpwood or similar products is a small business concern only when:
   (i) It is a small business concern within the meaning of (1) above, and
   (ii) In the case of Government sales reserved for or involving the preferential treatment of small businesses, such purchase is not financed by a concern which is not small within the meaning of Title 13, Sections 121.3-8, Code of Federal Regulations, (21 Fed. Register 814) or if the purchase is financed by a business in the forest products industry within the meaning of Title 13, Sections 121.3-9, Code of Federal Regulations.

BIDDER IS CAUTIONED TO INSPECT THE PROPERTY

BIDDER'S NAME SHOULD APPEAR ON EACH ITEM BID PAGE CONTAINING A BID

NAME OF BIDDER (Type or print)

Weyerhaeuser Company

16-303

STANDARD FORM 114-C
MARCH 1960 EDITION
PRESCRIBED BY GENERAL
SERVICES ADMINISTRATION
REGULATION 1-IV-302.00

SALE OF GOVERNMENT PROPERTY
GENERAL SALE TERMS AND CONDITIONS

1. INSPECTION. The Bidder is invited, urged, and cautioned to inspect the property to be sold prior to submitting a bid. Property will be available for inspection at the places and times specified in the Invitation. In no case will failure to inspect constitute grounds for the withdrawal of a bid after opening.

2. CONDITION AND LOCATION OF PROPERTY. Unless otherwise specifically provided in the Invitation, all property listed therein is offered for sale "as is" and "where is." If it is provided therein that the Government shall load, then "where is" means f.o.b. conveyance at the point specified in the Invitation. The description is based on the best available information. However, the Government makes no warranty, express or implied, as to quantity, kind, character, quality, weight, size, or description of any of the property, or its fitness for any use or purpose. Except as provided in Conditions No. 8 and 10, no request for adjustment in price or for rescission of the sale will be considered. This is not a sale by sample.

3. CONSIDERATION OF BIDS. The Bidder agrees that his bid will not be withdrawn within the period of time specified for the acceptance thereof following the opening of bids (sixty (60) calendar days if no period be specified by the Government or by the Bidder but not less than ten (10) calendar days in any case) and that during such period his bid will remain firm and irrevocable. The Government reserves the right to reject any or all bids, to waive any technical defects in bids, and, unless otherwise specified by the Government or by the Bidder, to accept any one item or group of items in the bid, as may be in the best interest of the Government. Unless the Invitation otherwise provides, bids may be submitted on any or all items. However, unless the Invitation otherwise provides, a bid covering any listed item must be submitted on the basis of the unit specified for that item and must cover the total number of units designated for that item. In case of error in the extension of prices, unit prices will govern.

4. PAYMENT. The Purchaser agrees to pay for property awarded to him in accordance with the prices quoted in his bid. Payment of the full purchase price, subject to any adjustment pursuant to Condition No. 8, must be made within the time specified for removal and prior to delivery of any of the property. In the event, however, any adjustment is made pursuant to Condition No. 8, then payment must be completed immediately subsequent to such adjustment. The balance of the purchase price after applying the total bid deposit made by the Purchaser under the Invitation (or otherwise the full purchase price) shall be paid to the Contracting Officer in cash, or by certified check, cashier's check, traveler's check, bank draft, or postal or express money order, made payable to the Treasurer of the United States (or, if so specified in the Invitation made payable either to the Government agency conducting the sale or as directed by that agency). The Government reserves the right to apply any bid deposits made under the Invitation by a Bidder against any amounts due to the Government under a contract awarded to him thereunder. In those instances where the total sum becoming due to the Government from the Purchaser on a contract awarded to him under the Invitation is less than the total amount deposited with his bid, the difference will be promptly refunded to him. Also, deposits accompanying bids which are not accepted will be promptly returned to him.

5. TITLE. Unless otherwise specified in the Invitation, title to the items of property sold hereunder shall vest in the Purchaser as and when full and final payment is made, except that if the Invitation provides that loading will be performed by the Government, title shall not vest until such payment and loading are completed. On all motor vehicles and motor-propelled or motor-drawn equipment requiring licensing, a certificate of release, Standard Form 97 (or a State certificate of title if such a certificate of title has been issued to the Government), will be furnished for each vehicle and piece of equipment.

6. DELIVERY AND REMOVAL OF PROPERTY. Unless otherwise specified in the Invitation, the Purchaser shall be entitled to obtain the property upon vesting of title of the property in him. Delivery shall be made at the designated location, and the Purchaser shall remove the property at his expense within the period of time originally specified in the Invitation or within such additional time as may be allowed by the Contracting Officer. The Purchaser shall reimburse the Government for any damage to Government property caused by the removal operations of the Purchaser. If the Purchaser is permitted by the Govenment to remove the property after the expiration of the period prescribed or allowed for removal, the Government, without limiting any other rights which it may have, may require Purchaser to pay a reasonable storage charge.

7. DEFAULT. If, after the award, the Purchaser breaches the contract by failing to make payment as required by Condition No. 4, or by failing to remove the property as required by Condition No. 6, then the Government may send the Purchaser a fifteen-day written notice of default (calculated from date of mailing), and upon Purchaser's failure to cure such default within that period (or such further period as the Contracting Officer may allow), the Purchaser shall lose all the right, title and interest which he might otherwise have acquired in and to the property as to which a default has occurred. The Purchaser agrees that in the event he fails to pay for the property or remove the same within the prescribed time, the Government at its election and upon notice of default shall be entitled to retain (or collect) as liquidated damages a sum equal to 20% of the purchase price of the item (or items) as to which the default has occurred. Whenever the Government exercises this election, it shall specifically apprise the Purchaser either in its original notice of default (or in separate subsequent written notice) that upon the expiration of the period prescribed for curing the default the formula amount will be retained (or collected) by the Government as liquidated damages. The maximum sum, moreover, which may be recovered by the Government as damages for failure of the Purchaser to remove the property and pay for the same shall be such formula amount. If the Purchaser otherwise fails in the performance of his obligations thereunder, the Government may exercise such rights and may pursue such remedies as are provided by law or under the contract.

8. ADJUSTMENT FOR VARIATION IN QUANTITY OR WEIGHT. When property is sold on a "unit price" basis, the Government reserves the right to vary the quantity or weight delivered by 10% from the quantity or weight listed in the Invitation; and the Purchaser agrees to accept delivery of any quantity or weight within these limits. The purchase price will be adjusted upwards or downwards in accordance with the unit price and on the basis of the quantity or weight actually delivered. No adjustment for variation will be made where property is sold on a "price for the lot" basis.

9. WEIGHING. Where weighing is necessary to determine the exact purchase price hereunder, the Purchaser shall arrange for and pay all expenses of weighing material (unless Government scales are available on the premises). All switching charges shall be paid by the Purchaser. When removal is by truck, weighing shall be under the supervision of the Government and at its option on: (a) Government scales, (b) certified scales, or (c) other scales acceptable to both parties. When removal is by rail, weighing shall be on railroad track scales, or by other means acceptable to the railroad for freight purposes. Government-approved weighing shall establish the exact purchase price and govern the making of full payment thereon.

10. RISK OF LOSS. (1) After mailing notice of award, and prior to passage of title to the Purchaser, the Government will be responsible for the care and protection of the property and any loss, damage, or destruction occurring during such period will be adjusted by the Contracting Officer. (2) After passage of title to the Purchaser, and prior to the date specified for removal, the Government shall be responsible only for the exercise of reasonable care for the protection of the property. (3) After passage of title and after the date specified for removal of the property, or any extension approved in writing by the Contracting Officer, all risk of loss, damage, or destruction from any cause whatsoever shall be borne by the Purchaser.

11. LIMITATION ON GOVERNMENT'S LIABILITY. Except for transportation charges when a return of property at Government cost is authorized by the Government, the measure of the Government's liability in any case where liability of the Government to the Purchaser has been established shall not exceed refund of such portion of the purchase price as the Government may have received.

12. ORAL STATEMENTS AND MODIFICATIONS. Any oral statement or representation by any representative of the Government, changing or supplementing this contract or any Condition thereof, is unauthorized and shall confer no right upon the Purchaser.

13. COVENANT AGAINST CONTINGENT FEES. Purchaser warrants that no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial agencies maintained by the Purchaser for the purpose of doing business. For breach of this warranty, the Government shall have the right to annul this contract without liability or at its option, to recover from the Purchaser the amount of such commission, percentage, brokerage, or contingent fee, in addition to the consideration herein set forth.

14. OFFICIALS NOT TO BENEFIT. No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this contract or to any benefit that may arise therefrom, unless it be made with a corporation for its general benefit.

15. DISPUTES. Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the Purchaser. The decision of the Contracting Officer shall be final and conclusive unless, within thirty (30) days from the date of receipt of such copy, the Purchaser mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Secretary. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the Purchaser shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the Purchaser shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

16. DEFINITIONS. As used throughout this contract, the following terms shall have the meaning set forth below:

(a) The term "Secretary" means the Secretary, the Under Secretary, or any Assistant Secretary of the Department, and the head or any assistant head of the Federal agency; and the term "his duly authorized representative" means any person or persons or board (other than the Contracting Officer) authorized to act for the Secretary.

(b) The term "Contracting Officer" means the person accepting the bid in whole or in part on behalf of the Government, and any other officer or civilian employee who is a properly designated Contracting Officer; and the term includes, except as otherwise provided in this contract, the authorized representative of a Contracting Officer acting within the limits of the representative's authority.

INSTRUCTIONS TO BIDDERS

1. BID DEPOSIT. Where a bid deposit is required by the Invitation, such deposit must accompany the bid and be furnished in cash, or by postal or express money order; cashier's, certified, or traveler's check; or a combination thereof; made payable to the Government agency conducting the sale unless otherwise directed in the Invitation. An irrevocable commercial letter of credit may be used to cover the bid deposit or the balance of the purchase price should an award be made unless otherwise directed in the Invitation.

2. PREPARATION OF BIDS. Bids shall be filled out in ink, indelible pencil, or typewriter, with all erasures, strike overs, and corrections initialed in ink or indelible pencil.

DEFINITION OF SMALL BUSINESS

1. For this purpose, a small business concern is a concern which, together with its affiliates, falls within one of the classifications set forth in 2 below; is independently owned and operated; and is not dominant in its field of operation. (See Code of Federal Regulations, Title 13, Part 121, as amended, if additional information is desired.)

2. Small Business Classifications.

(a) Primarily engaged in manufacturing and employs not more than 500 persons.

(b) Primarily engaged as a nonmanufacturer, except as specified in (c) below, and had an average annual sales volume or receipts, less returns and allowances, of $5,000,000 or less for its preceding three fiscal years.

(c) Primarily engaged in the purchase of materials not domestically produced and had an average sales volume or receipts, less returns and allowances, of $25,000,000 or less for its preceding three fiscal years.

(d) Certified as a small business concern by the Small Business Administration.

109 200 8330

ADDITIONAL GENERAL PROVISIONS

17. PAYMENTS. Clause 4, Payments, is hereby modified as follows: The deposit made by the Contractor shall be applied wholly or in part against the first payment due to the Government under this contract. Payments to the Government shall be made promptly prior to commencing operations in each payment unit area defined in the specification. The amount of each payment shall be determined by computing the value based on lump sum bid prices, of the estimated volume as determined by scaling during timber marking of timber products marked for cutting in each payment unit. Payments shall be made by cash, certified check, cashier's check, bank draft, postal or express money order payable to the Officer in Charge of this contract.

18. INTEREST WARRANTY. The bidder certifies that he is not an officer or enlisted member of the Armed Forces on active duty, is not a civilian employee of any of the military departments, including the Department of Defense, and is not a member of the immediate family, a dependent, or an agent of such officer or member or employee.

19. DELIVERY AND REMOVAL OF PROPERTY. Clause 5, Title, is hereby modified as follows: Title to the timber in each payment unit section as defined in the specification shall vest in the Purchaser as and when full and final payment of each payment unit section is made and severance from the soil of such timber is accomplished. Delivery shall be at the designated location, and the Purchaser shall remove the property at his expense. The Purchaser shall reimburse the Government for any damage to Government property caused by the removal operations of the Purchaser. If the Purchaser fails to remove the property as and when instructed, the Government shall have the right to charge the Purchaser and collect upon demand a reasonable storage charge if the property is stored on premises owned or controlled by the Government, or store the property elsewhere for the Purchaser's account, and all costs incident to such storing, including but not limited to handling and moving charges, shall be borne and paid by the Purchaser.

20. CONDITION OF PROPERTY. All material is sold without any warranties whatsoever, express or implied. This is not a sale by sample.

21. DEFAULT. In the case of the Purchaser's failure to comply in any respect with the provisions of this contract, the Government may terminate the contract by written notice to the Purchaser and may resell the material and charge the Purchaser with any resulting loss. Any deposit in the hands of the Government may be retained by the Government on account of said loss. If the amount of the deposit exceeds the loss to the Government, the excess shall be refunded to the Purchaser.

22. EIGHT-HOUR CLAUSE. This contract, to the extent that it is of a character specified in the Eight-Hour Law, Act of June 19, 1912 (37 Stat. 137), as amended (40 U.S. Code 324-326) and is not covered by the Walsh-Healey Public Contracts Act of June 30, 1936 (49 Stat. 2036), as

amended (41 U.S. Code 35-45) is subject to the following provisions and exceptions of said Eight-Hour Law of 1912 as amended, and to all other provisions and executions of said Law:

"No Laborer or mechanic doing any part of the work contemplated by this contract, in the employ of the Purchaser (or Contractor) or any subcontractor contracting for any part of the said work, shall be required or permitted to work more than eight hours in any one calendar day upon such work except upon the condition that compensation is paid to such laborer or mechanic in accordance with the provisions of this clause. The wages of every such laborer and mechanic employed by the Purchaser (or Contractor) or any subcontractor engaged in the performance of this contract shall be computed on a basic day rate of eight hours per day; and work in excess of eight hours per day is permitted only upon the condition that every such laborer and mechanic shall be compensated for all hours worked in excess of eight hours per day at not less than one and one-half times the basic rate of pay. For each violation of the requirements of this clause a penalty of five dollars shall be imposed upon the Purchaser (or Contractor) for each laborer or mechanic for each calendar day in which such employee is required or permitted to labor more than eight hours upon said work without receiving compensation computed in accordance with this clause, and all penalties thus imposed shall be withheld for the use and benefit of the Government."

23. NONDISCRIMINATION IN EMPLOYMENT. "In connection with the performance of work under this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer, advising the said labor union or workers' representative of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity in effect as of the date of this contract.

(e) The Contractor will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by rules, regulations, and orders of the said Committee, or pursuant thereto, and will permit access to his books, records, and accounts by the Contracting Agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's non-compliance with the non-discrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled in whole or in part and the Contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

(g) The Contractor will include the provisions of the foregoing paragraphs (a) through (f) in every first-tier subcontract or purchase order, so that such provisions will be binding upon each subcontractor or vendor, and will require each first-tier subcontractor or vendor similarly to include the provisions of paragraphs (a) through (f) in any subcontract or purchase order which he places, unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 303 of Executive Order No. 10925 of March 6, 1961. The Contractor will take such action with respect to any subcontract or purchase order as the Contracting Agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Contracting Agency; the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

24. CONVICT LABOR. In connection with the performance of work under this contract, the Purchaser (or Contractor) agrees not to employ any person undergoing sentence of imprisonment at hard labor.

25. WORK OUTSIDE OF REGULAR HOURS. If the Purchaser desires to carry on his work outside of regular hours or on Sundays or holidays, he may submit application to the Officer in Charge but shall allow ample time to enable satisfactory arrangement to be made by the Government for inspection and for providing necessary Gate Service.

26. SECURITY REQUIREMENTS. No employee or representative of the Purchaser will be admitted to the site of the work unless he furnishes satisfactory proof that he is a citizen of the United States or if an

alien, his residence within the United States is legal. All employees or representatives of the Purchaser shall wear identification badges in accordance with station requirements. The Purchaser shall provide each of his employees or representatives with a badge suitable to the Officer in Charge. This badge shall be substantially constructed and shall show the name of the Purchaser and a serial number. The Purchaser shall provide, in writing, and without cost to the Government, all information concerning identification and citizenship of the employees as required by the Officer in Charge.

27. FIRE PREVENTION AND PROTECTION. The Purchaser shall take all necessary precautions for the prevention of forest fires and shall take immediate steps to suppress all fires resulting from his operations. The Purchaser shall maintain at the site of the work, in suitable tool boxes, a sufficient number of hand fire tools so that each employee can be supplied with suitable hand fire tools in case of fire. Smoking will be restricted to areas to be indicated by the Officer in Charge. No smoking will be permitted in restricted areas. Flame permits shall be obtained from the Officer in Charge prior to performing any burning operations. All fires, whether accidental or not, shall be reported immediately to the Officer in Charge. Any and all expense incurred by the Government in the process of extinguishing fires resulting from the negligence or fault of the Purchaser shall be reimbursed in full to the Government by the Purchaser.

28. INTEREST. Notwithstanding any other provision of this contract, unless paid within 30 days all amounts that become payable by the Contractor to the Government under this contract (net of any applicable tax credit under the Internal Revenue Code) shall bear interest at the rate of six per cent per annum from the date due until paid, and shall be subject to adjustments as provided by Part 6 of Appendix E of the Armed Services Procurement Regulation, as in effect on the date of this contract. Amounts shall be due upon the earliest one of (i) the date fixed pursuant to this contract, (ii) the date of the first demand for payment, (iii) the date of a supplemental agreement fixing the amount, or (iv) if this contract provides for revision of prices, the date of written notice to the Contractor stating the amount of refund payable in connection with a pricing proposal or in connection with a negotiated pricing agreement not confirmed by contract supplement.

STANDARD FORM 25
JUNE 1967 EDITION
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.801

PERFORMANCE BOND

(See Instructions on reverse)

DATE BOND EXECUTED (Must be same or later than date of contract)
November 25, 1973

PRINCIPAL (Legal name and business address)

Weyerhaeuser Company
P. O. Box 1391
New Bern, North Carolina 28560

TYPE OF ORGANIZATION ("X" one)

☐ INDIVIDUAL ☐ PARTNERSHIP
☐ JOINT VENTURE ☒ CORPORATION

STATE OF INCORPORATION
Washington

SURETY(IES) (Name(s) and business address(es))

National Surety Corporation
Chicago, Illinois

PENAL SUM OF BOND

MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENT(S)
	146	295	25

CONTRACT DATE	CONTRACT NO.
Oct. 30, 1973	N62470-74-C-0628

KNOW ALL MEN BY THESE PRESENTS, That we, the Principal and Surety(ies) hereto, are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally: *Provided*, That, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal entered into the contract identified above;

NOW, THEREFORE, if the Principal shall:

(a) Perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the Government, with or without notice to the Surety(ies), and during the life of any guaranty required under the contract, and shall also perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety(ies) being hereby waived; and

(b) If the said contract is subject to the Miller Act, as amended (40 U.S.C. 270a-270e), pay to the Government the full amount of the taxes imposed by the Government which are collected, deducted, or withheld from wages paid by the Principal in carrying out the construction contract with respect to which this bond is furnished; then the above obligation shall be void and of no effect.

IN WITNESS WHEREOF, the Principal and Surety(ies) have executed this performance bond and have affixed their seals on the date set forth above.

PRINCIPAL

	1.	2.	
Signature(s)	Keith L. Lamb (Seal)	Flora S. Brown (Seal)	Corporate Seal
Name(s) & Title(s) (Typed)	Keith L. Lamb Vice-President	Flora S. Brown Asst. Secretary	

INDIVIDUAL SURETY(IES)

	1.	2.
Signature(s)	(Seal)	(Seal)
Name(s) (Typed)		

CORPORATE SURETY(IES)

SURETY A	Name & Address	National Surety Corporation	STATE OF INC. Ill.	LIABILITY LIMIT $146,295.25	
	Signature(s)	1. Hinton Leigh	2.		Corporate Seal
	Name(s) & Title(s) (Typed)	1. Hinton Leigh Attorney-in-Fact	2.		

25-105

STN-0139-200-2102
PLATE NO. 10425 (FRONT)

CORPORATE SURETY(IES) *(Continued)*

SURETY B	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY C	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY D	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY E	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY F	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		
SURETY G	Name & Address		STATE OF INC.	LIABILITY LIMIT	Corporate Seal
	Signature(s)	1.	2.		
	Name(s) & Title(s) *(Typed)*	1.	2.		

BOND PREMIUM	RATE PER THOUSAND	TOTAL
	$ 12.50	$ 1,829.00

INSTRUCTIONS

1. This form is authorized for use in connection with contracts for construction work or the furnishing of supplies or services. There shall be no deviation from this form without approval by the Administrator of General Services.

2. The full legal name and business address of the Principal shall be inserted in the space designated "Principal" on the face of this form. The bond shall be signed by an authorized person. Where such person is signing in a representative capacity (e.g., an attorney-in-fact), but is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved, evidence of his authority must be furnished.

3. (a) Corporations executing the bond as sureties must be among those appearing on the Treasury Department's list of approved sureties and must be acting within the limitations set forth therein. Where more than a single corporate surety is involved, their names and addresses (city and State) shall be inserted in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)," and in the space designated "SURETY(IES)" on the face of this form only the letter identification of the Sureties shall be inserted.

(b) Where individual sureties execute the bond, they shall be two or more responsible persons. A completed Affidavit of Individual Surety (Standard Form 28), for each individual surety, shall accompany the bond. Such sureties may be required to furnish additional substantiating information concerning their assets and financial capability as the Government may require.

4. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Seal"; and, if executed in Maine or New Hampshire, shall also affix an adhesive seal.

5. The name of each person signing this performance bond should be typed in the space provided.

IMPORTANT

This amendment must be acknowledged when your bid is submitted. Failure to acknowledge the amendment may constitute grounds for rejection of the bid. If your bid has been submitted prior to the receipt of this amendment, acknowledgment may be made by telegram, which should state whether the price contained in your sealed bid is to remain unchanged, is to be decreased by an amount, or is to be increased by an amount. The acknowledgment must be received prior to bid opening time unless there is evidence that it may be accepted pursuant to the provisions of the Armed Services Procurement Regulations.

GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101

AMENDMENT OF SOLICITATION/

1. AMENDMENT/	2. EFFECTIVE DATE	3. REQUISITION/PURCHASE REQUEST NO.	4. PROJECT NO. (If applicable)
No. 1	20 Sep 1973		Specification No. 05-74-0628

5. ISSUED BY CODE 43-200
Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

6. ADMINISTERED BY (If other than block 5) CODE

7. CONTRACTOR NAME AND ADDRESS CODE

(Street, city, county, state, and ZIP Code)

8. [X] AMENDMENT OF SOLICITATION NO. N62470-74-B-0628
DATED 20 Sept 1973 (See block 9)

[ ] MODIFICATION OF CONTRACT/ORDER NO.
DATED (See block 11)

9. THIS BLOCK APPLIES ONLY TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in block 12. The hour and date specified for receipt of Offers [ ] is extended, [X] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation, or as amended, by one of the following methods:

By acknowledging each amendment on Standard Form 114-A Sales of Government Property, Bid & Award

FAILURE OF YOUR ACKOWLEDGMENT TO BE RECEIVED AT THE ISSUING OFFICE PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If, by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

10	Appropriation and Subhead	Obj. Cl.	Bureau Cont. No.	Sub-Allot.	Authorization Acct'g Act'y	Trans. Type	Property Acct'g Act'y	Country	Cost Code

11. THIS BLOCK APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS

(a) [ ] This Change Order is issued pursuant to

The Changes set forth in block 12 are made to the above numbered contract/order.

(b) [ ] The above numbered contract/order is modified to reflect the administrative changes (such as changes in paying office, appropriation data, etc.)

(c) [ ] This Supplemental Agreement is entered into pursuant to authority of

It modifies the above numbered contract as set forth in block 12.

12. DESCRIPTION OF AMENDMENT/

TIMBER HARVESTING, FY-74

at the

Marine Corps Base, Camp Lejeune, North Carolina

DIVISION 1. GENERAL REQUIREMENTS

SECTION 1A. GENERAL PARAGRAPHS

1A.5 Time for completion. At the end of the paragraph, delete: "31 December 1973." and insert: "30 June 1975.".

At the end of the section, add the following new paragraph:

"1A.14 Emergency Medical Care. Only emergency medical care is available by Government facilities at Marine Corps Base, Camp Lejeune, to Contractor

(continued on page 2)

Except as provided herein, all terms and conditions of the document referenced in block 8, as heretofore changed, remain unchanged and in full force and effect.

13. [X] OFFEROR IS NOT REQUIRED TO SIGN THIS DOCUMENT [ ] CONTRACTOR/OFFEROR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN ____ COPIES

14. NAME OF CONTRACTOR/OFFEROR
BY
(Signature of person authorized

15. NAME AND TITLE OF SIGNER | 16. DATE SIGNED

17. UNITED STATES OF AMERICA
BY /s/ R. E. DAGGETT
(Signature of Contracting Officer)

18. NAME OF CONTRACTING OFFICER (Type or print)
R. E. DAGGETT, CAPT, CEC, USN
Officer in Charge of Construction

19. DATE SIGNED

employees who suffer on-the-job injury or disease. Emergency care will be rendered at the prevailing rates established in BUMEDINST 6320.4 series. Reimbursement will be made by the Contractor to the Naval Regional Medical Center Collection Agency upon receipt of a monthly statement."

SECTION 1B. BIDS

1B.4 Award of Contract,.....In the second line, delete: "any or".

NOTICE

Each bidder shall refer in his bid to all amendments; failure to do so may constitute an informality in the bid.

Camp Lejeune, North Carolina

NOTICE:
Bids to be opened at 2:00 p.m.,
OCT 25 1973 at the Office of
Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

N62470-74-B-0628

NAVFAC
SPECIFICATION
NO. 05-74-0628

TIMBER HARVESTING, FY-74

at the

Marine Corps Base, Camp Lejeune, North Carolina

CONTRACT N62470-74-B-0628

All questions concerning the plans and specifications occurring prior to bid opening shall be presented to the Director of Design Division, Public Works Department, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone, Jacksonville, North Carolina, 451-2213, area code 919. Questions requiring interpretation of drawings and specifications must be submitted at least 7 days before bid opening. Interpretations or modifications to specifications made as a result of questions will be made by addendum only, and unless so done, all bidders should base their bids on the plans and specifications as issued.

All questions pertaining to bidding and for prior appointment to inspect the site of the work before bid opening shall be presented to the Officer in Charge of Construction, Jacksonville, North Carolina Area, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone, Jacksonville, North Carolina, 451-2581, area code 919.

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DIVISION 1. GENERAL REQUIREMENTS

SECTION 1A. General Paragraphs
1B. Bids

SECTION 1A. GENERAL PARAGRAPHS

1A.1 General description. The work shall include furnishing all materials, labor and equipment necessary to harvest timber and pulpwood, and other incidental related work. All cuttings are to become the property of the Contractor and are to be removed from the limits of the Station.

1A.2 Location. The work shall be located at the Marine Corps Base, Camp Lejeune, North Carolina, approximately as shown. The exact location will be indicated by the Officer in Charge of Construction (OICC).

1A.3 Form of contract. The contract will be executed on Standard Form 114-A of March 1960 and will include Standard Form 114-B, "Item Bid Page" and Standard Form 114-C, "General Sale Terms and Conditions". Additional General Provisions are attached and become a part of Form 114-C. The amended portion of Clause 22 is deleted and the following paragraph substituted therefor:

"WORK HOURS ACT OF 1962 -- OVERTIME COMPENSATION

"(a) No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such work week, whichever is the greater number of overtime hours.

"(b) In the event of any violation of the provisions of paragraph (a), the contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph (a), in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a work week without payment of the required overtime wages.

"(c) The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor, the full amount of wages required by this contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for liquidated damages as provided in paragraph (b)."

Clause 23 of Additional General Provisions, NONDISCRIMINATION IN EMPLOYMENT

(a) Clause 23 is amended by deleting references to the President's Committee on Equal Employment Opportunity, Executive Order 10925 of March 6, 1961, and Section 303 of Executive Order No. 10925 of March 6, 1961, and substituting therefor the Secretary of Labor, Executive Order No. 11246

of September 24, 1965 and Section 204 of Executive Order 11246 of September 24, 1965, respectively.

(b) Clause 23 is amended to insert after the reference to "Executive Order 10925" the following: "or the clause contained in Section 201 of Executive Order No. 11114."

(c) In accordance with regulations of the Secretary of Labor, the rules, regulations, orders, instructions, designations, and other directives issued by the President's Committee on Equal Employment Opportunity and those issued by the heads of various departments or agencies under or pursuant to any of the Executive Orders superseded by Executive Order 11246, shall, to the extent that they are not inconsistent with Executive Order 11246, remain in full force and effect unless and until revoked or superseded by appropriate authority. References in such directives to provisions of the superseded orders shall be deemed to be references to the comparable provisions of Executive Order 11246.

Add the following clause to "Additional General Provisions":

"29. MANDATORY INSURANCE COVERAGE

"(a) Within 15 days after the award of this contract, the successful bidder shall furnish to the OICC a certificate of insurance as evidence of the existence of the following insurance coverage in amounts not less than the amounts specified below:

Type of Insurance	Coverage		
	Per Person	Per Accident	Property
1. Comprehensive General Liability	$ 50,000	$100,000	$ 5,000
2. Automobile Liability	$ 50,000	$100,000	$ 5,000
3. Workmen's Compensation	As Required by State Law		
4. (Other as Required by State Law)			

The Comprehensive General and Automobile Liability policies shall contain a provision worded as follows:

> 'The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy.'

The certificate of all policies shall provide for notice of cancellation to the OICC and the certificates shall indicate that the above provision has been included.

"(b) The Prime Contractor shall also furnish a certificate of insurance as evidence of the existence of such coverage for all subcontractors who will work on the job. This certificate shall be furnished not less than five days before such subcontractor forces enter the Government premises."

PAYMENT

Clause 4 of Standard Form 114-C and Clause 17 of "Additional General Provisions" are modified as follows:

A payment unit shall be defined as one compartment. Full payment of the total amount of the purchasing price of the individual compartments must be made prior to removal of any property contained within the compartment. The Contractor may pay for more than one compartment at a time or the entire amount of the contract if he desires. The amount of payment for each compartment shall be determined as follows:

(a) Divide the total price bid for pine saw timber by the total number of pine saw timber trees marked for removal and multiply the resulting sum by the total number of marked pine saw timber trees in each payment unit area.

(b) Divide the total price bid for pine pulpwood by the total number of pine pulpwood trees marked for removal and multiply the resulting sum by the total number of pine pulpwood trees marked in each payment unit area.

(c) Add these sums together to obtain the total payment price for each payment unit area.

1A.4 Performance bond. The successful bidder, before the award of the contract, shall post a performance bond on Standard Form 25 in the sum of 25 percent of the entire contract price to cover the purchaser's obligations and undertakements in the harvesting and removal of timber under this contract. Such bond will remain in full force and effect during the term of this contract and any renewals as may be agreed upon.

1A.5 Time for completion. The entire work shall be completed prior to 31 December 1973.

1A.6 Drawing accompanying specification. The following drawing and sketches accompany this specification and are a part thereof. The drawing and sketches are the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

NAVFAC DWG NO.	TITLE
4001693	Location Plan of Compartments.

PLATE NO.	TITLE
1	Forest type-stand size class compartment map, Compartment No. 1.
2	Forest type-stand size class compartment map, Compartment No. 4.

PLATE NO.	TITLE
3	Forest type-stand size class compartment map, Compartment No. 18.

1A.7 Safety program. The Contractor shall implement a safety program conforming to the requirements of Federal, State, and Local laws, rules and regulations. The program shall include, but is not limited to, the following:

a. "Occupational Safety and Health Standards", which can be ordered from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

b. Department of the Army, Corps of Engineers, "General Safety Requirements", which may be examined or obtained on application to the office where bids are being received.

1A.8 Methods and schedules of procedures. The work shall be executed in a manner and at such times that will cause the least practicable disturbance to the normal activities of the Station. Before starting any work, the sequence of operations and the methods of conducting the work shall have been approved by the Officer in Charge of Construction (OICC).

1A.9 Protection and repairs. The Contractor shall comply with the fire prevention requirements, security rules, and regulations of the activity; and shall provide approved means necessary for the protection of all Government and private property, including contents of buildings affected directly or indirectly by his operation. All damage to Government or private property resulting directly or indirectly from the Contractor's actions shall be repaired or replaced without cost to the Government.

1A.10 Accident reports. The Contractor and his subcontractors shall maintain an accurate record of, and shall report to the Officer in Charge of Construction (OICC), exposure data and all accidents resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, and equipment incidental to work performed under the contract. The report shall be submitted on Standard Form 92 and shall be in accordance with "Instructions to Contractor for Preparation of Supervisors Report of Accident"; the "Instructions" and the required forms will be furnished by the OICC.

1A.11 Stabilization of prices, rents, wages, and salaries (1973 Feb). (This applies only on contracts with Contractors whose annual sales or revenues are $50 million or more.)

By Executive Order 11695, dated January 11, 1973, the President further implemented his Economic Stabilization Program. The Contractor represents that to the best of his knowledge and beief he is in complete compliance with Executive Order 11695 if applicable. Further, the Contractor warrants that insofar as Executive Order 11695 is applicable, the amounts invoiced under this contract will not exceed the lower of (1) the contract price, or (2) the maximum levels established in accordance with the order.

1A.12 Notice of Program for further providing for the Stabilization of the Economy.

Offerors are advised that prices are expected to be in compliance with the General Price Standard of the Cost of Living Council as set forth in Section 130.13 of Title 6, Code of Federal Regulations.

1A.13 Environmental Litigation

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, and such order is based solely on acts or omissions of the U. S. Government, such suspension, lay, or interruption shall be considered as if order by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "environmental litigation," as used herein, means a lawsuit alleging that the U. S. Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

End of Section 1A

2A.8 Slash disposal. Trees shall be felled so that unlopped tops shall lie reasonably flat on the ground and clear of residual trees 4 inches dbh and larger. No limbs, tops, cull logs or logging debris shall be left in stream channels, ditches, or within the clearing limits of roads, wildlife food plots, trails and fire breaks. Within 50 feet of the edge of any main road or open area, tops shall be lopped so that all limbs and residual material will be reasonably flat on the ground. Lopping shall be done as the harvesting progresses. In the event of unnecessary damage, "penalty payments" specified will be invoked.

A.9 Logging operations. The order of harvesting in the designated areas shall be subject to approval by the OICC. All phases of the operations shall proceed in an orderly manner. In areas where timber to remain is thick, skid trails to logging decks shall be used so that damage may be kept to a minimum. These skid trails will be located by the OICC if necessary. Skidding equipment shall not run circular patterns in cutting areas, unless in clear cuttings or seed tree areas, when picking up felled trees. The Contractor shall be required to leave and enter main roads at designated places in order to protect seeded road shoulders and to use secondary existing roads and turnoffs where available. Where such existing roads and turnoffs are not available, a temporary "bridge" of planks will be laid over the road shoulder so as to minimize damages from hauling. When no longer needed, such temporary "bridges" shall be removed by the Contractor. All such protective measures shall be performed by the Contractor without cost to the Government. Damage to road shoulders or other seeded areas shall be repaired by the Contractor so as to restore such areas to the condition which existed before use.

2A.10 Damage to existing timber. The Contractor shall not unnecessarily damage young growth or trees left standing. Conventional logging equipment shall be used in a manner which minimizes the damage to young growth or other uncut timber. In the event unnecessary damage is caused penalty payments for damages will be invoked. Contractor is liable for time involved in scaling.

2A.11 Salvage cutting of merchantable timber. Merchantable trees which are dead, diseased, or overlooked during the original marking operations or damaged by ice, lightning, wind, or fire, or in the event there is a need to salvage merchantable trees outside the designated sale areas due to military necessity or convenience of the Government, the trees will be marked and tallied by the Government and removed by the Contractor. For such cutting, the Contractor shall pay for the volumes involved at the bid price, except that in small isolated locations, price shall be subject to adjustment by negotiation.

2A.12 Temporary facilities. The construction of temporary structures, roads or other improvements and facilities necessary for the logging of the timber will be permitted provided that plans, locations and arrangements for removal of such facilities are approved in advance by the OICC.

2A.13 Sanitation. Operations under the contract shall be conducted in compliance with all applicable current state and local laws, rules and regulations concerning sanitation. All temporary structures and improvements, and the grounds adjacent thereto, shall be maintained in a clean, sanitary condition and all rubbish shall be disposed of in an approved manner. All buildings, toilets, garbage pits and other structures shall be located so as to prevent the pollution of water in the streams and lakes and shall be constructed and maintained to prevent the breeding of flies or the development of other unsanitary conditions. Waste and equipment parts around logging decks and sale area shall not accumulate.

2A.14 Protection of ditches, streams and stream side areas. All operations under the contract, including the construction of roads and other facilities shall be conducted in a manner to minimize damage to ditches, stream courses and stream sides. Logs shall not be hauled, skidded, or yarded in or across any ditch or stream course without prior approval. All ditches and stream courses shall be clear of logs, chunks, and debris resulting from the logging operations by the Contractor.

2A.15. Prevention and control of soil erosion and soil damage. The Contractor shall take all practicable precautions to prevent or minimize soil erosion and damage to the soil, including but not limited to:

(a) Prevention of gullying of roads, skid trails, and log landings.

(b) Protection of cover, soil and water conditions in natural or artificial openings.

(c) Refraining from operation of logging equipment when ground conditions are such that excessive soil damage will result. To avoid such damage, the OICC may suspend logging operations in whole or in part for such periods as are necessary.

Damage attributable to the Contractor's operations under the contract, which is determined by the OICC as excessive or was avoidable, shall be repaired by the Contractor as soon as practicable to prevent accelerated erosions or soil damage. After logging operations have been completed in each of the designated areas, the Contractor shall repair in a satisfactory manner all damage resulting from his operation which will cause accelerated soil erosion or reduce the productive capacity of the soil.

2A.16 Repair or replacement of damaged work. Existing roads, bridges, culverts, fences, utility lines, buildings or other existing facilities damaged beyond normal wear and tear by operations of the Contractor shall be repaired or replaced as directed without cost to the Government. Repaired or replaced work shall be in a condition as good as existed prior to the start of the work. Existing roads used by the Contractor shall at

COMPARTMENT NO. 18

			PINE				HARDWOOD			
			SAW TIMBER		PULPWOOD		SAW TIMBER		PULPWOOD	
Stand	Type of Cut	Acres	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)
1	Int. Cut	28	24	2,688	44	3	43	3,600	126	14
2	Int. Cut	25	---	---	727	76	---	---	---	---
3	Clear Cut	75	1,117	126,560	1,751	104	---	---	214	11
4	Int. Cut	24	430	63,302	679	39	---	---	---	---
7	Int. Cut	9	---	---	776	80	---	---	---	---
8	Int. Cut	33	354	55,727	1,951	176	---	---	---	---
9	Clear Cut	55	1,088	172,718	932	101	16	411	252	15
10	Clear Cut	31	276	43,670	671	54	---	---	---	---
11	Removal Cut	110	1,246	208,791	---	---	---	---	---	---
12	Int. Cut	64	336	53,943	1,487	110	---	---	317	21
13	Removal Cut	19	680	93,535	---	---	---	---	---	---
16	Int. Cut	36	536	70,091	1,525	113	---	---	---	---
	Total	509	6,087	891,025	10,543	856	59	4,011	909	61
GRAND TOTAL:		1,735	21,701	3,573,428	40,158	3,378	1,715	178,697	10,530	833

Topwood 21,701 x .0275 = 597

3,975 Cords

05-74-0628-2A-3

2A.5 Merchantability and quality. Merchantable trees and merchantable products cut from trees shall equal or exceed the following specifications:

Species and Type	Tree Specifications		Product Specifications		
	Units per tree Number	Length Feet	Diameter Inside Bark At Small End Inches	Net Scale In % of Gross Scale %	Minimum Net Scale Board Ft.
Loblolly, long-leaf pine sawlogs	1-1/2	8	7	33-1/3	10
Hardwood sawlogs	1-1/2	8	11	50	25
Pine pulpwood bolts	2-1/2	4	4	None	None
Hardwood pulp	2-1/2	4	5	None	None

Provided that sound knots, firm red heart, blue stain, and worm holes shall not be regarded as defects, and provided further that all trees shall be utilized to as small a top diameter as practicable. Log lengths shall be varied so as to secure the greatest practicable utilization of all merchantable material. Pulpwood bolts shall be reasonably straight and sound.

2A.6 Schedule of work.

(a) Cutting and logging operations in the various payment unit areas shall be accomplished in the order selected by the Contractor, subject to the approval of the OICC.

(b) Attention is called to the fact that due to military requirements, the Contractor may be required to move his operation from one area to another without prior notice in order to prevent conflict with military training. The Contractor will receive a minimum of 48 hours' notice if such a move is required.

2A.7 Cutting. All "Marked trees" shall be harvested. The height of stumps remaining after cutting shall not exceed 8 inches for saw timber and 4 inches for pulpwood. The merchantable portion of all cut trees shall be removed from the Government reservation. Trees shall be felled directionally so as to cause the least practicable damage to unmarked trees or trees to remain. Trees shall be felled away from roads, ditches, streams, river, food plots, trails and other improvements. In all field stands where the timber is thick and damage to remaining trees by heavy equipment will be excessive, chain saws shall be used. Trees shall be topped in all cutting areas before skidding.

COMPARTMENT NO. 1

			PINE				HARDWOOD			
			SAW TIMBER		PULPWOOD		SAW TIMBER		PULPWOOD	
Stand	Type of Cut	Acres	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)
2	Int. Cut	157	744	114,045	4,666	374	120	15,662	1,159	92
5	Removal Cut	118	2,062	344,183	3,407	284	---	---	---	---
6	Int. Cut	174	745	110,424	2,656	211	---	---	---	---
7	Int. Cut	55	387	54,066	1,760	132	---	---	---	---
8	Int. Cut	71	950	159,766	3,026	221	34	3,450	374	30
9	Int. Cut	36	96	115,560	136	9	65	6,540	248	19
10	Clear Cut	35	206	38,205	249	21	66	4,740	307	23
12	Seed Tree	54	1,072	166,429	1,593	114	233	21,818	1,839	139
13	Seed Tree	11	464	112,344	147	18	---	---	247	30
14	Int. Cut	17	114	12,736	853	86	---	---	100	8
	Total	728	6,840	1,127,758	18,493	1,470	518	52,210	4,274	341

COMPARTMENT NO. 4

5A	Seed Tree	68	2,366	395,966	1,769	154	98	6,740	1,330	90
5B	Int. Cut	75	667	94,200	858	87	44	11,060	691	45
5C	Seed Tree	75	2,669	473,253	2,763	208	110	10,098	522	36
5D	Int. Cut	26	523	90,606	219	27	21	764	439	36
5E	Int. Cut	16	227	32,192	738	47	---	---	---	---
5F	Int. Cut	14	172	31,456	181	19	---	---	---	---
6	Int. Cut	55	207	45,135	196	18	474	63,780	1,260	126
7	Int. Cut	80	455	77,094	2,528	337	---	---	---	---
8	Seed Tree	41	1,296	288,214	341	41	295	30,144	1,102	98
9	Removal	22	54	8,420	16	1	96	9,890	---	---
10	Int. Cut	26	138	18,079	1,513	113	---	---	---	---
	Total	498	8,774	1,554,645	11,122	1,052	1,138	122,476	5,347	431

DIVISION 2. TIMBER HARVESTING

SECTION 2A. DETAIL REQUIREMENTS

2A.1 General requirements. The work includes the cutting and harvesting of all marked trees in Compartments Nos. 1, 4 and 18. Timber products shall be removed from the Base through gates designated by the Officer in Charge of Construction (OICC). All of ingress and egress shall be as designated by the OICC.

2A.2 Marked trees. The trees to be cut are marked with yellow paint at ground level and approximate eye level. Saw timber trees are marked with two spots of paint at eye level and two spots of paint at ground level. Pulpwood trees are marked with one spot at eye level and one spot at ground level, except in stands to be clear cut or seed tree cut, the trees to be cut will only be marked at eye level. In seed tree cuts, trees to be left for seed will be marked with a band of paint, of other than yellow color, at eye level and a spot of paint at the ground line. Seed trees cut shall be paid for as directed under the paragraph entitled "Penalty payments". Trees bearing old markings, but not freshly marked, shall not be cut. Any dispute as to whether a mark or marks are fresh shall be subject to the decision of the OICC. All trees cut, which bear an old marking only, shall be paid for as specified under "Penalty payments" unless prior written approval is given for their removal.

2A.3 Quantities. The volumes specified herein are estimates only and are not guaranteed. The Government guarantees that there are the specified number of saw timber trees and pulpwood trees marked for cutting within the sale area boundaries. Bidders are required to satisfy themselves as to the amount of timber products available under each of the items described.

2A.4 Marked timber. The number of trees and estimated volumes to be harvested by areas, compartments and stands are as follows:

SECTION 1B. BIDS

1B.1 Instructions to bidders. Standard Form 114-A of March 1960, Bid and Award, and Standard Form 114-B, Bid Item Page, shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of bid envelopes. Envelopes containing bids must be sealed.

1B.2 Bid guaranty will be required in the amount of 20 percent of the total amount of the bid. A bid bond on Standard Form 24 may be furnished in lieu of bid deposit.

1B.3 Items of Bids. Bids shall be submitted, in triplicate, on Standard Form 114-B, upon the following items:

Item 1. Total amount to be paid to the Government for the harvesting of pine saw timber, complete in accordance with the drawing and specification.

Item 2. Total amount to be paid to the Government for the harvesting of pine pulpwood, complete in accordance with the drawing and specification.

Item 3. Total amount to be paid to the Government for the harvesting of hardwood saw timber, complete in accordance with the drawing and specification.

Item 4. Total amount to be paid to the Government for the harvesting of hardwood pulpwood, complete in accordance with the drawing and specification.

1B.4 Award of contract, if made, will be based upon the highest bid computed to be the total of any or all Bid Items. Split awards will not be made.

1B.5 Telegraphic modification of bids may be made. Two signed copies of the telegram in a sealed envelope marked, "Copies of telegraphic modification of bid for Timber Harvesting, FY-74, Specification No. 05-74-0628, should be forwarded immediately to the office to which the written bids were submitted.

1B.6 Reference to amendment. Each bidder shall refer in his bid to all amendments to this specification; failure to do so may constitute an informality in the bid.

R. E. DAGGETT, CAPT, CEC, USN
Officer in Charge of Construction
27 July 1973

End of Section 1B

all times be maintained usable and shall be kept passable and clear for official station traffic.

2A.17 Timber marking equipment. The Contractor, his subcontractor, agents, servants and employees are prohibited from bringing onto the Station or having in their possession while on the Station, paint or equipment for painting.

2A.18 Authorized representative of the Contractor. The Contractor shall at all times during his operations under the contract have present at the job site an individual authorized to receive and take action on instructions given him by the OICC or his authorized representative.

2A.19 Safety. The Contractor, his employees, subcontractors and their employees shall conduct their activities in a safe and workmanlike manner at all times, and shall cooperate in making it possible for the OICC or his representative to safely and economically scale, inspect the cutting, logging, construction or other activities of the Contractor, and to conduct their other official duties in the sale areas and vicinity.

2A.20 Penalty payments.

(a) Trees selected for seed trees which are excessively damaged or cut by the Contractor shall be paid for at the rate of five dollars per diameter inch measured at stump height of twelve inches above the ground, whichever is larger.

(b) Merchantable material designated for cutting not removed from the Reservation during cutting operations shall be paid for at double the bid price, when so directed by the OICC.

(c) Any repair work accomplished by the Government necessitated by the failure of the Contractor to repair his own damage, shall be paid for by the Contractor at the actual cost to the Government plus 30 percent acceleration for overhead plus 30 percent surcharge.

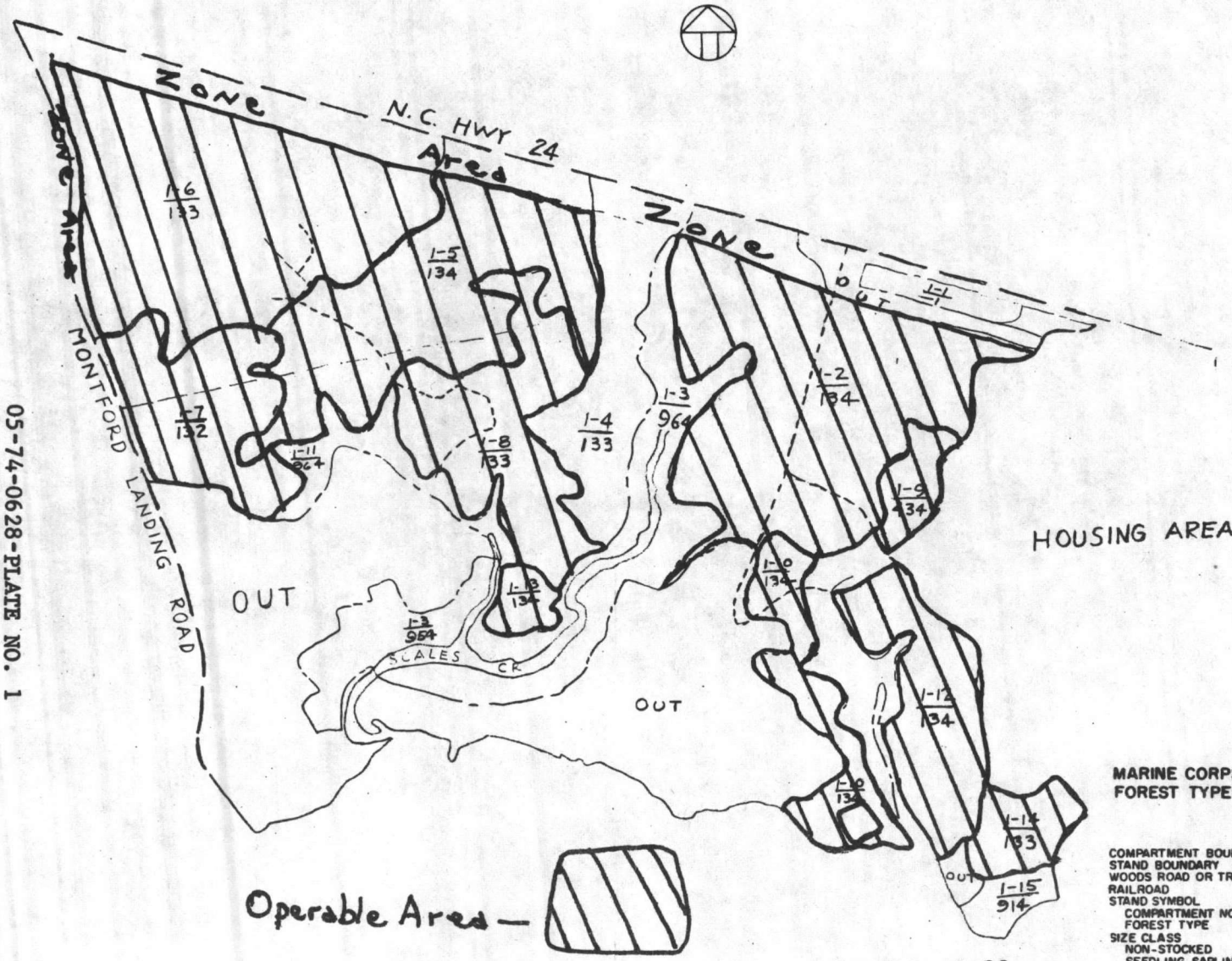
(d) All unmarked trees cut or excessively damaged by careless operations of the Contractor shall be paid for at the rate of $0.25 per diameter inch for trees up to 12 inches in diameter outside bark (dob) across the stump, if cut, or at 4-1/2 feet (dbh) outside bark above the ground, if uncut; $1.00 per diameter inch for trees between 12.1 inches and 18 inches; and $2.00 per diameter inch for all trees 18.1 inches in diameter and larger. All penalties will be determined by the OICC or his representative. When directed by the OICC, the damaged trees shall be harvested. The exception to the foregoing penalty will be when of necessity and with prior approval of the OICC, additional trees are cut for necessary access to roads or trails to facilitate logging operations. In these cases, the additional volume in trees of more than 5 inches dbh

will be paid for at the bid prices. Stumpage damaged by fire caused by the negligence or fault of the Contractor shall be cut. The Government will mark and tally such stumpage and the Contractor shall buck it into timber products and remove it from the Station as directed. Payment for such fire damaged and removed products shall be made by the Contractor at double the bid price.

(e) The penalty for possession or use of paint or equipment for painting shall be the immediate termination of this contract, at the option of the OICC.

End of Section 2A

End of Specification



PHOTOS: 15-20
34-39

MARINE CORPS BASE **CAMP LEJEUNE, N.C.**
FOREST TYPE-STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS

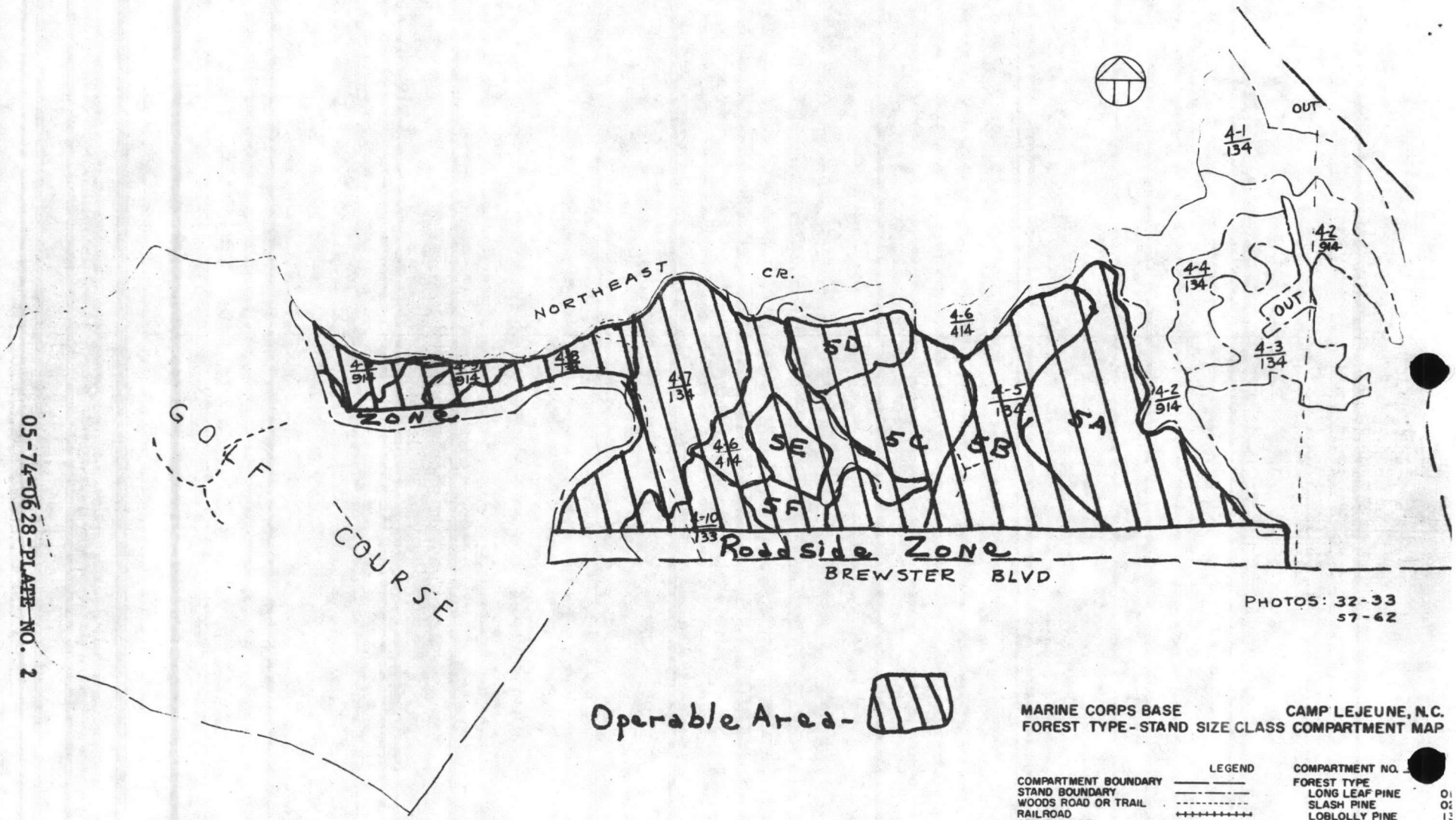
SIZE CLASS
NON-STOCKED 1
SEEDLING-SAPLING 2
POLE TIMBER 3
SAW TIMBER 4

1000 0 1000 2000
GRAPHIC SCALE

COMPARTMENT NO.

FOREST TYPE
LONG LEAF PINE 01
SLASH PINE 02
LOBLOLLY PINE 13
POND PINE 18
LOBLOLLY-HARDWOOD 4
POND PINE-HARDWOOD 4
SCRUB OAK 5
SWEET GUM-WATER OAK 9
ELM-ASH 91
WHITE OAK-RED OAK 93
CYPRESS-TUPELO 9
BLACK GUM-RED MAPLE 9
NON FORESTED -

05-74-0628-PLATE NO. 1



MARINE CORPS BASE — CAMP LEJEUNE, N.C.

FOREST TYPE-STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS

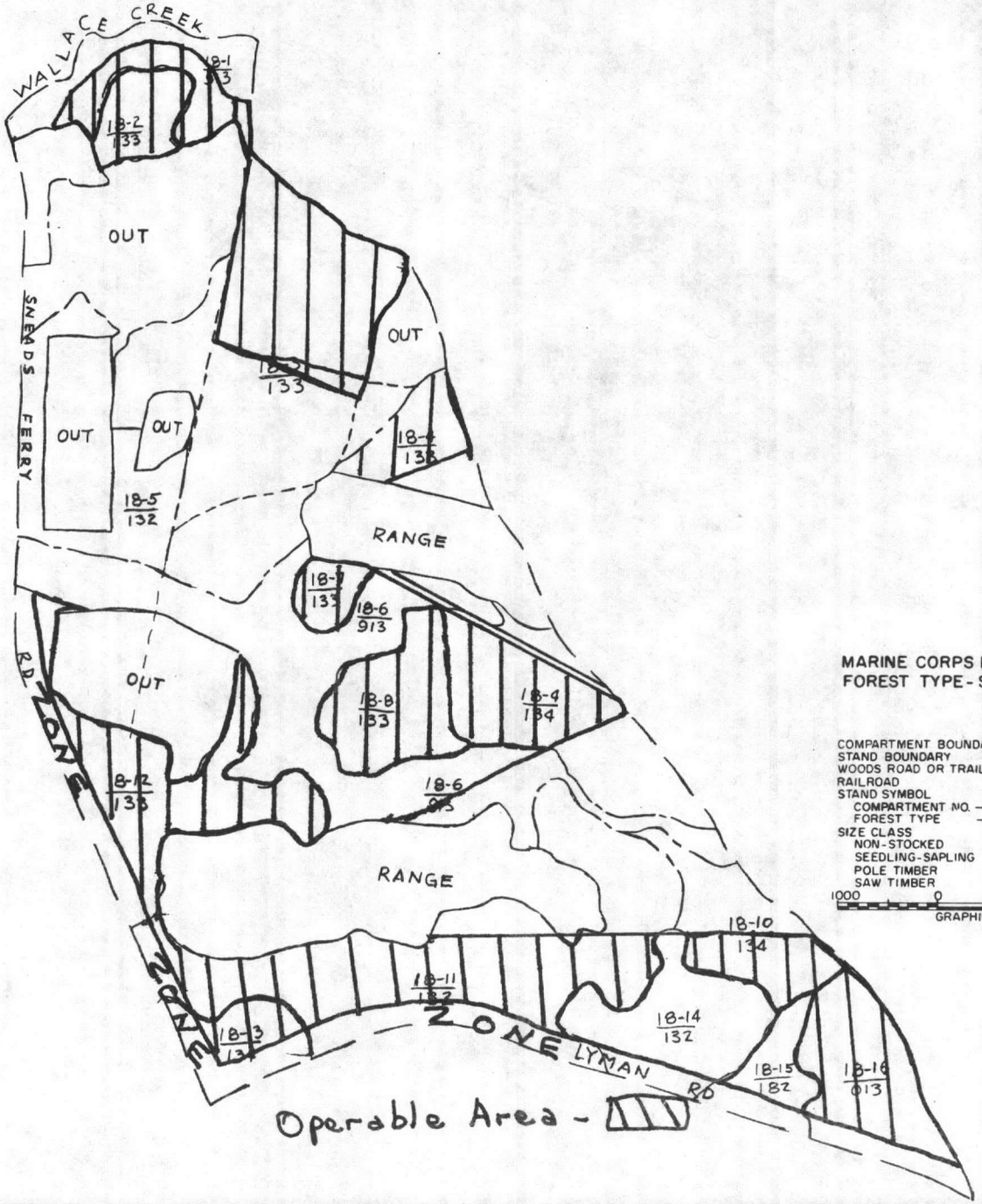
SIZE CLASS
- NON-STOCKED 1
- SEEDLING-SAPLING 2
- POLE TIMBER 3
- SAW TIMBER 4

1000 0 1000 2000
GRAPHIC SCALE

COMPARTMENT NO.

FOREST TYPE
- LONG LEAF PINE 01
- SLASH PINE 02
- LOBLOLLY PINE 13
- POND PINE 18
- LOBLOLLY-HARDWOOD 43
- POND PINE-HARDWOOD 4
- SCRUB OAK 5
- SWEET GUM-WATER OAK 9
- ELM-ASH 9
- WHITE OAK-RED OAK 9
- CYPRESS-TUPELO 9
- BLACK GUM-RED MAPLE 9
- NON FORESTED -

05-74-0628-PLATE NO. 2



MARINE CORPS BASE CAMP LEJEUNE, N.C.
FOREST TYPE - STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS
SIZE CLASS
NON-STOCKED 1
SEEDLING-SAPLING 2
POLE TIMBER 3
SAW TIMBER 4

1000 0 1000 2000'
GRAPHIC SCALE

COMPARTMENT NO. 18
FOREST TYPE
LONG LEAF PINE
SLASH PINE
LOBLOLLY PINE
POND PINE
LOBLOLLY-HARDWOOD
POND PINE-HARDWOOD
SCRUB OAK
SWEET GUM-WATER OAK
ELM-ASH
WHITE OAK-RED OAK
CYPRESS-TUPELO
BLACK GUM-RED MAPLE
NON FORESTED

PHOTOS: 152
182-186
214-218

05-74-0628-PLATE NO. 3

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 13 Dec 73 Burning Class 2

Time of first report 0631 Spread Index 9

Time first unit on scene 0645 Wind speed & direction 3 - S

Fire apparently started day before (12 Dec 73)

Time fire secured 0801

Equipment and/or men required to control fire 1 hoondocker, 1 fire pickup, 6 men

Total acreage burned (estimated) 30 Ac.

Location C-57 (South corner of Base Rndy on Dixon Hwy.)

Time last unit returned to quarters

Probable cause of fire Troops in area

Follow-up procedures required (timber salvage, planting, none)

none (1.13" of rain recorded on morning of 13 Dec 73)

Total of damages none.

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 6 Dec 73 Burning Class 3

Time of first report 2327 Spread Index 12

Time first unit on scene 2342 Wind speed & direction NW - 4

Reported by area guard

Time fire secured 0143

Equipment and/or men required to control fire 6 fire dept. truck, 1 fire plow unit, 10 men.

Total acreage burned (estimated) 3 Ac.

Location C-32 Behind Ammo dump office

Time last unit returned to quarters 0230.

Probable cause of fire Unknown - troops training in area Possibly pop-up flare. 2d Bn/2d Mar in area.

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 5 Dec 73 Burning Class 2

Time of first report 0020 Spread Index 7

Time first unit on scene 0032 Wind speed & direction S - 9 wind gusty

0216 fireplow unit arrived on scene.

Time fire secured 0429

Equipment and/or men required to control fire 1 boondocker, 1 pumper pickup, 1 fireplow unit, 5 men.

Total acreage burned (estimated) 27 AC.

Location North of Lucky's Mound C-19

Time last unit returned to quarters 0500.

Probable cause of fire Flares dropped in area

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

WJM

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 4 Dec 73 Burning Class 2

Time of first report 1629 Spread Index 7 RH-85%

Time first unit on scene 1645 Wind speed & direction S-9

Fire spotted by helicopter 1725 + reported. Boondocker dispatched at 1629 but could not locate

Time fire secured 1948

Equipment and/or men required to control fire 1 boondocker, 1 fireplow unit, 5 men

Total acreage burned (estimated) 8 Ac.

Location Sneeds Creek area. C-49

Time last unit returned to quarters 2045

Probable cause of fire unknown

Follow-up procedures required (timber salvage, planting, none)

None

Total of damages None

RALPH F. GURGANUS

Wm

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 4 Dec 73 Burning Class 1

Time of first report 0657 Spread Index 4

Time first unit on scene 0705 Wind speed & direction S - 0

Time fire secured 1000

Equipment and/or men required to control fire 5 fire trucks, 9 firemen, 1 plow unit, 3 men.

Total acreage burned (estimated) 1 ac.

Location C-10 Behind Brewster Jr. H.S.

Time last unit returned to quarters

Probable cause of fire Unknown - kids in area

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

WFM

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 2 Dec 73 Burning Class 2

Time of first report 0656 Spread Index 6

Time first unit on scene 0715 Wind speed & direction Southerly

Time fire secured 1237 3 Dec 73

Equipment and/or men required to control fire 1 bandocker, 1 fire truck, 4 men

Total acreage burned (estimated) 7 Ac.

Location C-1 Manford Pt Road

Time last unit returned to quarters 1315

Probable cause of fire Unknown - training area

Follow-up procedures required (timber salvage, planting, none) none noticed - timber marked in area

Total of damages none

RALPH F. GURGANUS

WFR

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 28 Nov 73 Burning Class 4

Time of first report 1316 Spread Index 28 R.H. 82%

Time first unit on scene 1322 Wind speed & direction SW-20

Time fire secured 1440

Equipment and/or men required to control fire 1 pumper, 1 hand-dacker, 1 pickup, 1 plow unit, 12 men

Total acreage burned (estimated) 4

Location C-57 (right of Rifle Range road near entrance.

Time last unit returned to quarters 1540

Probable cause of fire Unknown

Follow-up procedures required (timber salvage, planting, none) very light

Total of damages none yet

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 17 Nov 73 Burning Class 3

Time of first report 1148 Spread Index 14

Time first unit on scene 1205 Wind speed & direction NE-4

Time fire secured 1800

Equipment and/or men required to control fire 1 backpacker, 1 pickup, 1 plowunit, 8 men

Total acreage burned (estimated) 125

Location C-15 between Raggal Pt & Lewis Rd

Time last unit returned to quarters

Probable cause of fire troops (8th marines) in area this morning

Follow-up procedures required (timber salvage, planting, none) none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 15 Nov 73 Burning Class 4

Time of first report 1326 Spread Index 36

Time first unit on scene 1336 Wind speed & direction SW-14

Time fire secured 1955

Equipment and/or men required to control fire 1 bandocker, 1 pickup pumper, 1 fire plow unit, 1 launch, 8 men

Total acreage burned (estimated) 75

Location N.E. fringe area of G-10 Range

Time last unit returned to quarters 1630

Probable cause of fire mortar fire on range

Follow-up procedures required (timber salvage, planting, none) none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 15 Nov 73 Burning Class 4

Time of first report 1402 Spread Index 36

Time first unit on scene 1402 Wind speed & direction SW-14

Time fire secured 1437

Equipment and/or men required to control fire 2 pumpers, 15 men

Total acreage burned (estimated) 1½ Ac

Location 1-Z-1 Manford Pt

Time last unit returned to quarters 1450

Probable cause of fire Smoke grenade

Follow-up procedures required (timber salvage, planting, none) none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 1 Nov 73 Burning Class 4

Time of first report (1) 1124; (2) 1239 Spread Index 21

Time first unit on scene 1155 Wind speed & direction 14 - NW

Time fire secured 1445

Equipment and/or men required to control fire (1) 1 fire plow unit + 2 men (2) 1 fire plow unit and 1 man

Total acreage burned (estimated) (1) 4ac (2) 2ac.

Location C-32

Time last unit returned to quarters 1600

Probable cause of fire Planes bombing in G-10 Range

Follow-up procedures required (timber salvage, planting, none)

None

Total of damages none at this time

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 18 Oct 73 Burning Class 2

Time of first report 1045 Spread Index 5

Time first unit on scene 1100 Wind speed & direction 4 - SE

Time fire secured 1237

Equipment and/or men required to control fire 1 fire-plow unit + 2 men

Total acreage burned (estimated) 20

Location East of G-10 in C-37

Time last unit returned to quarters 1330

Probable cause of fire Military firing on G-10 Range

Follow-up procedures required (timber salvage, planting, none) Very light to none

Total of damages none expected

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/
12 Oct, 1973

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 10-11-73 Burning Class 2

Time of first report 1338 Spread Index 7

Time first unit on scene 1402 Wind speed & direction NE-9

Time fire secured 1802

Equipment and/or men required to control fire 2 plows, 1 fire truck pumper, 6 men - a company of marines gave assistance

Total acreage burned (estimated) 37

Location Compartment 54 - NE Corner

Time last unit returned to quarters 1830

Probable cause of fire Unknown - a training exercise was going on in the area - many troops passing

Follow-up procedures required (timber salvage, planting, none)

Probably none - damage light

Total of damages

C.F. Russell
~~RALPH F. GURCANUS~~

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/
9-7-73

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 9-6-73 Burning Class 1

Time of first report 1500 Spread Index 2

Time first unit on scene 1517 Wind speed & direction SW-10

Time fire secured 1917

Equipment and/or men required to control fire 1 fire plow - 3 Men

Total acreage burned (estimated) 85 A.

Location Grid Coordinates 9032 and 9033

Time last unit returned to quarters 1940

Probable cause of fire Aril ordinance over shot from G-10

Follow-up procedures required (timber salvage, planting, none)
Keep close watch for outbreak of pine beetles until cold weather

Total of damages No apparent tree mortality apparent. Will probably be a reduction in growth next year.

~~RALPH F. GURGANUS~~

C. Russell

4R

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 17 Aug 73 Burning Class 1

Time of first report 1243 Spread Index 1

Time first unit on scene 1255 Wind speed & direction 3 - NW

Time fire secured 1328

Equipment and/or men required to control fire 1 boondocker
2 men

Total acreage burned (estimated) 1/4 Ac.

Location C-18

Time last unit returned to quarters

Probable cause of fire Troops in Area

Follow-up procedures required (timber salvage, planting, none)
None - Fire on wiregrass ridge

Total of damages None

RALPH F. GURGANUS

CAR

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 25 July 73 Burning Class 1

Time of first report 1544 Spread Index 2

Time first unit on scene 1600 Wind speed & direction SE-6

Time fire secured 2025

Equipment and/or men required to control fire 1 plow unit, 1 pumper, 5 men

Total acreage burned (estimated) 7

Location G-4 Demolition area

Time last unit returned to quarters 2200

Probable cause of fire demolition work on site

Follow-up procedures required (timber salvage, planting, none)

none predicted

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 25 July 73 Burning Class 1

Time of first report 1247 Spread Index 2

Time first unit on scene 1300 Wind speed & direction SE-6

Time fire secured 1437

Equipment and/or men required to control fire 1 fire plow unit 3 men

Total acreage burned (estimated) 3

Location F-3

Time last unit returned to quarters 1530

Probable cause of fire Range firing of tracers

Follow-up procedures required (timber salvage, planting, none) none predicted

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 11 June 73 Burning Class 3

Time of first report 1149 Spread Index 13

Time first unit on scene 1205 Wind speed & direction 7-S

Time fire secured 1452

Equipment and/or men required to control fire 1 boondocker, 1 plow unit, 7 men

Total acreage burned (estimated) 15 Ac

Location F-3 Range

Time last unit returned to quarters 1530

Probable cause of fire Range firing tracers

Follow-up procedures required (timber salvage, planting, none) None

Total of damages None

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 9 June 73 Burning Class 3

Time of first report 1552 Spread Index 11

Time first unit on scene 1600 Wind speed & direction 13-SW

Time fire secured 1808

Equipment and/or men required to control fire Engine 4, Engine 2, 1 fireplow, 9 men

Total acreage burned (estimated) 3 Ac.

Location Nature Study Area

Time last unit returned to quarters 1830

Probable cause of fire started from 8 June 73 fire

Follow-up procedures required (timber salvage, planting, none) None

Total of damages None

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 8 June 73 Burning Class 3

Time of first report 1109 Spread Index 13

Time first unit on scene 1135 Wind speed & direction 7-SE

Time fire secured 1539

Equipment and/or men required to control fire 1 boondocker, 1 Fireplow, 3 men

Total acreage burned (estimated) 4 Ac.

Location G-7 Range

Time last unit returned to quarters 1645

Probable cause of fire Range fire tracers

Follow-up procedures required (timber salvage, planting, none) none

Total of damages None

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 8 June 73 Burning Class 2

Time of first report 0813 Spread Index 9

Time first unit on scene 0820 Wind speed & direction 3 - SE

Time fire secured 0916

Equipment and/or men required to control fire 1 boondocker + 1 pumper, 3 men

Total acreage burned (estimated) 3/4 Ac.

Location Nature Study Area

Time last unit returned to quarters 0930

Probable cause of fire UNKNOWN

Follow-up procedures required (timber salvage, planting, none) NONE

Total of damages NONE

RALPH F. GURGANUS

40

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 7 JUNE 73 Burning Class 3

Time of first report 1410 Spread Index 12

Time first unit on scene 1500 Wind speed & direction 9-S

Time fire secured 2000

Equipment and/or men required to control fire 1 boondocker, 1 Fireplow, 2 EOD men, 1 Corpsman, 3 other men

Total acreage burned (estimated) 10 Ac.

Location G-4 EOD Area

Time last unit returned to quarters 2030

Probable cause of fire EOD personnel igniting duds

Follow-up procedures required (timber salvage, planting, none) NONE

Total of damages NONE

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 5 June 73 Burning Class 1

Time of first report 1256 Spread Index 4

Time first unit on scene 1304 Wind speed & direction SW-5

Time fire secured 1350

Equipment and/or men required to control fire 1 pumper, 1 backpacker, 6 men

Total acreage burned (estimated) 0.5 Ac

Location C-3, behind Geiger Trailer Park

Time last unit returned to quarters

Probable cause of fire troop movement in area

Follow-up procedures required (timber salvage, planting, none) none

Total of damages none

RALPH F. GURGANUS

10

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 22 May 73 Burning Class 3

Time of first report 1556 Spread Index 15

Time first unit on scene 1610 Wind speed & direction SW-9

Time fire secured 1719

Equipment and/or men required to control fire 1 plow unit, 1 pumper, 6 men

Total acreage burned (estimated) 49

Location C-32

Time last unit returned to quarters 2115

Probable cause of fire Flares

Follow-up procedures required (timber salvage, planting, none)

approximately $2450.00 damage estimated due to seedling and sapling destruction

Total of damages $2450.00

RALPH F. GURGANUS

11

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CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 22 May 73 Burning Class 3

Time of first report 1556 Spread Index 15

Time first unit on scene _____ Wind speed & direction SW-9

Time fire secured 1933

Equipment and/or men required to control fire 1 plow unit and 3 men

Total acreage burned (estimated) 14

Location OP-5

Time last unit returned to quarters 2115

Probable cause of fire flares

Follow-up procedures required (timber salvage, planting, none) none

Total of damages none

RALPH F. GURGANUS

WAR

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 21 May 73 Burning Class 3

Time of first report 1414 Spread Index 15

Time first unit on scene 1505 Wind speed & direction NW-6

Time fire secured 1653

Equipment and/or men required to control fire 1 plow unit, 1 pumper, 1 boondocker, 9 men

Total acreage burned (estimated) 8

Location F-6 Range

Time last unit returned to quarters 1830

Probable cause of fire Troops firing grenades on range

Follow-up procedures required (timber salvage, planting, none)

None

Total of damages None

RALPH F. GURGANUS

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO

15G/CFR/lp
11000
7 May 1973

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, TRAINING

Via: Assistant Chief of Staff, Facilities

Subj: Forest Fire, report of

1. At 2227, on 2 May 1973, the Base Fire Department received a call from Mrs. C. Courtright, Hubert, North Carolina, reporting a brush fire near TLZ ROBIN, which is located in the extreme northeast sector of Camp Lejeune.

2. Upon investigation by Base Fire Department and Base Maintenance Department Forestry personnel, five separate fires were located within approximately one mile of TLZ ROBIN. A fire plow unit was dispatched to the area and four of the fires were plowed out and secured at approximately 0600, 3 May. The remaining fire was burning in a pocosin (swampy) area and due to the soft muddy soil a fire plow could not operate in the area. This fire was observed throughout the day and at 1600 it was determined that a backfire around the pocosin would be necessary to secure the fire. The backfire was set and the fire was secured about 2100.

3. It was determined that 233 acres were burned, approximately 75 of which were a reforested area covered with five-year-old pine seedlings three to five feet in height. Practically all of the seedlings were killed. Along with a 6-year loss of growth, it is estimated that the damage was $50 per acre on 75 acres for a total loss of $3,750. In addition to this loss, there were nine people and 59 man-hours involved, 32 hours of which were overtime.

4. Within the burned area, the remnants of at least two parachute illumination flares were discovered. It would appear a certainty the fires were ignited by these flares. The closest area for authorized dropping of flares is the G-10 Impact Area seven miles away.

W. F. MILLER
Assistant Base Maintenance Officer

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO

5000/CDP/jo
11000
7 May 1970

MEMORANDUM FOR ASSISTANT CHIEF OF STAFF, TRAINING

Via: Assistant Chief of Staff, Facilities

Subj: Forest fire, report of

1. At 2227, on 2 May 1970, the Base Fire Department received a call from Mrs. O. Cunningham, Amber, North Carolina, reporting a brush fire near TRA ROBIN which is located in the extreme northeast sector of Camp Lejeune.

2. Upon investigation by Base Fire Department and Base Installations Department Forestry personnel, five separate fires were located within approximately one mile of [illegible]. A fire plow unit was dispatched to the area and four of the fires were plowed out and secured at approximately 0600, 3 May. The remaining fire was burning in a cocoan lagoon/[illegible] and due to the soft marshy soil a fire plow could not operate in the area. This fire was observed throughout the day and at 1630 it was determined that a helicopter should be used to drop water on the fire. The helicopter was used and the fire was secured about 2100.

3. It was determined that 285 acres were burned, approximately 75 of which were a thinned area covered in five-year-old pine seedlings three to five feet in height. Practically all of the seedlings were killed. Along with the 4-year loss of growth, it is estimated that the damage was $61 per acre on 75 acres for a total loss of $3,780. In addition to this loss, there were nine people and 31 man-hours involved, 18 hours of which were overtime.

4. Within the burned area, the remnant of at least two cemetery [illegible] were uncovered. It would appear [illegible] by the fire there. The closest was for authorized dropping of flares in the Gold Target Area, seven miles away.

[illegible] MILLER
Assistant Base Maintenance Officer

8

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 3 May 73 Burning Class 3

Time of first report 2327 Spread Index 11

Time first unit on scene 2430 Wind speed & direction 12-SW

Time fire secured (~~1030~~ 4 May)(

Equipment and/or men required to control fire 1 pumper, 3 men

Total acreage burned (estimated) 150

Location C-6 Bayou South Tower Road

Time last unit returned to quarters

Probable cause of fire illumination flares (probably 2)

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

7.

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 2 May 73 Burning Class 3

Time of first report 2227 Spread Index 11

Time first unit on scene 0350 Wind speed & direction 12-SW

Time fire secured (0455-3 May)(2050-3 May)

Equipment and/or men required to control fire (1 plow unit, 3 men-3 May) (1 plow unit, 3 men-3 May)

Total acreage burned (estimated) 72

Location C-5

Time last unit returned to quarters (0600-3 May)(2100-3 May)

Probable cause of fire illumination flares (probably 3)

Follow-up procedures required (timber salvage, planting, none) Estimated 48M loblolly destroyed @ $7/M = $336; site preparation + planting costs = $3120; approximately $300 value of longleaf destroyed

Total of damages $3,752

RALPH F. GURGANUS

6

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 2 May 73 Burning Class 3

Time of first report 2227 Spread Index 11

Time first unit on scene 2330 Wind speed & direction 12 - SW

Time fire secured 0455 3 May

Equipment and/or men required to control fire 1 pumper, 1 plow unit, 3 men

Total acreage burned (estimated) 11

Location TLZ Robin

Time last unit returned to quarters none due to other fires

Probable cause of fire illumination flare

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

#5

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 26 April 73 Burning Class 4

Time of first report 1117 Spread Index 29

Time first unit on scene 1200 Wind speed & direction SW-7

Time fire secured 1348

Equipment and/or men required to control fire 1 fire plow unit, 1 boondocker, 4 men

Total acreage burned (estimated) 20

Location F-3 Range

Time last unit returned to quarters 1515

Probable cause of fire Tracer fire on range

Follow-up procedures required (timber salvage, planting, none) None

Total of damages NONE

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 18 April 73 Burning Class 4

Time of first report 0857 Spread Index 20

Time first unit on scene 0917 Wind speed & direction SE - 7

Time fire secured 1200

Equipment and/or men required to control fire 7 men, 1 boondocky, 1 fire/plow unit.

Total acreage burned (estimated) 75

Location C - 30

Time last unit returned to quarters

Probable cause of fire flare

Follow-up procedures required (timber salvage, planting, none)

none as yet

Total of damages none yet

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 11 April 73 Burning Class 3

Time of first report 1555 Spread Index 19

Time first unit on scene 1600 Wind speed & direction NW-9

Time fire secured 1745

Equipment and/or men required to control fire 1 fire tractor/ plow unit, 6 men

Total acreage burned (estimated) 3

Location S.E. corner G-10 Range in C-37

Time last unit returned to quarters 1830

Probable cause of fire shell fire of H.E.

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 11 April 73 Burning Class 4

Time of first report 1222 Spread Index 30

Time first unit on scene 1225 Wind speed & direction NW-18

Time fire secured 1413

Equipment and/or men required to control fire 2 pumpers, 1 fire tractor/plow unit, 10 men

Total acreage burned (estimated) 10

Location SE Corner G-10 Range in C-37

Time last unit returned to quarters 1436

Probable cause of fire shell fire of HE.

Follow-up procedures required (timber salvage, planting, none)

none

Total of damages none

RALPH F. GURGANUS

CONSERVATION DIVISION
FORESTRY BRANCH
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/RFG/

From: Base Forester
To: Base Maintenance Officer
Via: Director, Conservation Division

Subj: Woods fire; report of

Date of fire 20 March 73 Burning Class 3

Time of first report 0925 Spread Index 17

Time first unit on scene 0942 Wind speed & direction NE - 7

Time fire secured 1158

Equipment and/or men required to control fire 2 pumpers, 1 tractor-plow unit, 7 men

Total acreage burned (estimated) 10

Location N.W. corner 6-10 Range

Time last unit returned to quarters

Probable cause of fire illuminum flares

Follow-up procedures required (timber salvage, planting, none) none good prescribe burn.

Total of damages none

RALPH F. GURGANUS

NATURAL RESOURCES AND ENVIRONMENTAL AFFAIRS DIVISION
BASE MAINTENANCE DEPARTMENT
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15G/RFG/th
31 December 1973

Mr. George W. Lowlar
5177 Colorado Street
Berkeley Manor
Camp Lejeune, North Carolina 28542

Dear George,

We were pleased to have you participating in our reforestation program aboard Camp Lejeune as a tree planter on 29 December 1973.

I understand you did the work to meet the forestry requirements in obtaining your Life Certificate in the Boy Scouts of America. May I say that we are proud to cooperate with the Scout organization and also to thank you for a job well done. If we can assist you or the Scouting organization in the future, please do not hesitate to contact us.

Sincerely,

Ralph F. Gurganus
Base Forester

15G/CFR/th
11000
10 Dec 1973

Base Maintenance Officer

Resident Officer in Charge of Construction, Jacksonville,
North Carolina, Area

Timber Contract, change order to

REF: (a) Contract N62470 - 73 - B - 0851

1. In accordance with paragraph 2A.11 of reference (a), it is proposed to add to the contract the following amount of timber at the stated price; and it is requested that the contractor be billed for below stated amount.

424 cords pine pulpwood $2756.00
@ $6.50 per cord

2. This timber is located in compartments 15 and 45 and is infested with southern pine beetles. The removal of this timber is for the convenience of the government. The contractor has agreed to remove this timber under the stated condition.

E. A. VOM ORDE, JR.

11000
27 Nov 1973

Forestry Branch, Natural Resources and Environmental Affairs Division

Administrative Director

Request for Funds

1. In regards to the need for additional funds in completing our site preparation areas by 30 June 1974, the following information is given.

Compartment No.	Planting Acres	Seed Tree Acres
2	64	113
20	40	
47	18	67
17		17
39	20	
45	39	
	181	197

2. By past experience and due to the other needed projects aboard Base, the Heavy Equipment Section could not have this work completed by the above date. We currently have $18,500 for commercial contract work. Due to rise in cost of such work, we request an additional $10,000 assistance.

RALPH F. GURGANUS

15G/RFG/th
11000
14 Nov 1973

Base Maintenance Officer

Resident Officer in Charge of Construction, Jacksonville,
North Carolina, Area

Timber Contract, change order to

REF: (a) Contract N62470 - 73 - B - 0851

1. In accordance with paragraph 2A.11 of reference (a), it is proposed to add to the contract the following amounts of timber at the stated prices; and it is requested that the contractor be billed for below stated amount.

424 Cords Pine Pulpwood @ $6.50 per cord $2756.00

Item A - 31,429 bd. ft. of pine sawtimber @ $50.00 per M	$1,571.45
Item B - 86 cords pine pulpwood @ $6.50 per cord	559.00
Item C - 11.34 cords hardwood pulpwood @ $2.50 per cord	28.35
Total	$2,158.80

2. This timber is located in compartment 32 parallel to the Sanitary Landfill. It is necessary to remove this timber to provide for expansion of the Landfill. This cutting is for the convenience of the government. The contractor has agreed to remove this timber under the stated conditions at the above price.

E. A. VOM ORDE, JR.

NOTICE:
Bids to be opened at 2:00 p.m.,
at the Office of
Officer in Charge of Construction
Jacksonville, North Carolina Area
Building 1005, Marine Corps Base
Camp Lejeune, North Carolina 28542

N62470-74-B-0628

NAVFAC
SPECIFICATION
NO. 05-74-0628

TIMBER HARVESTING, FY-74

at the

Marine Corps Base, Camp Lejeune, North Carolina

CONTRACT N62470-74-B-0628

All questions concerning the plans and specifications occurring prior to bid opening shall be presented to the Director of Design Division, Public Works Department, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone, Jacksonville, North Carolina, 451-2213, area code 919. Questions requiring interpretation of drawings and specifications must be submitted at least 7 days before bid opening. Interpretations or modifications to specifications made as a result of questions will be made by addendum only, and unless so done, all bidders should base their bids on the plans and specifications as issued.

All questions pertaining to bidding and for prior appointment to inspect the site of the work before bid opening shall be presented to the Officer in Charge of Construction, Jacksonville, North Carolina Area, Building 1005, Marine Corps Base, Camp Lejeune, North Carolina, telephone, Jacksonville, North Carolina, 451-2581, area code 919.

- - - - - * - - - - -

DIVISION 1. GENERAL REQUIREMENTS

SECTION 1A. General Paragraphs
1B. Bids

SECTION 1A. GENERAL PARAGRAPHS

1A.1 General description. The work shall include furnishing all materials, labor and equipment necessary to harvest timber and pulpwood, and other incidental related work. All cuttings are to become the property of the Contractor and are to be removed from the limits of the Station.

1A.2 Location. The work shall be located at the Marine Corps Base, Camp Lejeune, North Carolina, approximately as shown. The exact location will be indicated by the Officer in Charge of Construction (OICC).

1A.3 Form of contract. The contract will be executed on Standard Form 114-A of March 1960 and will include Standard Form 114-B, "Item Bid Page" and Standard Form 114-C, "General Sale Terms and Conditions". Additional General Provisions are attached and become a part of Form 114-C. The amended portion of Clause 22 is deleted and the following paragraph substituted therefor:

"WORK HOURS ACT OF 1962 -- OVERTIME COMPENSATION

"(a) No contractor or subcontractor contracting for any part of the contract work shall require or permit any laborer or mechanic to be employed on such work in excess of eight hours in any calendar day or in excess of forty hours in any work week unless such laborer or mechanic receives compensation at a rate not less than one and one-half times his basic rate of pay for all hours worked in excess of eight hours in any calendar day or in excess of forty hours in such work week, whichever is the greater number of overtime hours.

"(b) In the event of any violation of the provisions of paragraph (a), the contractor and any subcontractor responsible for such violation shall be liable to any affected employee for his unpaid wages. In addition, such contractor or subcontractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed, with respect to each individual laborer or mechanic employed in violation of the provisions of paragraph (a), in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of eight hours or in excess of forty hours in a work week without payment of the required overtime wages.

"(c) The Contracting Officer may withhold, or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor, the full amount of wages required by this contract and such sums as may administratively be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for liquidated damages as provided in paragraph (b)."

Clause 23 of Additional General Provisions, NONDISCRIMINATION IN EMPLOYMENT

(a) Clause 23 is amended by deleting references to the President's Committee on Equal Employment Opportunity, Executive Order 10925 of March 6, 1961, and Section 303 of Executive Order No. 10925 of March 6, 1961, and substituting therefor the Secretary of Labor, Executive Order No. 11246

of September 24, 1965 and Section 204 of Executive Order 11246 of September 24, 1965, respectively.

(b) Clause 23 is amended to insert after the reference to "Executive Order 10925" the following: "or the clause contained in Section 201 of Executive Order No. 11114."

(c) In accordance with regulations of the Secretary of Labor, the rules, regulations, orders, instructions, designations, and other directives issued by the President's Committee on Equal Employment Opportunity and those issued by the heads of various departments or agencies under or pursuant to any of the Executive Orders superseded by Executive Order 11246, shall, to the extent that they are not inconsistent with Executive Order 11246, remain in full force and effect unless and until revoked or superseded by appropriate authority. References in such directives to provisions of the superseded orders shall be deemed to be references to the comparable provisions of Executive Order 11246.

Add the following clause to "Additional General Provisions":

"29. MANDATORY INSURANCE COVERAGE

"(a) Within 15 days after the award of this contract, the successful bidder shall furnish to the OICC a certificate of insurance as evidence of the existence of the following insurance coverage in amounts not less than the amounts specified below:

Type of Insurance	Coverage		
	Per Person	Per Accident	Property
1. Comprehensive General Liability	$ 50,000	$100,000	$ 5,000
2. Automobile Liability	$ 50,000	$100,000	$ 5,000
3. Workmen's Compensation	As Required by State Law		
4. (Other as Required by State Law)			

The Comprehensive General and Automobile Liability policies shall contain a provision worded as follows:

> 'The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy.'

The certificate of all policies shall provide for notice of cancellation to the OICC and the certificates shall indicate that the above provision has been included.

"(b) The Prime Contractor shall also furnish a certificate of insurance as evidence of the existence of such coverage for all subcontractors who will work on the job. This certificate shall be furnished not less than five days before such subcontractor forces enter the Government premises."

PAYMENT

Clause 4 of Standard Form 114-C and Clause 17 of "Additional General Provisions" are modified as follows:

A payment unit shall be defined as one compartment. Full payment of the total amount of the purchasing price of the individual compartments must be made prior to removal of any property contained within the compartment. The Contractor may pay for more than one compartment at a time or the entire amount of the contract if he desires. The amount of payment for each compartment shall be determined as follows:

(a) Divide the total price bid for pine saw timber by the total number of pine saw timber trees marked for removal and multiply the resulting sum by the total number of marked pine saw timber trees in each payment unit area.

(b) Divide the total price bid for pine pulpwood by the total number of pine pulpwood trees marked for removal and multiply the resulting sum by the total number of pine pulpwood trees marked in each payment unit area.

(c) Add these sums together to obtain the total payment price for each payment unit area.

1A.4 Performance bond. The successful bidder, before the award of the contract, shall post a performance bond on Standard Form 25 in the sum of 25 percent of the entire contract price to cover the purchaser's obligations and undertakements in the harvesting and removal of timber under this contract. Such bond will remain in full force and effect during the term of this contract and any renewals as may be agreed upon.

1A.5 Time for completion. The entire work shall be completed prior to ~~31 December 1973~~ 30 June 1975.

1A.6 Drawing accompanying specification. The following drawing and sketches accompany this specification and are a part thereof. The drawing and sketches are the property of the Government and shall not be used for any purpose other than that contemplated by the specification.

NAVFAC DWG NO.	TITLE
4001693	Location Plan of Compartments.

PLATE NO.	TITLE
1	Forest type-stand size class compartment map, Compartment No. 1.
2	Forest type-stand size class compartment map, Compartment No. 4.

PLATE NO.	TITLE
3	Forest type-stand size class compartment map, Compartment No. 18.

1A.7 Safety program. The Contractor shall implement a safety program conforming to the requirements of Federal, State, and Local laws, rules and regulations. The program shall include, but is not limited to, the following:

a. "Occupational Safety and Health Standards", which can be ordered from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

b. Department of the Army, Corps of Engineers, "General Safety Requirements", which may be examined or obtained on application to the office where bids are being received.

1A.8 Methods and schedules of procedures. The work shall be executed in a manner and at such times that will cause the least practicable disturbance to the normal activities of the Station. Before starting any work, the sequence of operations and the methods of conducting the work shall have been approved by the Officer in Charge of Construction (OICC).

1A.9 Protection and repairs. The Contractor shall comply with the fire prevention requirements, security rules, and regulations of the activity; and shall provide approved means necessary for the protection of all Government and private property, including contents of buildings affected directly or indirectly by his operation. All damage to Government or private property resulting directly or indirectly from the Contractor's actions shall be repaired or replaced without cost to the Government.

1A.10 Accident reports. The Contractor and his subcontractors shall maintain an accurate record of, and shall report to the Officer in Charge of Construction (OICC), exposure data and all accidents resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, and equipment incidental to work performed under the contract. The report shall be submitted on Standard Form 92 and shall be in accordance with "Instructions to Contractor for Preparation of Supervisors Report of Accident"; the "Instructions" and the required forms will be furnished by the OICC.

1A.11 Stabilization of prices, rents, wages, and salaries (1973 Feb). (This applies only on contracts with Contractors whose annual sales or revenues are $50 million or more.)

By Executive Order 11695, dated January 11, 1973, the President further implemented his Economic Stabilization Program. The Contractor represents that to the best of his knowledge and beief he is in complete compliance with Executive Order 11695 if applicable. Further, the Contractor warrants that insofar as Executive Order 11695 is applicable, the amounts invoiced under this contract will not exceed the lower of (1) the contract price, or (2) the maximum levels established in accordance with the order.

1A.12 Notice of Program for further providing for the Stabilization of the Economy.

Offerors are advised that prices are expected to be in compliance with the General Price Standard of the Cost of Living Council as set forth in Section 130.13 of Title 6, Code of Federal Regulations.

1A.13 Environmental Litigation

a. If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, and such order is based solely on acts or omissions of the U. S. Government, such suspension, lay, or interruption shall be considered as if order by the Contracting Officer in the administration of this contract under the terms of the "Suspension of Work" clause of this contract. The period of such suspension, delay, or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

b. The term "environmental litigation," as used herein, means a lawsuit alleging that the U. S. Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

End of Section 1A

SECTION 1B. BIDS

1B.1 Instructions to bidders. Standard Form 114-A of March 1960, Bid and Award, and Standard Form 114-B, Bid Item Page, shall be observed in the preparation of bids. Bidders shall affix their names and return addresses in the upper left corner of bid envelopes. Envelopes containing bids must be sealed.

1B.2 Bid guaranty will be required in the amount of 20 percent of the total amount of the bid. A bid bond on Standard Form 24 may be furnished in lieu of bid deposit.

1B.3 Items of Bids. Bids shall be submitted, in triplicate, on Standard Form 114-B, upon the following items:

Item 1. Total amount to be paid to the Government for the harvesting of pine saw timber, complete in accordance with the drawing and specification.

Item 2. Total amount to be paid to the Government for the harvesting of pine pulpwood, complete in accordance with the drawing and specification.

Item 3. Total amount to be paid to the Government for the harvesting of hardwood saw timber, complete in accordance with the drawing and specification.

Item 4. Total amount to be paid to the Government for the harvesting of hardwood pulpwood, complete in accordance with the drawing and specification.

1B.4 Award of contract, if made, will be based upon the highest bid computed to be the total of any or all Bid Items. Split awards will not be made.

1B.5 Telegraphic modification of bids may be made. Two signed copies of the telegram in a sealed envelope marked, "Copies of telegraphic modification of bid for Timber Harvesting, FY-74, Specification No. 05-74-0628, should be forwarded immediately to the office to which the written bids were submitted.

1B.6 Reference to amendment. Each bidder shall refer in his bid to all amendments to this specification; failure to do so may constitute an informality in the bid.

R. E. DAGGETT, CAPT, CEC, USN
Officer in Charge of Construction
27 July 1973

End of Section 1B

DIVISION 2. TIMBER HARVESTING

SECTION 2A. DETAIL REQUIREMENTS

2A.1 General requirements. The work includes the cutting and harvesting of all marked trees in Compartments Nos. 1, 4 and 18. Timber products shall be removed from the Base through gates designated by the Officer in Charge of Construction (OICC). All of ingress and egress shall be as designated by the OICC.

2A.2 Marked trees. The trees to be cut are marked with yellow paint at ground level and approximate eye level. Saw timber trees are marked with two spots of paint at eye level and two spots of paint at ground level. Pulpwood trees are marked with one spot at eye level and one spot at ground level, except in stands to be clear cut or seed tree cut, the trees to be cut will only be marked at eye level. In seed tree cuts, trees to be left for seed will be marked with a band of paint, of other than yellow color, at eye level and a spot of paint at the ground line. Seed trees cut shall be paid for as directed under the paragraph entitled "Penalty payments". Trees bearing old markings, but not freshly marked, shall not be cut. Any dispute as to whether a mark or marks are fresh shall be subject to the decision of the OICC. All trees cut, which bear an old marking only, shall be paid for as specified under "Penalty payments" unless prior written approval is given for their removal.

2A.3 Quantities. The volumes specified herein are estimates only and are not guaranteed. The Government guarantees that there are the specified number of saw timber trees and pulpwood trees marked for cutting within the sale area boundaries. Bidders are required to satisfy themselves as to the amount of timber products available under each of the items described.

2A.4 Marked timber. The number of trees and estimated volumes to be harvested by areas, compartments and stands are as follows:

COMPARTMENT NO. 1

			PINE				HARDWOOD			
			SAW TIMBER		PULPWOOD		SAW TIMBER		PULPWOOD	
Stand	Type of Cut	Acres	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)
2	Int. Cut	157	744	114,045	4,666	374	120	15,662	1,159	92
5	Removal Cut	118	2,062	344,183	3,407	284	---	---	---	---
6	Int. Cut	174	745	110,424	2,656	211	---	---	---	---
7	Int. Cut	55	387	54,066	1,760	132	---	---	---	---
8	Int. Cut	71	950	159,766	3,026	221	34	3,450	374	30
9	Int. Cut	36	96	15,560	136	9	65	6,540	248	19
10	Clear Cut	35	206	38,205	249	21	66	4,740	307	23
12	Seed Tree	54	1,072	166,429	1,593	114	233	21,818	1,839	139
13	Seed Tree	11	464	112,344	147	18	---	---	247	30
14	Int. Cut	17	114	12,736	853	86	---	---	100	8
	Total	728	6,840	1,127,758	18,493	1,470	518	52,210	4,274	341

COMPARTMENT NO. 4

5A	Seed Tree	68	2,366	395,966	1,769	154	98	6,740	1,330	90
5B	Int. Cut	75	667	94,200	858	87	44	11,060	691	45
5C	Seed Tree	75	2,669	473,253	2,763	208	110	10,098	522	36
5D	Int. Cut	26	523	90,606	219	27	21	764	439	36
5E	Int. Cut	16	227	32,192	738	47	---	---	---	---
5F	Int. Cut	14	172	31,456	181	19	---	---	---	---
6	Int. Cut	55	207	45,135	196	18	474	63,780	1,260	126
7	Int. Cut	80	455	77,094	2,528	337	---	---	---	---
8	Seed Tree	41	1,296	288,214	341	41	295	30,144	1,102	98
9	Removal	22	54	8,420	16	1	96	9,890	---	---
10	Int. Cut	26	138	18,079	1,513	113	---	---	---	---
	Total	498	8,774	1,554,645	11,122	1,052	1,138	122,476	5,347	431

COMPARTMENT NO. 18

			PINE				HARDWOOD			
			SAW TIMBER		PULPWOOD		SAW TIMBER		PULPWOOD	
Stand	Type of Cut	Acres	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)	No. of Trees	Volume (Bd. Ft. Scribner)	No. of Trees	Volume (Std. Cords)
1	Int. Cut	28	24	2,688	44	3	43	3,600	126	14
2	Int. Cut	25	---	---	727	76	---	---	---	---
3	Clear Cut	75	1,117	126,560	1,751	104	---	---	214	11
4	Int. Cut	24	430	63,302	679	39	---	---	---	---
7	Int. Cut	9	---	---	776	80	---	---	---	---
8	Int. Cut	33	354	55,727	1,951	176	---	---	---	---
9	Clear Cut	55	1,088	172,718	932	101	16	411	252	15
10	Clear Cut	31	276	43,670	671	54	---	---	---	---
11	Removal Cut	110	1,246	208,791	---	---	---	---	---	---
12	Int. Cut	64	336	53,943	1,487	110	---	---	317	21
13	Removal Cut	19	680	93,535	---	---	---	---	---	---
16	Int. Cut	36	536	70,091	1,525	113	---	---	---	---
	Total	509	6,087	891,025	10,543	856	59	4,011	909	61
GRAND TOTAL:		1,735	21,701	3,573,428	40,158	3,378	1,715	178,697	10,530	833
				134.25 per M				75.00		11.40

Topwood 21,701 x .0275 = 597

3,975 Cords
20.31 per Cd

Total Sale - $585,181.00

05-74-0628-2A-3

2A.5 Merchantability and quality. Merchantable trees and merchantable products cut from trees shall equal or exceed the following specifications:

Species and Type	Tree Specifications		Product Specifications		
	Units per tree Number	Length Feet	Diameter Inside Bark At Small End Inches	Net Scale In % of Gross Scale %	Minimum Net Scale Board Ft.
Loblolly, long-leaf pine sawlogs	1-1/2	8	7	33-1/3	10
Hardwood sawlogs	1-1/2	8	11	50	25
Pine pulpwood bolts	2-1/2	4	4	None	None
Hardwood pulp	2-1/2	4	5	None	None

Provided that sound knots, firm red heart, blue stain, and worm holes shall not be regarded as defects, and provided further that all trees shall be utilized to as small a top diameter as practicable. Log lengths shall be varied so as to secure the greatest practicable utilization of all merchantable material. Pulpwood bolts shall be reasonably straight and sound.

2A.6 Schedule of work.

(a) Cutting and logging operations in the various payment unit areas shall be accomplished in the order selected by the Contractor, subject to the approval of the OICC.

(b) Attention is called to the fact that due to military requirements, the Contractor may be required to move his operation from one area to another without prior notice in order to prevent conflict with military training. The Contractor will receive a minimum of 48 hours' notice if such a move is required.

2A.7 Cutting. All "Marked trees" shall be harvested. The height of stumps remaining after cutting shall not exceed 8 inches for saw timber and 4 inches for pulpwood. The merchantable portion of all cut trees shall be removed from the Government reservation. Trees shall be felled directionally so as to cause the least practicable damage to unmarked trees or trees to remain. Trees shall be felled away from roads, ditches, streams, river, food plots, trails and other improvements. In all field stands where the timber is thick and damage to remaining trees by heavy equipment will be excessive, chain saws shall be used. Trees shall be topped in all cutting areas before skidding.

2A.8 Slash disposal. Trees shall be felled so that unlopped tops shall lie reasonably flat on the ground and clear of residual trees 4 inches dbh and larger. No limbs, tops, cull logs or logging debris shall be left in stream channels, ditches, or within the clearing limits of roads, wildlife food plots, trails and fire breaks. Within 50 feet of the edge of any main road or open area, tops shall be lopped so that all limbs and residual material will be reasonably flat on the ground. Lopping shall be done as the harvesting progresses. In the event of unnecessary damage, "penalty payments" specified will be invoked.

A.9 Logging operations. The order of harvesting in the designated areas shall be subject to approval by the OICC. All phases of the operations shall proceed in an orderly manner. In areas where timber to remain is thick, skid trails to logging decks shall be used so that damage may be kept to a minimum. These skid trails will be located by the OICC if necessary. Skidding equipment shall not run circular patterns in cutting areas, unless in clear cuttings or seed tree areas, when picking up felled trees. The Contractor shall be required to leave and enter main roads at designated places in order to protect seeded road shoulders and to use secondary existing roads and turnoffs where available. Where such existing roads and turnoffs are not available, a temporary "bridge" of planks will be laid over the road shoulder so as to minimize damages from hauling. When no longer needed, such temporary "bridges" shall be removed by the Contractor. All such protective measures shall be performed by the Contractor without cost to the Government. Damage to road shoulders or other seeded areas shall be repaired by the Contractor so as to restore such areas to the condition which existed before use.

2A.10 Damage to existing timber. The Contractor shall not unnecessarily damage young growth or trees left standing. Conventional logging equipment shall be used in a manner which minimizes the damage to young growth or other uncut timber. In the event unnecessary damage is caused penalty payments for damages will be invoked. Contractor is liable for time involved in scaling.

2A.11 Salvage cutting of merchantable timber. Merchantable trees which are dead, diseased, or overlooked during the original marking operations or damaged by ice, lightning, wind, or fire, or in the event there is a need to salvage merchantable trees outside the designated sale areas due to military necessity or convenience of the Government, the trees will be marked and tallied by the Government and removed by the Contractor. For such cutting, the Contractor shall pay for the volumes involved at the bid price, except that in small isolated locations, price shall be subject to adjustment by negotiation.

2A.12 Temporary facilities. The construction of temporary structures, roads or other improvements and facilities necessary for the logging of the timber will be permitted provided that plans, locations and arrangements for removal of such facilities are approved in advance by the OICC.

2A.13 Sanitation. Operations under the contract shall be conducted in compliance with all applicable current state and local laws, rules and regulations concerning sanitation. All temporary structures and improvements, and the grounds adjacent thereto, shall be maintained in a clean, sanitary condition and all rubbish shall be disposed of in an approved manner. All buildings, toilets, garbage pits and other structures shall be located so as to prevent the pollution of water in the streams and lakes and shall be constructed and maintained to prevent the breeding of flies or the development of other unsanitary conditions. Waste and equipment parts around logging decks and sale area shall not accumulate.

2A.14 Protection of ditches, streams and stream side areas. All operations under the contract, including the construction of roads and other facilities shall be conducted in a manner to minimize damage to ditches, stream courses and stream sides. Logs shall not be hauled, skidded, or yarded in or across any ditch or stream course without prior approval. All ditches and stream courses shall be clear of logs, chunks, and debris resulting from the logging operations by the Contractor.

2A.15. Prevention and control of soil erosion and soil damage. The Contractor shall take all practicable precautions to prevent or minimize soil erosion and damage to the soil, including but not limited to:

(a) Prevention of gullying of roads, skid trails, and log landings.

(b) Protection of cover, soil and water conditions in natural or artificial openings.

(c) Refraining from operation of logging equipment when ground conditions are such that excessive soil damage will result. To avoid such damage, the OICC may suspend logging operations in whole or in part for such periods as are necessary.

Damage attributable to the Contractor's operations under the contract, which is determined by the OICC as excessive or was avoidable, shall be repaired by the Contractor as soon as practicable to prevent accelerated erosions or soil damage. After logging operations have been completed in each of the designated areas, the Contractor shall repair in a satisfactory manner all damage resulting from his operation which will cause accelerated soil erosion or reduce the productive capacity of the soil.

2A.16 Repair or replacement of damaged work. Existing roads, bridges, culverts, fences, utility lines, buildings or other existing facilities damaged beyond normal wear and tear by operations of the Contractor shall be repaired or replaced as directed without cost to the Government. Repaired or replaced work shall be in a condition as good as existed prior to the start of the work. Existing roads used by the Contractor shall at

all times be maintained usable and shall be kept passable and clear for official station traffic.

2A.17 Timber marking equipment. The Contractor, his subcontractor, agents, servants and employees are prohibited from bringing onto the Station or having in their possession while on the Station, paint or equipment for painting.

2A.18 Authorized representative of the Contractor. The Contractor shall at all times during his operations under the contract have present at the job site an individual authorized to receive and take action on instructions given him by the OICC or his authorized representative.

2A.19 Safety. The Contractor, his employees, subcontractors and their employees shall conduct their activities in a safe and workmanlike manner at all times, and shall cooperate in making it possible for the OICC or his representative to safely and economically scale, inspect the cutting, logging, construction or other activities of the Contractor, and to conduct their other official duties in the sale areas and vicinity.

2A.20 Penalty payments.

(a) Trees selected for seed trees which are excessively damaged or cut by the Contractor shall be paid for at the rate of five dollars per diameter inch measured at stump height of twelve inches above the ground, whichever is larger.

(b) Merchantable material designated for cutting not removed from the Reservation during cutting operations shall be paid for at double the bid price, when so directed by the OICC.

(c) Any repair work accomplished by the Government necessitated by the failure of the Contractor to repair his own damage, shall be paid for by the Contractor at the actual cost to the Government plus 30 percent acceleration for overhead plus 30 percent surcharge.

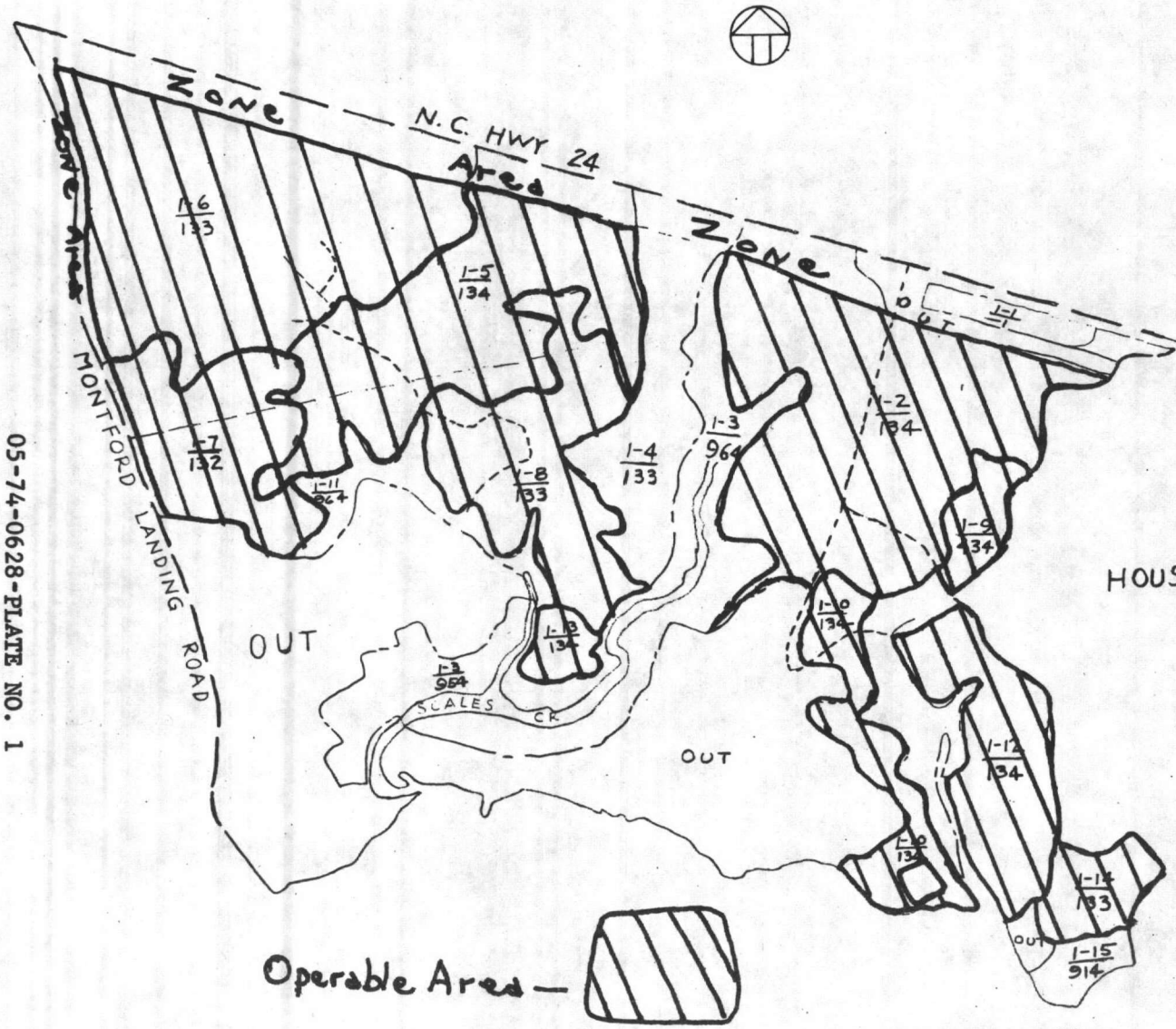
(d) All unmarked trees cut or excessively damaged by careless operations of the Contractor shall be paid for at the rate of $0.25 per diameter inch for trees up to 12 inches in diameter outside bark (dob) across the stump, if cut, or at 4-1/2 feet (dbh) outside bark above the ground, if uncut; $1.00 per diameter inch for trees between 12.1 inches and 18 inches; and $2.00 per diameter inch for all trees 18.1 inches in diameter and larger. All penalties will be determined by the OICC or his representative. When directed by the OICC, the damaged trees shall be harvested. The exception to the foregoing penalty will be when of necessity and with prior approval of the OICC, additional trees are cut for necessary access to roads or trails to facilitate logging operations. In these cases, the additional volume in trees of more than 5 inches dbh

will be paid for at the bid prices. Stumpage damaged by fire caused by the negligence or fault of the Contractor shall be cut. The Government will mark and tally such stumpage and the Contractor shall buck it into timber products and remove it from the Station as directed. Payment for such fire damaged and removed products shall be made by the Contractor at double the bid price.

(e) The penalty for possession or use of paint or equipment for painting shall be the immediate termination of this contract, at the option of the OICC.

End of Section 2A

End of Specification



PHOTOS: 15-20
34-39

MARINE CORPS BASE · CAMP LEJEUNE, N.C.
FOREST TYPE-STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS

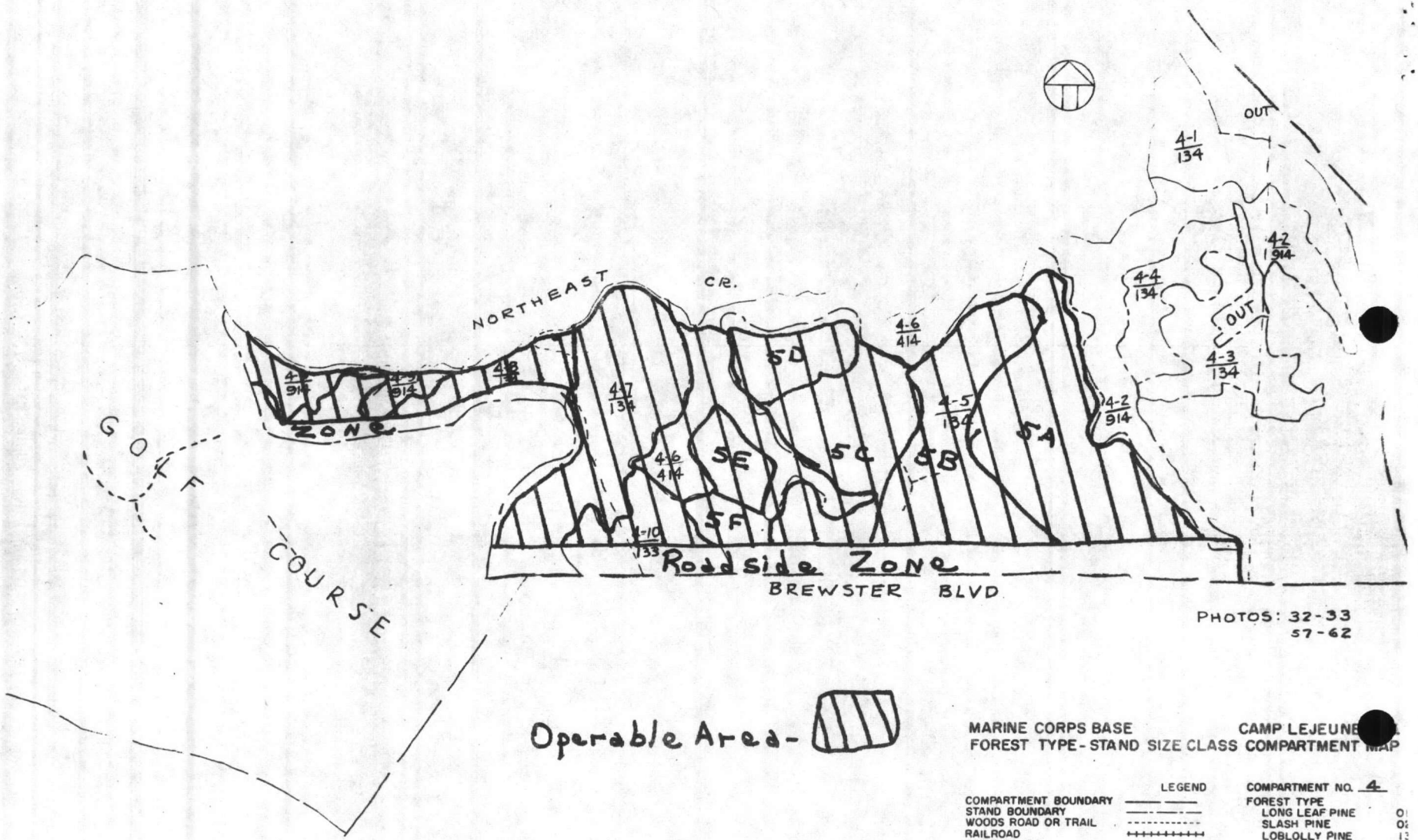
SIZE CLASS
NON-STOCKED 1
SEEDLING-SAPLING 2
POLE TIMBER 3
SAW TIMBER 4

1000 0 1000 2000
GRAPHIC SCALE

COMPARTMENT NO. 1

FOREST TYPE
LONG LEAF PINE 01
SLASH PINE 02
LOBLOLLY PINE 1[illegible]
POND PINE 1[illegible]
LOBLOLLY-HARDWOOD 4[illegible]
POND PINE-HARDWOOD 4[illegible]
SCRUB OAK 5[illegible]
SWEET GUM-WATER OAK 9[illegible]
ELM-ASH 9[illegible]
WHITE OAK-RED OAK 9[illegible]
CYPRESS-TUPELO 9[illegible]
BLACK GUM-RED MAPLE 9[illegible]
NON FORESTED –

05-74-0628-PLATE NO. 1



MARINE CORPS BASE CAMP LEJEUNE
FOREST TYPE - STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS

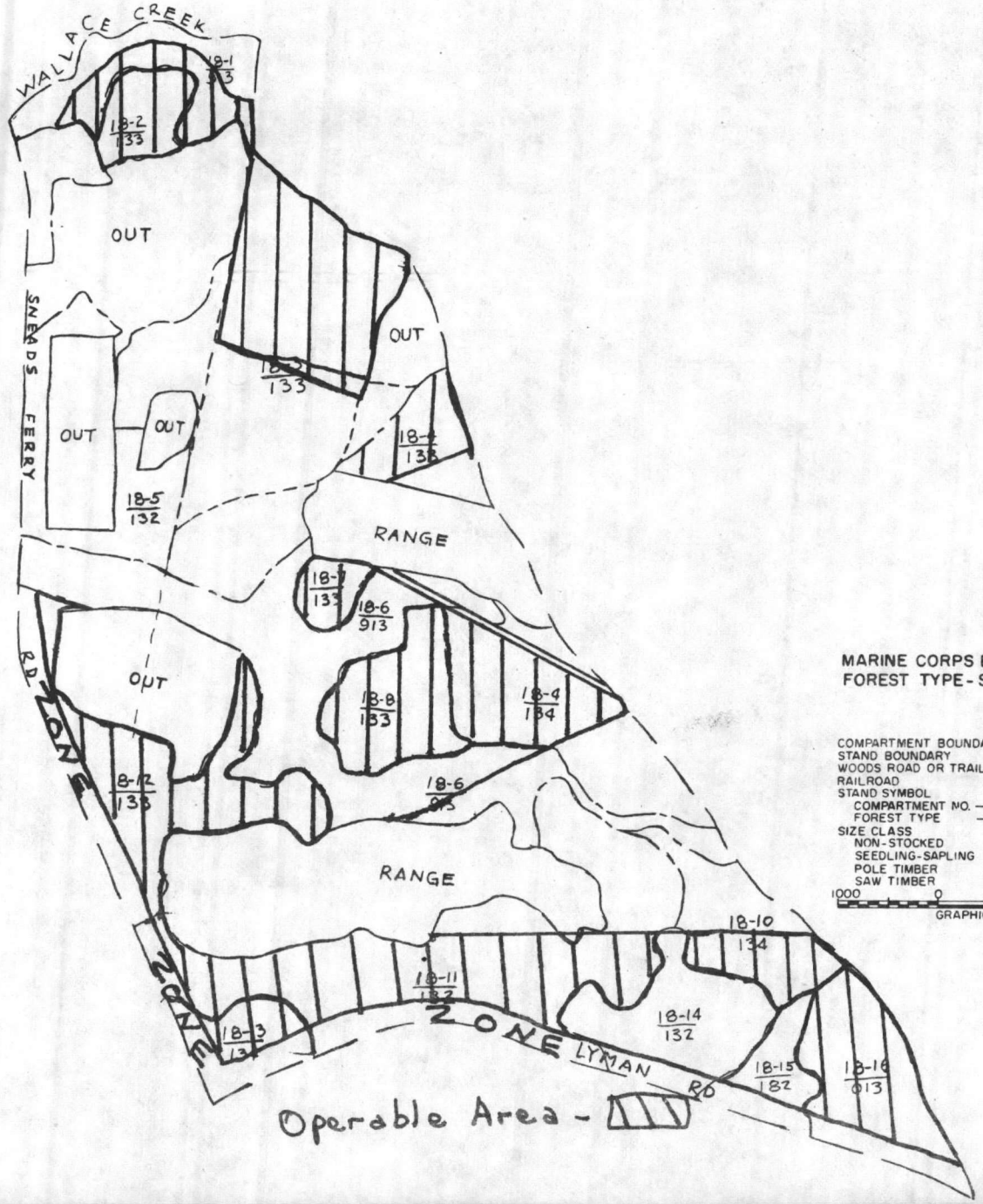
SIZE CLASS
NON-STOCKED 1
SEEDLING-SAPLING 2
POLE TIMBER 3
SAW TIMBER 4

1000 0 1000 2000'
GRAPHIC SCALE

COMPARTMENT NO. 4

FOREST TYPE
LONG LEAF PINE 01
SLASH PINE 02
LOBLOLLY PINE 12
POND PINE 1[illegible]
LOBLOLLY-HARDWOOD 4[illegible]
POND PINE-HARDWOOD 4[illegible]
SCRUB OAK 5[illegible]
SWEET GUM-WATER OAK 97
ELM-ASH 9[illegible]
WHITE OAK-RED OAK 9[illegible]
CYPRESS-TUPELO 9[illegible]
BLACK GUM-RED MAPLE 9[illegible]
NON FORESTED

05-74-0628-PLATE NO. 2



MARINE CORPS BASE CAMP LEJEUNE, N.C.
FOREST TYPE - STAND SIZE CLASS COMPARTMENT MAP

LEGEND

COMPARTMENT BOUNDARY
STAND BOUNDARY
WOODS ROAD OR TRAIL
RAILROAD
STAND SYMBOL
COMPARTMENT NO. → 13-3 ← STAND NO.
FOREST TYPE → 134 ← SIZE CLASS

SIZE CLASS
NON-STOCKED 1
SEEDLING-SAPLING 2
POLE TIMBER 3
SAW TIMBER 4

1000 0 1000 2000
GRAPHIC SCALE

COMPARTMENT NO. 18

FOREST TYPE
LONG LEAF PINE
SLASH PINE
LOBLOLLY PINE
POND PINE
LOBLOLLY-HARDWOOD
POND PINE-HARDWOOD
SCRUB OAK
SWEET GUM-WATER OAK
ELM-ASH
WHITE OAK-RED OAK
CYPRESS-TUPELO
BLACK GUM-RED MAPLE
NON FORESTED

PHOTOS: 152
182-186
214-218

05-74-0628-PLATE NO. 3

	ACTION	INFO	INITIAL
BMO		✓	LB
ABMO		✓	WA
MAINT NCO			
SAFETY CHMN			
PROP			
M&R			
OPNS			
ADMIN			
TELE			
UTIL			
ENVIRON AFFAIRS	✓		
SECRETARY			

Mr. R - what say ye?

Assistant Chief of Staff, Training
Marine Corps Base
Camp Lejeune, North Carolina 28542

3F/LBN/jlh
5000/1
25 Sep 1973

From: Assistant Chief of Staff, Training
To: Assistant Chief of Staff, Facilities

Subj: Fire Department Assistance; request for

1. The vegetation surrounding individual targets in the G-10 impact area has grown to such a degree in the past few months that targets have become masked from observer's calling in the artillery and air strikes. This situation makes accurate fire direction virtually impossible.

2. In order to alleviate this situation, the Training Facilities Branch of this section has discussed with the 2d Marine Aircraft Wing the possibility of making aerial delivered napalm drops on the heavily vegetated areas. The Wing has tentatively agreed to make the required drops.

3. Consideration was given to emplacing and detonating from the ground. However, based on previous experience and discussions with EOD, range maintenance, engineer and artillery personnel, it was determined the most feasible means of burning the area would be through the use of aerial delivered napalm.

4. It is requested the Base Fire Department be directed to assist this section when the actual burning takes place. A definite date for the required burning has not been established but if direct liaison with the Base Fire Department is authorized, the details can be worked out and a mutually acceptable date established.

5. Areas scheduled to be burned are located at the following coordinates:

a. 908360

b. 910358

c. 912360

d. 915359

e. 916360

3F/LBN/jlh
5000/1
25 Sep 1973

Subj: Fire Department Assistance; request for

f. 908358

g. 917361

h. 919359

i. 922357

j. 921359

k. 920361

l. 911359

6. The ecological impact of burning the above listed areas should be minimal since the areas are periodically cleared to provide better visibility during live fire exercises.

J. J. SNIDERO

15G/CFR/th
11000/7
1 Oct 1973

Maint Action

Base Maintenance Officer

Assistant Chief of Staff Facilities

Fire Department Assistance; request for

REF: (a) ACofS Fac note forwarding ACofS Trng ltr of 25 Sep 1973

1. The following comments are submitted as requested by reference (a):

a. This burning can be done safely under proper weather conditions. The wind should be from a northerly direction, relative humidity not less than 50% and at a time when there has been at least .5 of an inch of rainfall within the past four days. A fire plow should be on stand-by in the OP - 2 Area.

b. Considerable air pollution will be generated by the napalm drops, however, it will be quickly dispersed over a non populated area and the ocean by a northerly wind.

W. F. MILLER
Acting

5250 - CONTROL OF INDIVIDUAL FOREST INSECT SPECIES.

1. Southern Pine Beetle. Southern pine beetle, Dendroctonus frontalis, is the most destructive pine beetle in the South. The beetle can kill trees singly or in groups of several acres. *-Multiple generations during the growing season provide the means for a rapid buildup to outbreak levels.

All control decisions are made by the land manager. He must make decisions using information provided in the biological evaluation, cost/benefit statement and the environmental evaluation.

The control effort requires that all actively infested trees in an area be treated regardless of location, number or size.

Suppression activities are in two phases: operational survey and treatment.

a. Operational Surveys. Aerial survey data enable land managers to effectively plan ground operations. In cases where work forces are limited, timely operational surveys are used to direct ground activities into those areas where needs are greatest.

(1) Aerial Surveys. Make operational aerial surveys over the area of infestation at two-three week intervals. Conduct these surveys on predetermined flight lines in an east-west direction at one mile intervals. Two observers, one on either side of the airplane, should map the location of all singles or groups of red-topped and fading pines within one-half mile of the aircraft. Establish flight lines at one-half mile intervals over the outbreak area and fly alternate lines on each operational survey. Flying at a height of 1,000 feet above ground at an airspeed of 90-120 miles per hour will give 100 percent coverage.

(2) Ground Surveys. Ground check all spots observed from the air as soon as possible. Ground scouts must be able to identify the organism causing tree mortality and determine if active southern pine beetle infested trees are present in the spots. If active infestations are detected, ground scouts should estimate the number of attacked trees.-*

*-Ground crews should always be on the alert for other southern pine beetle infestations not detected from the air.

b. Treatment. Suppression should be a year round effort. Winter is particularly important, however, because brood densities tend to be higher and are concentrated in fewer trees. Research showed that removal of one infested tree during the winter may prevent 10 trees from becoming infested the following spring.

Suppression is achieved using one or a combination of the three methods given below. The methods are listed in order of priority.

(1) Removal of Infested Trees by Commercial Sale or Administrative Use. When infested trees of merchantable size are accessible they should be removed by commercial sale or administrative use procedures. Logging of the infested material should begin immediately. Contract time limits should insure rapid removal.

Where practical, and if host type is present, a 40 to 70 foot buffer strip should be marked and cut adjacent to and ahead of the most recently infested trees. This practice is effective in reducing the possibility of "Breakouts." When only a small volume of infested merchantable material occurs in a spot, noninfested trees surrounding the spot may be marked to provide an operable cut.

The order of priority for removing beetle infested timber from a spot should be as follows:

Trees having nearly developed broods. (Usually the red and fading trees.)

Trees having young broods. (Usually the green, recently infested trees.)

Trees in the buffer zone.-*

*-Remove infested trees from National Forest lands by commercial sale or administrative procedure in accordance with guidelines and procedures set forth in FSM 2400 through 2490.

Minimize the possibility of spreading beetle outbreaks by promptly processing infested material at mills within the outbreak area. Slabs and bark should be destroyed by chipping or burning.

When a potential exists for Ips engraver buildups, slash should be lopped and scattered making it too dry for brood development.

(2) Piling and Burning. Unmerchantable or inaccessible southern pine beetle infestations can be suppressed by cutting, piling and thoroughly burning the bark of infested trees. The entire bark surface must be thoroughly burned to insure effective control. The order of priority for cutting, piling and burning infested trees particularly in large spots is the same as paragraph (1) under removal of infested trees by commercial sale or administrative use. Cutting a buffer strip is not recommended. To reduce the possibility of "Breakouts" every effort should be made to locate and treat all green infested trees during the piling and burning operation.

(3) Chemical Control. Chemical formulation recommended for southern pine beetle control is a 1/2 percent Lindane spray with No. 2 fuel oil as the carrier. This may be formulated from a 20 percent Lindane emulsifiable concentrate or oil concentrate at the rate of 11 pints of concentrate in enough fuel oil to make 55 gallons of spray. (Ratio of one part 20 percent Lindane EC to 39 parts No. 2 diesel fuel.)

Cut, limb and buck all infested trees into workable lengths. Spray the infested bark surface to the point of run-off. A compressed air sprayer (3 gallon capacity or equivalent) is an ideal applicator. Infested logs must be turned two or three times to insure complete treatment of infested bark. Spray stumps and bark removed by woodpeckers. Low-*

*-pressure sprayers may be used to treat large, accessible infestations.

The order of priority for cutting and spraying infested trees in large spots is the same as paragraph (1) under removal of infested trees by commercial sale or administrative use. Cutting a buffer strip is not recommended. To reduce the possibility of "Breakouts" every effort should be made to locate and treat all green infested trees during the chemical control operation.

Never spray trees from which southern pine beetle brood has emerged. Natural enemies of the southern pine beetle in these trees can then complete their development. To prevent aerial spotters from mapping treated spots cut trees with red needles from which beetles have emerged.

Instructions for minimizing the adverse effects of mixing, transporting and storing pesticides, applying pesticides and disposing of pesticide containers and excess chemicals are outlined in section 8.3 of the Forest Service Health and Safety Code and FSM 5242.21. Detailed safety procedures should be outlined in the project suppression plan. -*

(4) Re-examination of Treated Areas. Re-examine areas where infested trees were removed by commercial sales, piled and burned or chemically treated within two or three weeks after treatment to check for additional infested trees. If additional trees are found, treat them.

ASSISTANT CHIEF OF S[redacted]LS
HEADQUARTERS, MAR[redacted]BASE

TO:

BASE COMPTROLLER PUBLIC WORKS O

BASE STAFF JUDGE ADVOCATE PMO

BASE MAINTENANCE O FIRE MARSHAL

BASE MOTOR TRANS O QTRS & HSG

CO BASE MAT BN BOQ/BSQ

ATTN: _____

REMARKS:

1. Attached ltr is forwarded f/~~action.~~ INFO

2. Please initial, or comment, and return all papers to this office

3. Your file copy.

M. D. DRUMMOND, JR.
By direction

NAVAL MESSAGE

OPNAV FORM 2110/99 (REV. 3-69) S/N 0107 - 705-4001

RELEASED BY	DRAFTED BY	PHONE EXT NR	PAGE	PAGES
J. J. SNYDER COL A C/S TRNG	SSGT A. R. SMITH	5733	1 OF	1
DATE: 13 SEPTEMBER 1973	TOR/TOD	ROUTED BY	CHECKED BY	

MESSAGE NR	DATE/TIME GROUP	PRECEDENCE	FLASH	IMMEDIATE	PRIORITY	ROUTINE
		ACTION				XXXXXXXXXX
		INFO				XXXXXXXXXX

FROM: CG MARCOR BASE CAMP LEJEUNE N. C. 28542
TO: CG FMFLANT NORVA
INFO: CG 2D MAW CPNC
MAG-26
MAG-29

UNCLAS//5050//

SPEC AIR SUPPORT REQ

A. FOR O 4631.4
B. FOR O 4631.6C

1. FOL REQ FOR UH-1 OR CH-46 HELO SUP SUB IAW REF A AND B (ALL TIMES LOCAL)

A. MARCORB CAMP LEJEUNE.
B. ROUTINE AIRIAL RECON OF CAMLEJ AREA TO SURVEY PINE BEETLE DAMAGE TO TREE STANDS. EST 2 HR TO COMPL RECON.
C. ALS-4 CAMLEJ (GC 851382).
D. ALS-4 CAMLEJ ON CAMPL. RECON.
E. 1700900 SEP 1973.
F. 17 0900 SEP 1973. 19 0900 Sept. 73
G-I. N/A.
J-K. MR. C. F. RUSSELL EXT 5003 BAS CONSERVATION
L. 3.
M. N/A.

Dist:
A C/S TRNG
A C/S FAC
BASE MAINT O

UNCLASSIFIED

DATE/TIME GROUP 141258Z Sep 73

15G/CFR/te
11000/7
29 Aug 1973

Base Maintenance Officer

Communication-Electronic Officer

PR-36 Radios; request for

1. It is requested two PR-36 radios equipped with dual channels (a channel for the Base Fire Net and a channel for the Military Police Net) be provided for use in the Natural Resources and Environmental Affairs Division, Base Maintenance Department for the purpose of forest fire control and forest surveillance. It is also requested that four chargers for subject radios be provided, two of the office plug-in type and two of the vehicle mounted type.

2. Expenditures for subject radios are chargeable to the forestry budget.

CR

E. A. VOM ORDE, JR.

file

15A/WFM/lp
11000
23 Aug 1973

From: Commanding General
To: Commanding Officer, 8th Marines, 2d Marine Division, FMF
Via: Commanding General, 2d Marine Division, FMF (Attn: Assistant Chief of Staff, G-4)

Subj: Open Burning

Ref: (a) MCO P11000.8

Encl: (1) Work Request Number 192-73

1. Enclosure (1) is returned without action.

2. Open burning of combustible materials (classified or otherwise) is prohibited by reference (a).

3. It is suggested that classified papers from your command be disposed of in the incinerator near Building HP-2, 2d Marine Division headquarters. This facility meets necessary air quality standards for disposal of these materials.

J. F. MADER
By direction

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
15G/RFG/te
11000/7
27 July 1973

From: Commanding General
To: Commanding General, 2d Marine Division, FMF
(Attn: Assistant Chief of Staff, G-2)

Subj: Professional Services; request for

1. It is requested that the professional services of the Photo Imagery Interpretation Unit be granted in attaining the following work for the Base Forester:

a. Key aerial photographs by flight and number to a base map for cross reference purposes.

b. Establish and fix the principle points and conjugate principle points on each aerial photo print.

2. This work is necessary for completing the Base Forestry Management Plan and it will greatly relieve some of the work load of the Base Forester.

3. Direct liaison between the Base Forester (Phone-2195) and the Commanding Officer of the Photo Imagery Interpretation Unit is requested.

E. A. VOM ORDE, JR.
By Direction

UNITED STATES MARINE CORPS

MARINE CORPS BASE

CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO:

[illegible]

[illegible]

From: Commanding General
To: Commanding General, 2d Marine Division, FMF
(Attn: Assistant Chief of Staff, G-2)

Subj: Professional Services request for

1. It is requested that the professional services of the Naval Intelligence Unit be provided in obtaining the following work for the base [illegible]:

a. For burial [illegible] by flight and return to a base [illegible] for [illegible] purposes.

b. Monitor and [illegible] the [illegible] [illegible] and [illegible] [illegible] [illegible] [illegible] [illegible].

2. This work is necessary for completing the Base Planning [illegible] [illegible] that it will greatly relieve some of the work load [illegible] the base [illegible].

3. Direct liaison [illegible] the Base Provost (Code [illegible]) and the [illegible] officer of the Naval Intelligence Unit is requested.

S. A. VON [illegible], Jr.
[illegible]

11000/7

15A/FHM/lp
11015
29 Nov 1972

From: Commanding General
To: Commanding Officer, 8th Communication Battalion, Force Troops, FMFLant
Via: Commanding General, Force Troops, FMFLant

Subj: Cutting of trees in training areas

Ref: (a) BO P11102.1G

1. On 21 November 1972, this headquarters was informed that a team of personnel from the 8th Communication Battalion was installing overhead wire from the intersection of NC 172/Onslow Beach Road to a wooded area in the vicinity of LZ GOOSE. It was further reported that trees were being cut and underbrush cleared.

2. The site was inspected and it was determined that trees had in fact been cut and bolts fastened through other trees in order to attach the overhead wire. The 8th Communication Battalion was still on the site but was nearly completed when the visual inspection was made.

3. The damage to and cutting of trees was in violation of paragraph 303.3a(1) of reference (a).

4. It is requested that all metal fastenings be removed from trees at the conclusion of the exercise for which the overhead wire was installed and that in the future strict adherence to the provisions of reference (a) be followed.

E. A. VOM ORDE, JR.
By direction

Environ Affairs

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

15A/CFR/lp
11015
17 November 1972

Mr. H. S. Plotkin
Assistant to the State Forester
N. C. State Department of Natural and Economic Resources
Box 27687
Raleigh, North Carolina 27611

Dear Mr. Plotkin:

We shall be pleased to cooperate with you in your "Smoke Management Plan for Forestry Burning Operations" as described in your letter of 7 November.

Personnel we wish to attend your training session are:

Ralph Gurganus, Base Forester
George Willis, Forest Technician

Sincerely,

CARROLL F. RUSSELL
Director, Natural Resources and
Environmental Affairs Division

STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
Box 27687 Raleigh 27611

CHARLES W. BRADSHAW, JR.
SECRETARY

ROBERT W. SCOTT
GOVERNOR

Office of Forest Resources
RALPH C. WINKWORTH, DIRECTOR
TELEPHONE 829-4141

November 7, 1972

Mr. Carol Russell, Post Forester
Camp Lejeune
U.S.M.C.
Jacksonville, N. C.

Dear Mr. Russell:

In light of the emphasis being placed on Air Quality and the importance that Prescribed Burning has for us as Forestry Managers, we have developed a "Smoke Management Plan for Forestry Burning Operations". This plan was developed in cooperation with the National Weather Service.

Two copies of the plan are enclosed for your information. We have completed preliminary evaluation of the plan and believe that it is one that will allow prescribed burning to be carried out with a minimum effect on air quality in populated areas.

To further evaluate the plan and to gather factual data upon which to make desirable modifications, we are asking for your assistance. This will require an evaluation form to be completed on each prescribed burn for no more than one year. Two copies of the evaluation forms are enclosed.

Upon receipt of the names and locations of your personnel who you wish to participate in this joint effort, we will schedule one day training sessions at convenient locations.

Please send the names and addresses of your personnel to:

H. S. Plotkin, Assistant to the State Forester
N. C. State Department of Natural and Economic Resources
Box 27687
Raleigh, North Carolina 27611

We will notify you of the time and place of the training session.

Thank you for your cooperation.

Sincerely,

Hank Plotkin

H. S. Plotkin
Assistant to the State Forester

HSP:lg
Enclosures

STATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
Box 27687 Raleigh 27611

CHARLES W. BRADSHAW, JR.
SECRETARY

ROBERT W. SCOTT
GOVERNOR

Office of Forest Resources
RALPH C. WINKWORTH, DIRECTOR
TELEPHONE 829-4141

September 22, 1972

Mr. Carroll Russell, Forestry Section
Base Maintenance
Camp Lejeune, North Carolina

Dear Carroll:

Based upon a careful evaluation of our fire control situation, we have decided to change our fire training program format this year. We will not conduct the big Kinston Training School for all of our people and representatives from cooperating agencies. Instead, we are going to have training sessions in each district with one or two field exercises on a local basis.

We are most anxious to have the participation of as many men as possible from the industry and cooperating agencies attend these local sessions. They will be set up on a commuting basis to facilitate this. The program format will be designed by our staff working with regional and district people to emphasize actual training needs as we have observed them in the individual districts.

As soon as these plans have been made on the district level, we will let you know. It is very likely, though, that some of these sessions will not be held until on into the winter. For this reason you may not hear from our districts for some time.

Sincerely,

Ralph

Ralph C. Winkworth
Director

DIVISION OF
N. C. FOREST SERVICE
TELEPHONE 829-4141

Forestry

4B/LD/mkc
11015
18 Jul 1972

SECOND ENDORSEMENT on Prin, LejHiScol memo 52G/ECS/sb of 5 Jul 1972

From: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune, North Carolina 28542
To: Superintendent, Camp Lejeune Dependents' Schools

Subj: Removal of trees; request for

1. Returned, approved.

2. Direct liaison with Mr. Russell, Conservation Division, Base Maintenance Department is authorized for the removal of salable timber.

M. D. DRUMMOND, JR.
Acting

Copy to:
BMaintO

Copy To Conservation Div - 7-27-72
GRC

OPNAV 5216/144 (REV. 6-70)
S/N-0107-778-8099
DEPARTMENT OF THE NAVY

Memorandum

52G/ECS/sb
DATE: 5 Jul 1972

FROM: Principal, Lejeune High School

TO: Assistant Chief of Staff, Facilities, Marine Corps Base, Camp Lejeune

VIA: Superintendent, Camp Lejeune Dependents' Schools
SUBJ: Removal of trees; request for

ENCL: (1) Site drawing
(2) Baseball field drawing

1. It is requested that removal of scrub trees and approximately 40 pine trees, six inches in diameter, be made in preparation for laying out a baseball field at Lejeune High School. These trees are located on the perimeter of the field and would have to be removed in order to have a regulation baseball field.

2. Attached hereto, enclosures (1) and (2), are diagrams of the chosen site and proposed baseball field drawing.

E. Conrad Sloan
E. CONRAD SLOAN

52G/PTL/sb
5 Jul 1972

FIRST ENDORSEMENT

From: Superintendent, Camp Lejeune Dependents' Schools
To: Assistant Chief of Staff, Facilities

1. Forwarded, respectfully requesting approval of request to remove trees so that the baseball field can be completed.

P. Talmadge Lancaster
P. TALMADGE LANCASTER

	Act	Info	Initial
BMO		✓	
ABMO		✓	
MaintNCO			
SafetyChmn			
Property			
M&R			
Opns			
Admin			
Tele			
Util			
Consv		✓	
Secretary			

Forestry

10 March 1972

Mr. Berle Garris, Jr.
MOQ 3168
Camp Lejeune, North Carolina 28542

Dear Berle:

I am pleased you have selected the clearing of a foot trail in the Paradise Point area for your Eagle Scout project. Being able to follow a well defined trail through the woods can be a joy to those who love to walk in the woods and look at the wonders of nature. Perhaps other Scouts will be able to expand on your initiation of this very worthwhile endeavor.

Accordingly, it is with pleasure I authorize your project. By copy of this letter your Scout Master, Captain Leonard, and the Base Forester, Mr. Cooper, are advised of my action.

Sincerely yours,

C. A. YOUNGDALE
Major General, U. S. Marine Corps
Commanding General, Marine Corps Base
Camp Lejeune, North Carolina 28542

CAY/bjr
Copy to:
Capt Leonard
✓Mr. Cooper

March 10, 1972

To: Commanding General, Marine Corps Base, Camp Lejeune, N.C.

Atten: A/CS Facilities - Mr. Dooley

From: Berle Garris, Jr., Life Scout, Troop 90

Subj: Community Service Project for Eagle Rank

Dear Sir;

I am a Life Scout who is trying to earn his Eagle Rank. In order to earn Eagle, I must do a Community Service Project which fulfills the following requirements:

1. It must be helpful to my community.

2. It must take a minimum of ten hours.

3. It must be something permanent, that I can come back and see years later.

I would like to request permission to clear a foottrail from the area behind the BOQ, near the Scout Coordinator's office (see attached map) through the woods, to the Brewster Scout Area. I plan to clear the underbrush, mark the trail and place structures across streams or swampy areas. I plan to mark the trail by painting contrasting colored dashes on trees along the trail and, if necessary, place logs on either side. I also plan to place a sign at either end, stating that this is a foottrail only. My materials will be rustic materials that blend in with the environment.

This project has been approved by my scout master, Captain Mike Leonard (home phone 347-4269), and the Base Forrester, Mr. Cooper.

In my opinion, this trail would provide a safer, more pleasant, more scenic route for the scouts to hike on their way to the camping area. It would also make a nice nature trail for anyone else who would like to use it.

This trail is approximately ½ mile long.

Thank you for your consideration of this project.

Berle Garris Jr.

Berle Garris, Jr.
MOQ 3168
Camp Lejeune, N.C. 28542
353-3982

March 10, 1972

To: Commanding General, Marine Corps Base, Camp Pendleton, Ca.

Attn: A/CS, Facilities - Mr. Poole

Through: Earle Garris, Jr., Life Scout, Troop 9

Subj: Community Service Project for Eagle Rank

Dear Sir:

I am a Life Scout who is trying to earn his Eagle Rank. In order to e rn Eagle, I must do a Community Service project which fulfills the following requirements:

1. It must be helpful to my community.

2. It must take a minimum of ten hours.

3. It must be something permanent, that I can come back and see years later.

I would like to request permission to clear a footpath from the area behind the ch , near the Scout Coordinator's office (see attached map) through the woods, to the Breakfast Scout Area. I plan to clear the undergrowth, mark the trail and place stepping stones across streams on swampy areas. I plan to mark the trail by painting contrasting colored dashes on trees along the trail and, if necessary, place logs on either side. I also plan to place a sign at either end, at first that t this is a footpath only. My partners will be Boy Scouts from Troop 9 and in with the environment.

This project is a part approved by my scoutmaster, Joseph Ricardo, Jr. Lions Home Ph-Hobo, and the Base Commander, Camp Pendleton.

In my opinion, this trail would provide a safer, more pleasant, more direct route for the people to hike on their way to the camping area. It would also make a nice nature trail for people who would like to use it.

This trail is approximately mile long.

Thank you for your consideration of this project.

Earle Garris, Jr.

Life Scout

Troop 9

Conservation

MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

23 June 1972

Professor Kerry F. Schell
Department of Forestry
The University of Tennessee
P. O. Box 1071
Knoxville, Tennessee 37901

Dear Professor Schell:

Upon receipt of your letter of June 20, 1972, an inquiry was made of the Base Facilities Officer concerning a suitable place for you to billet thirty-two forestry students on July 31. I was informed that due to this being the peak of the season for Reserve personnel training there will be no available vacant buildings suitable for billeting.

It is regrettable that we cannot comply with your request. At any other season we would be delighted to host you over night and show you something of our forest management program.

Sincerely,

C. F. RUSSELL
Director, Conservation Division
Base Maintenance Department

THE UNIVERSITY OF TENNESSEE
Institute of Agriculture

Department of Forestry
P.O. Box 1071
Knoxville, Tennessee 37901

June 20, 1972

Conservation Director
Base Maintenance Office
Camp Lejeune, North Carolina 28542

Attention Mr. Russell

Dear Sir:

Each year the forestry students at The University of Tennessee have a 10-week summer program. Two of these weeks are spent touring various organizations concerned with and managing natural resources. This year our tour will take us to the Coastal Plain of North Carolina. We have more than sixty students who will be seniors this year, a group much too large to take on a tour. Consequently, we break them down into two groups. Our first group of about thirty-two students will be in your area on about July 31, that is, we would hope to billet with you on July 31. This is obviously one of our biggest problems to find accommodations for a group this large to bunk, and all we do need really is a place to lay out sleeping bags, be protected from insects, and have adequate sanitary facilities. Could you accommodate us at Camp Lejeune?

On Monday, July 31, we would be in the Charleston area visiting the Francis Marion National Forest. We would hope to get away from the Francis Marion at noon or shortly afterwards and then travel on to Camp Lejeune. With your permission we would spend the night in your facilities at Camp Lejeune and then the next morning we could spend some time with you hearing about your natural resource management and policies if you have such a program on the base. We do have to be in the area of Edenton, North Carolina, sometime before lunch.

I hope it is possible for us to visit with you at Camp Lejeune and I look forward to your reply and seeing you next month.

Sincerely,

Kerry F. Schell

Kerry F. Schell
Associate Professor of Forestry

KFS/va

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7411
AUTOVON 690-7411

IN REPLY REFER TO:
07B:RCB:pga
11015/1F
7 March 1972

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: Security clearance for aerial photography for forest resource use and management; request for

1. This command is planning to obtain aerial photography of Marine Corps lands in North Carolina for forest management plan revision and forest and other natural resource use. Interest is in forest lands mainly, but the entire station is to be flown.

2. Modified infrared photography is to be obtained at a 1:12000 scale from an altitude above mean sea level of 6000 feet. The season for this photography is to be from 15 April 1972 to 31 July 1972, during days when flying and photographing conditions are suitable. Current aerial photography is a necessary and useful tool in the management of forest and other natural resources.

3. Official approval to fly the noted aerial photography missions during the period 15 April--31 July this year is requested. If temporary suspension of flights should become necessary for security reasons during this period, this information can be coordinated through this command with the contractor.

Robert C. Beam

ROBERT C. BEAM
By Direction

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

IN REPLY REFER TO
3F/CLB/jlh
11102
15 Mar 1972

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: Security clearance for Aerial Photo for Forest Resource Use and Management

Ref: (a) Yr ltr 07B:RCB:pga over 11015/1F dtd 7 Mar 72

1. The request to fly the aerial photo missions in reference (a) is approved subject to clearance prior to each flight.

2. Firing activity within the boundaries of Camp Lejeune will increase significantly about 15 May and continue until early September. Types of firing include small arms, artillery and aerial bombing. Some types of firing will be conducted almost daily during this period.

3. Clearance for each flight may be obtained by contacting the Training Facilities Office, autovon 279-5803/3920/3554.
Commercial # 919-451 plus above extensions

4. It is suggested that you schedule the flights prior to 15 May if possible to minimize any delay that may arise due to heavy firing activity during the summer months.

J. A. SNYDER
By direction

May fly on weekend; depends on weather of course
Training Facilities Office requests as much advance notice as possible
Lt. Harris suggests contact Staff Sgt. Smith -

SMOKE MANAGEMENT GUIDELINE EVALUATION FORM

COUNTY _____ BLOCK _____ SQUARE _____ DATE _____

1. Reason for Burning _____
2. Total Burn Area _____ (acres)
3. Surface wind speed & direction _____
4. Temperature _____
5. Relative Humidity _____
6. Days since last rain _____ Amount _____ (inches)
7. Cloud cover _____%
8. Estimated Fuel available _____ (tons/acre)
9. Time of Firing _____
10. Total time area burned _____ (hours & minutes)
11. Flame length _____ (feet)
12. Rate of spread _____ (ch/hr)
13. Fuel type _____
14. Age of rough _____ (years)
15. Estimated Fuel Reduction _____(tons/acre)
16. Visibility _____ (before ignition)
17. Visibility _____ (during burning)
18. Smoke plume height _____ (feet)
19. Smoke Dispersal: Good _____ Fair _____ Poor _____

FORECAST

1. Temperature _____
2. Relative Humidity _____
3. Surface wind speed & direction _____
4. Mixing height _____
5. Transport wind speed _____ Direction _____

REMARKS: _____

_____

SMOKE MANAGEMENT PLAN FOR FORESTRY BURNING OPERATIONS

Objective:

To minimize particulate concentrations, smoke, in smoke sensitive areas resulting from prescribed burning activities by defining those days and volumes of vegetative debris that may be burned.

Definitions:

Mixing Height - The top of a layer, from the surface up, in which relatively vigorous mixing occurs - with minimum resistance to up or down motion. The lapse rate is approximately 5.5 degrees per 1000 feet, and sometimes, greater locally and in shallow layers.

Transport Wind Speed and Direction - The mean layer wind of the mixing layer. Used in conjunction with the observed or forecast surface wind, it is a smoke drift indicator.

(The mixing height and transport wind speed taken together are an indicator of the dispersal/diffusion capabilities of the lower atmosphere.)

Smoke Drift Away - Projected smoke plume will not intersect a potential smoke sensitive area downwind from the fire.

Smoke Drift Towards - Projected smoke plume will intersect a potential smoke sensitive downwind from the fire or when wind direction is undetermined due to transport wind speed less than 5 mph.

Stable Layer of Air - A layer of air having a temperature lapse rate of less than dry adiabatic (approximately 5.5 degrees F per 1,000 feet) thereby retarding either upward or downward mixing of smoke.

Tons, Available Fuel - An estimate of the tons of fuel that will be consumed by fire at the given time and place.

Residual Smoke - Smoke produced after the initial fire has passed through the fuel.

Potential Smoke Sensitive Area - Any area where resulting smoke may be dangerous or offensive to concentrations of people, i.e. highway traffic.

Control:

The State Forester is responsible for the development and dissemination of the Smoke Management Plan. He will consult with the National Weather Service and the Office of Water and Air Resources of the D.N. & E. R.

The State Forester is responsible for the coordination of forestry prescribed burning activities on State and Private forest lands.

Administration:

When prescribed burning has been determined to be the appropriate management measure, the person who prepares the prescribed burning plan should consider the location of all potential smoke sensitive areas from the site of the prescribed burn. This information should be included in the burning plan.

The person in charge of the prescribed burn should manage his burning activities so to maintain a satisfactory atmospheric environment in potential smoke sensitive areas.

The person in charge of the prescribed burn under this plan should evaluate downwind conditions prior to beginning operations. When the person determines that visibility in a smoke sensitive area is already seriously reduced or would likely become so with additional burning, or upon notice from the State Forester that air in the entire state thereof is, or would likely become adversely affected by smoke, said person should not begin prescribed burning or, if burning, should terminate burning as soon as practical. Upon termination, any burning already underway should be completed, residual burning should be mopped up as soon as practical and no additional burning should be attempted until approval has been received from the State Forester.

Procedure:

1. The following procedure should be followed in order to evaluate the "Smoke Management Plan for Forestry Burning Operations". This is suggested so to facilitate evaluation of the Plan and further amendments to the Plan, if this is desirable.

2. Check daily fireweather forecast for Smoke Dispersal Category. If out of fire season, request Smoke Dispersal Category from Fireweather forecaster, N.W.S. at Raleigh Durham Airport. Under categories 3, 4, and 5, forecast will include mixing height and transport wind speed and direction. Inversion burnoff time and temperature will also be included under category 3.

Smoke Dispersal Categories For Prescribed Burning

Category #	Recommendations
1	No Burning
2	Mid afternoon burning only with spot forecast desirable
3	Daytime burning only and not until radiation inversion has burned off. Forecast: Time and value of inversion burnoff temperature _____. Afternoon mixing height in feet _____. Afternoon transport wind speed (mph) and direction _____.
4	Burning anytime. Forecast: Afternoon mixing height in feet _____. Afternoon transport wind speed (mph) and direction _____.

Category #	Recommendations
5	Severe fire weather. "unstable" and windy. Excellent smoke dispersal. Burn with caution with spot forecast desirable. Forecast: Afternoon mixing height in feet _____. Afternoon Transport wind speed (mph) and direction _____.
It is understood that burning category will be issued only when forecast minimum afternoon surface relative humidity is less than 60%.	

3. If Smoke Dispersal Category permits prescribed burning, refer to Smoke Management Guide for permissable tonnages to be burned per 16,000 acre block, (25 square mile area as designated on N. C. Forest Service maps).

Smoke Management Guide

I. Smoke drift away from potential smoke sensitive areas.

A. No specific tonnage limitation will be placed on prescribed burning. Burning should be done to best accomplish maximum plume height and to minimize nuisance effect on any segment of the public.

II. Smoke drift toward potential smoke sensitive area.

A. Afternoon mixing height 4,500 feet or less

1. No new prescribed fires will be ignited

B. Afternoon mixing height extends above 4,500 feet, but not over 6,000 feet.

1. Upwind distance less than 10 miles from potential smoke sensitive area. Burning limited to 480 tons per 16,000 acre block on any one day.

2. Upward distance at least 10 miles but less than 30 miles from potential smoke sensitive area. Burning limited to 720 tons per 16,000 acre block on any one day.

3. Upwind distance at least 30 miles, but less than 60 miles from potential smoke sensitive area. Burning limited to 1,440 tons per 16,000 acre block on any one day.

4. Upwind distance at least 60 miles from potential smoke sensitive area. No tonnage restriction.

C. Afternoon mixing height extends over 6,000 feet.

1. Upwind distance less than 10 miles from potential smoke sensitive area. Burning limited to 960 tons per 16,000 acre block on any one day.

2. Upwind distance at least 10 miles but less than 30 miles from potential smoke sensitive area. Burning limited to 1,440 tons per 16,000 acre block on any one day.

3. Upwind distance at least 30 miles, but less than 60 miles from potential smoke sensitive area. Burning limited to 2,880 tons per 16,000 acre block on any one day.

4. Upwind distance at least 60 miles from potential smoke sensitive area. No tonnage restrictions.

D. Smoke above a stable layer over potential smoke sensitive area. Smoke in this group will remain above the potential smoke sensitive areas, separated from it by a stable layer of air.

1. Upwind distance less than 10 miles from potential smoke sensitive area. Burning limited to 960 tons per 16,000 acre block on any one day.

2. Upwind distance at least 10 miles, but less than 30 miles from potential smoke sensitive area. Burning limited to 1,440 tons per 16,000 acre block on any one day.

3. Upwind distance at least 30 miles, but less than 60 miles from potential smoke sensitive area. Burning limited to 2,880 tons per 16,000 acre block on any one day.

4. Upwind distance at least 60 miles from potential smoke sensitive area. No tonnage restriction.

E. Smoke vented into precipitation cloud system. When smoke can be vented to a height above the cloud base from which precipitation is falling, there will be no restriction to burning.

III. Changing conditions.

A. When changing weather conditions adverse to the smoke management objective occur, the plan will be considered to be cancelled or invalid immediately unless aggressive mop-up is initiated promptly after detection of changing weather.

Analysis and Evaluation:

The State Forester will be responsible for an analysis and evaluation of wide burning operations under this plan.

15/CFR/ss
11000
18 January 1972

Base Maintenance Officer

Assistant Chief of Staff, Facilities

Destroyed Facility; comments on

Ref: (a) CO, MCES, MCB, CLNC memo of 10 Jan 1972

1. When prescribed burning was done in the area of the Courthouse Bay Pistol Range on 28 December, the working party secured the fire around the structure described in reference (a) and left the area early in the afternoon in order to prescribe burn another area while the weather was still suitable. Evidently some fire must have rekindled in the short grass near the structure and set it on fire after the working party left the area. This was a temporary type structure and must not have been considered to have a very high value.

2. It has been a practice to prescribe burn this particular part of the Courthouse Bay area for the past ten year, usually at the request of the Courthouse Bay Commander. The reason for burning is to reduce the heavy fuel surrounding the magazines and demolition ranges and prevent a destructive fire during the fire season.

3. It is felt that the Base Forester, who has had many years experience with controlled burning, is an adequate judge as to the amount of supervision needed.

4. Prior to the commencement of burning in the Courthouse Bay Area, the Area Commander's Office was notified by telephone by the Base Forester. If controlled burning is permanently discontinued within the Engineer School Demolition Range Area, there will be a dangerous build up of fuel within five years.

W. F. MILLER
By direction

Forestry

15/WFM/lp
11015
2 Nov 1971

Base Maintenance Officer

Base Public Works Officer

Request by Blythe Brothers Company for locations in which soil material may be placed

Ref: (a) BPubWorksO memo 43-200:MPH:dh of 26 Oct 1971, w/encl (1)

1. The request contained in enclosure (1) to reference (a) is concurred with. Mr. C. F. RUSSELL, Director, Conservation Division, has been appointed as representative of the Base Maintenance Department to frequently inspect the quality and disposition of the soil deposited upon Base property.

E. A. VOM ORDE, JR.

Copy to:
ACofS Fac
DirConsDiv BMaintDept

Conservation

Forestry

15/CFR/lp
11015
12 Oct 1971

Base Maintenance Officer

Director, Quarters and Housing Division

Marking of trees for removal adjacent to certain MOQs

1. The marking of undesirable and dangerous trees adjacent to MOQs in the Paradise Point and Naval Hospital areas has been completed. Listed below is a breakdown by area:

2100 and 2200 blocks	122 trees
2300, 2400, and 2500 blocks	275 trees
2800 and 2900 blocks	81 trees
3000 block	124 trees
3100 block	86 trees
3200 block	61 trees
3300 block	563 trees
Naval Hospital	149 trees
Total	1,461

2. These trees were marked by driving an aluminum nail in the tree at a height of about six feet on the side of the tree away from the street.

E. A. VOM ORDE, JR.

11000/7
Forestry

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380

IN REPLY REFER TO

COA-2-ras
APR 26 1971

From: Commandant of the Marine Corps
To: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina 28542

Subj: Fiscal Year 1971 Annual Increment of Long Range Forest Resources Management Plan

Ref: (a) CG, MCB, CLNC ltr 15A/AKM/ss over 11015 of 25 Mar 1971
(b) CMC ltr COA-2-jmm of 16 Jul 1970

1. The request contained in reference (a), to revise the approved cost of the Fiscal Year 1971 Annual Increment of the subject program is approved.

2. The cost limitation of $84,825 established by reference (b) is herewith increased $10,980 for a new total of $95,805.

3. The actual cost of the proposed work will be accomplished with locally available funds and shall not exceed $95,805 without prior approval of this Headquarters.

W. W. Lewis

W. W. LEWIS
By direction

Cons Div

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

15/CFR/hb
11015
4 May 1971

Professor L. E. Chaiken
School of Forestry
Duke University
Durham, North Carolina 27706

Dear Professor Chaiken:

For the past twenty years, prescribed burning has been very beneficial in the forest management program at Camp Lejeune. Usually seven to eight thousand acres are burned annually, during the winter, for the purposes of hazard reduction, game habitat improvement, and brown spot control. With the growing public concern for air pollution, it is foreseeable that our prescribed burning program could possibly be terminated some time in the future.

It is regrettable that none of our staff could attend the April 14 - 16, 1971, Prescribed Burning Symposium in Charleston. Would it be possible to obtain a copy of the proceedings of this symposium? We believe a copy would be of great benefit to us in explaining our prescribed burning program.

Any information you could furnish us would be greatly appreciated.

Sincerely,

C. F. RUSSELL
Director, Conservation Division

Duke University
SCHOOL OF FORESTRY
DURHAM, NORTH CAROLINA 27706
Telephone (919) 684-2421

May 6, 1971

Mr. C. F. Russell
Director, Conservation Division
Base Maintenance Department
Marine Corps Base
Camp Lejeune, North Carolina 28542

Dear Mr. Russell:

We think that the Prescribed Burning Symposium held recently in Charleston was quite successful; more than 400 were in attendance at the sessions.

It is expected that the Proceedings will be available for distribution in about six months. I am forwarding your request to the appropriate agency; you should receive a copy.

Sincerely,

L. E. Chaiken
Professor of
Forest Management

LEC:nm

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7411
AUTOVON 690-7411

IN REPLY REFER TO:
07B:RCB:cm
11015/1F
1 Dec 1971

From: Commander, Atlantic Division, Naval Facilities Engineering Command

To: Commanding General, Marine Corps Base, Camp Lejeune, North Carolina

Subj: Data collection assistance for 3-P Sampling Procedure for forest management plan revision

Ref: (a) MARCORB CAMLEJ ltr 15/CFR/lp 11015 of 16 Nov 1971

1. Tentative dates for data collection procedure assistance and training requested by reference (a) are week of 16 January 1972 for point sample tree selection and week of 16 April 1972 for dendrometry.

Robert C. Beam

ROBERT C. BEAM
By direction

15/CFR/lp
11015
16 Nov 1971

From: Commanding General
To: Commander, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia 23511

Subj: Modification of Inventory System for Forest Management Plan Revision; recommendation for

Ref: (a) Cdr LantDiv NavFacEngComd ltr 07B:RCB:pmc 11015/1F of 3 Nov 1971

1. This Command concurs with the recommendation for a modification of the inventory system for forest management plan revision by use of the "3-P Sampling Procedure," as presented in reference (a).

2. Assistance in establishing a procedure for collecting necessary data by personnel of your Command is welcomed. Dates of their availability are desired.

E. A. VOM ORDE, JR.
By direction

Blind copy to:
ACofS Fac

DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

TELEPHONE NO.
444-7411
AUTOVON 690-7411

IN REPLY REFER TO:
07B:RCB:pmc
11015/1F

3 NOV 1971

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: Modification of Inventory System for Forest Management Plan Revision; recommendation for

1. The current Forest Management Plan for Camp Lejeune forest lands covers the period 1 July 1964 to 30 June 1974. It should be revised for application and use for the next plan period to begin no later than 1 July 1974.

2. Plan revision involves obtaining and analyzing new forest inventory data and writing compartment and stand prescriptions for use of all the natural resources of the forest. This command has informally proposed and discussed with Base Conservation Director, Carroll F. Russell, and Base Forester, Terence G. Cooper, the adoption of a different method of collecting and analyzing forest inventory data than was used for the current forest management plan. This proposed method was developed by the U. S. Forest Service and is called "3-P Sampling Procedure". It is characterized mainly by the use of fewer sample trees completely and precisely measured and computer analysis of the data with readily available programs and data processing equipment. Sample trees to be measured are selected from existing permanent plots established when current management plans were formulated.

3. Field work on inventory data collection should begin this winter. This command can assist with plot work and tree selection, and coordinate guidance and supervision from the U. S. Forest Service.

4. It is recommended that "3-P Sampling Procedure" be used in connection with forest management plan revision for Camp Lejeune forest land for the next plan period.

Robert C. Beam

ROBERT C. BEAM
Head, Natural Resources Staff
By direction

BASE MAINTENANCE DEPARTMENT
Marine Corps Base
Camp Lejeune, North Carolina 28542

15/CFR/ba
6 February 1970

Mr. John L. Rauschenberger
Division of Forest Pest Control
P. O. Box 5895
Asheville, North Carolina
28803

Dear Mr. Rauschenberger:

Thank you for your invitation to attend the Insect and Disease Conference in Atlanta, Georgia on 17 - 19 February 1970.

I would like very much to attend this conference and I'm sure it would be very beneficial, however, due to the workload and other commitments it would not be practical to attend.

I would appreciate it very much if we could be put on the mailing list for a copy of the proceedings. Thank you.

Sincerely,

CARROLL F. RUSSELL
Director, Conservation Division

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
Southeastern Area, State and Private Forestry
Division of Forest Pest Control
2500 Shreveport Highway
Pineville, Louisiana 71360

June 18, 1969

IN REPLY REFER TO

5200

Mr. Robert C. Beam
Staff Forester
Department of the Navy
Atlantic Division
Naval Facilities Engineering Command
Norfolk, Va 23511

Dear Mr. Beam:

Your inquiry as to the use of cacodylic acid for the control of the southern pine beetle has been forwarded to this office for reply.

Cacodylic acid has shown some promise in causing brood mortality of several species of western bark beetles, particularly the spruce beetle, *Dendroctonus obesus*. The long term effect of cacodylic acid is desiccation of the inner phloem tissue which inhibits brood development.

Some work has been done in the Southeast on the effectiveness of cacodylic acid for control of the southern pine beetle. The southern pine beetle has an extremely short life cycle, approximately thirty days from egg to adult. It is not affected by the long term desiccating effect of cacodylic acid. Instead, brood mortality results from the immediate impact of cacodylic acid which causes a sudden increase in inner phloem moisture content. Indications to date are that only the eggs and early instar larvae are killed and treatment is most effective if trees are injected before they are attacked by the southern pine beetle. Research by the Boyce Thompson Institute in east Texas is oriented toward using synthetic attractants to induce attack in trap trees injected with cacodylic acid. We are currently cooperating with the Texas Forest Service in trying to determine the proportion of trees that need to be injected around an infestation to absorb the resident population and halt its spread.

There is no published data on this work as yet since it is still in its very early stages.

Sincerely,

W. M. Ciesla

W. M. CIESLA, Supervisor
Alexandria Office

MR. COOPER

October 21, 1971

Mr. Donald Young
Texas Forest Service
College Station, Texas 77840

Dear Mr. Young:

Early in 1968, I contacted you regarding a severe Southern Pine Beetle attack we were suffering here at Camp Lejeune and requested any information you might have on genetic resistance of individuals of Pinus Tedea.

Recently, I revisited a 500-acre area that was completely wiped out during this 1968 attack. There was one group of five pines in a one-fifth acre spot and another individual tree about one hundred yards eastward which were not attacked by the beetles, while everything around them had been killed.

It would appear that there are strong possibilities that these six trees could have been from the same genetic heritage and this may have been the reason for being passed up by the beetles.

I do not have facilities for collecting scions from these trees but perhaps through Mr. Bruce Zobel at North Carolina State University you could arrange to have scions collected for testing.

If I can be of any assistance to you in this matter, please feel free to contact me.

Sincerely yours,

TERENCE G. COOPER
Base Forester

07B2:RCB:cm
11015/1F, 2F, 4F
25 September 1970

MEMORANDUM

From: LANTDIV Staff Forester
To: Carroll F. Russell, Conservation Administrator, MCB Camp Lejeune, North Carolina
Terry Cooper, Base Forester, MCB Camp Lejeune, North Carolina
John Mease, Station Forester, MCAS Cherry Point, North Carolina
C. N. Hodgson, Station Forester, NWS Yorktown, Virginia

Subj: Comments on forest inventory and management plan procedures; request for

1. I am beginning to think and plan for revision of forest management plans which are due within the next 2-4 years. Contact is being made with both Northeastern and Southeastern Areas, State and Private Forestry specialists, U. S. Forest Service to get their assistance with this project.

2. It is requested that you try to find time to give some thought to inventory procedures and management plans, and especially the plans you are now working with and list your ideas, thoughts, suggestions, etc., for change or modification when revised plans are made. I am especially interested in your judgments on the minimums essential for military forest management with respect to field data to be collected and reports to be printed. Your feelings on the desirability of having a Navy-wide, or even Defense-wide forest management plan conference within the next year or two will be appreciated also.

3. Please try to give this matter some immediate attention and send me preliminary initial results of your effort by Wednesday, 28 October 1970. Let me know if you have questions.

ROBERT C. BEAM
Staff Forester

15/LMD/ba
21 May 1970

Base Maintenance Officer

Assistant Chief of Staff, Training

Request for government aircraft in the performance of forestry work

Ref: (a) CG, MCB ltr 3E/MGG/lc 3110 of 7 Apr 1970

1. In accordance with reference (a), it is requested a helicopter be provided for use by two Base Maintenance foresters in performance of forestry work in and around Marine Corps Base, Camp Lejeune, North Carolina on the following date.

0900 - 1100 - 9 June 1970

LEROY M. DUFFY

Onslow County

MUTUAL FIRE FIGHTING ASSISTANCE AGREEMENT

This Agreement, made and entered into this 25th day of October, 1972, by and between Onslow County, North Carolina, hereinafter referred to as the County, and the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina, hereinafter referred to as the Commanding General.

WITNESSETH:

WHEREAS, each of the parties hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire protection available in their various establishment, districts, agencies and municipalities in the event of large fires or conflagrations, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire emergency is deemed feasible, and

WHEREAS, it is the policy of the U. S. Marine Corps and of the municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this Agreement to render assistance to one another in accordance with these terms;

THEREFORE BE IT AGREED THAT:

1. Upon request of the designated official of the County, the Commanding General will furnish such fire fighting service, to the extent deemed available at the time of the fire, for the purpose of assisting the County in combating fires occurring within the latter's fire protection district.

a. The following officials of the County are hereby designated to request fire fighting assistance from the Commanding General:

Chairman, Onslow County Board of Commissioners
Fire Chief or Senior Fire Department Duty Officer of all Volunteer Fire Departments under Jurisdiction of Onslow County Board of Commissioners.

b. Requests for assistance will be made to the Camp Lejeune Fire Dispatcher (phone: 451-3004 or 451-5856).

2. Upon request of the Commanding General or his designated representative, the County will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Lejeune Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are designated representatives of the Commanding General to request fire fighting assistance from the County:

Chief of Staff, Marine Corps Base
Fire Chief, Marine Corps Base
Staff Duty Officer, Marine Corps Base.

b. Requests for assistance will be made to the Onslow County Civil Defense Dispatcher (phone: 347-3131).

3. Upon arrival at the scene of the fire, assisting personnel and equipment shall report to the technical head of the Fire Department of the requesting party who shall assume full charge of the operations, but if he

specifically requests a senior officer of a fire department furnishing assistance to assume command, he shall not, by relinquishing command, be relieved of his responsibility for the operation; provided that the apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate responsibility of the senior officer of the fire department rendering assistance.

4. The rendering of assistance under the terms of the Agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting service if, for any reason, assistance cannot be rendered.

5. Services rendered under the terms of this agreement shall be rendered without reimbursement of either party therefor.

6. Each party to this Agreement hereby expressly waives all claims against the other party or parties for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement.

7. The Chief Fire Officer and personnel of the fire department of both parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

8. The technical heads of the fire departments of the parties to this Agreement are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this Agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

9. The terms of this Agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement at Camp Lejeune, North Carolina, on the day and year first above written.

FOR MARINE CORPS BASE

H. L. Wilkerson

H. L. WILKERSON
Brigadier General, U. S. Marine Corps
Commanding, Marine Corps Base
Camp Lejeune, North Carolina

FOR ONSLOW COUNTY:

Ormond Barbee

ORMOND BARBEE
Chairman, Board of Commissioners
Onslow County, North Carolina

Jacksonville

MUTUAL FIRE FIGHTING ASSISTANCE AGREEMENT

This Agreement, made and entered into this 25th day of October, 1972, by and between the City of Jacksonville, North Carolina, hereinafter referred to as the City, and the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina, hereinafter referred to as the Commanding General.

WITNESSETH:

WHEREAS, each of the parties hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire protection available in their various establishment, districts, agencies and municipalities in the event of large fires or conflagrations, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire emergency is deemed feasible, and

WHEREAS, it is the policy of the U. S. Marine Corps and of the municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this Agreement to render assistance to one another in accordance with these terms;

THEREFORE BE IT AGREED THAT:

1. Upon request of the designated official of the City, the Commanding General will furnish such fire fighting service, to the extent deemed available at the time of the fire, for the purpose of assisting the City in combating fires occurring within the latter's fire protection district.

a. The following officials of the City are hereby designated to request fire fighting assistance from the Commanding General:

Mayor of Jacksonville
Jacksonville City Manager
Jacksonville Fire Chief
Senior Fire Department Officer on Duty.

b. Requests for assistance will be made to the Camp Lejeune Fire Dispatcher (phone: 451-3004 or 451-5856).

2. Upon request of the Commanding General or his designated representative, the City will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Lejeune Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are designated representatives of the Commanding General to request fire fighting assistance from the City:

Chief of Staff, Marine Corps Base
Fire Chief, Marine Corps Base
Staff Duty Officer, Marine Corps Base.

b. Requests for assistance will be made to the Jacksonville Fire Department (phone: 347-3131).

3. Upon arrival at the scene of the fire, assisting personnel and equipment shall report to the technical head of the Fire Department of the requesting party who shall assume full charge of the operations, but if he specifically requests a senior officer of a fire department furnishing assistance to assume command, he shall not, by relinquishing command, be relieved of his responsibility for the operation; provided that the apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate responsibility of the senior officer of the fire department rendering assistance.

4. The rendering of assistance under the terms of the agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting service if, for any reason, assistance cannot be rendered.

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6. Each party to this Agreement hereby expressly waives all claims against the other party or parties for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement.

7. The Chief Fire Officer and personnel of the fire department of both parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

8. The technical heads of the fire departments of the parties to this Agreement are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this Agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

9. The terms of this Agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement at Camp Lejeune, North Carolina, on the day and year first above written.

FOR MARINE CORPS BASE

H. L. Wilkerson

H. L. WILKERSON
Brigadier General, U. S. Marine Corps
Commanding, Marine Corps Base
Camp Lejeune, North Carolina

FOR CITY OF JACKSONVILLE

Robert F. Wray

ROBERT F. WRAY
City Manager
City of Jacksonville, North Carolina

Forestry

ANNUAL MEETING OF THE APPALACHIAN SECTION
OF THE SOCIETY OF AMERICAN FORESTERS
CHARLESTON, SOUTH CAROLINA
4 - 5 FEBRUARY 1971

Attended by Carroll F. Russell

The annual meeting of the Appalachian Section of the Society of American Foresters was held at the Francis Marion Hotel, Charleston, South Carolina on 4 and 5 February 1971. The technical session on forest management began at 0900 and continued until 1200. Technical papers were given on "Site Index," "Drainage," "Site Preparation," "Fertilization" and "Planting Stock and Techniques" by renowned experts in these particular fields of forest endeavor. The main theme throughout all the papers was man made effects on the productivity of given sites and what could be done to improve productivity without detrimental effects on the environment.

At the 12:30 luncheon meeting Mr. Ralph Hodges, Vice President and General Manager of the National Forest Products Association was the guest speaker. His address was entitled, "Future Trends in Federal Resource Policy." His thoughts were that there will be more and more governmental concern and regulation in the realm of natural resource especially when their use or abuse has a detrimental effect on the environment.

A business session concerning Society affairs occupied the remainder of the afternoon.

The Friday morning session was divided into two parts. Part I, beginning at 0900 and continuing to 10:30, dealt with Wildlife Management policies and practices. Four different speakers gave various viewpoints of wildlife management practices on small private, large industrial, state and federal owned lands. A theme that seemed to run through all the talks was that we as foresters should be constantly aware of the whole forest environment, not merely striving for maximum tree growth but also seeking a more balanced environment, giving due consideration to all forms of wildlife. Protection of endangered species was especially stressed.

The last hour was given to the clearcutting issue which has stirred some controversy among most foresters and conservationist. It is generally agreed that clearcutting in large blocks is not conducive to optimum wildlife habitat. On the other hand clearcutting is most practical from an economic standpoint. These two situations are still at a standoff and will probably remain so until public sentiment or legislation demands otherwise.

C. F. RUSSELL

Transcribed by

ANNUAL MEETING OF THE APPALACHIAN SECTION OF THE SOCIETY OF AMERICAN FORESTERS CHARLESTON, SOUTH CAROLINA 4 - 5 FEBRUARY 1971

Attended by Carroll L. Russell

The annual meeting of the Appalachian Section of the Society of American Foresters was held at the Francis Marion Hotel, Charleston, South Carolina on 4 and 5 February 1971. The technical session on forest management began at 0800 and continued until 1200. Technical papers were given on "Site Index," "Thinning," "Site Preparation," "Scarification" and "Planting Stock and Techniques" by renowned experts in these particular fields of forest endeavor. The main theme throughout all the papers was man made impacts on the productivity of given sites and what could be done to improve productivity without detrimental effects on the environment.

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The last hour was given to the determining issue which has stirred some controversy among most foresters and conservationists. It is generally agreed that clearcutting in large blocks is not conducive to optimum wildlife habitat, on the other hand clearcutting is most practical from an economic standpoint. These two situations are still at a standoff and will probably remain so until public sentiment or legislation changes otherwise.

C. L. R.

TATE OF NORTH CAROLINA
DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
ox 27687 Raleigh 27611
HARLES W. BRADSHAW, JR.
SECRETARY
ROBERT W. SCOTT
GOVERNOR

Mr. Russell
State

Office of Forest Resources
RALPH C. WINKWORTH, DIRECTOR
TELEPHONE 829-4141

November 20, 1972

Commanding General
Attention: J. F. Mader
Colonel, U. S. Marine Corps
Assistant Chief of Staff, Facilities
United States Marine Corps
Marine Corps Base
Camp Lejeune, North Carolina 28542

Re: 4C/RLB/mkc P-11320/4 dated 31 October 1972

Dear Colonel Mader:

Enclosed is the executed original copy of the Mutual Fire Fighting Assistance Agreement between Marine Corps Base, Camp Lejeune, North Carolina, and the North Carolina Forest Service.

Sincerely,

W. J. Clark
Staff Forester, Plans

WJC:ljk

Enclosure

MUTUAL FIRE FIGHTING ASSISTANCE AGREEMENT

This Agreement, made and entered into this 10th day of November, 1972, by and between the North Carolina Department of Natural and Economic Resources (State Forest Service) hereinafter referred to as the State Forest Service, and the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina, hereinafter referred to as the Commanding General.

WITNESSETH :

WHEREAS, each of the parties hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire protection available in their various establishment, districts, agencies and municipalities in the event of large fires or conflagrations, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire emergency is deemed feasible, and

WHEREAS, it is the policy of the U. S. Marine Corps and of the municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this Agreement to render assistance to one another in accordance with these terms;

THEREFORE BE IT AGREED THAT:

1. Upon request of the designated official of the State Forest Service, the Commanding General will furnish such fire fighting service, to the extent deemed available at the time of the fire, for the purpose of assisting the State Forest Service in combating fires occurring within the latter's fire protection district.

a. The following officials of State Forest Service are hereby designated to request fire fighting assistance from the Commanding General:

State Forest Director
Onslow County Forest Ranger.

b. Requests for assistance will be made to the Camp Lejeune Fire Dispatcher (phone: 451-3004 or 451-5856).

2. Upon request of the Commanding General or his designated representative, the State Forest Service will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Lejeune Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are designated representatives of the Commanding General to request fire fighting assistance from the State Forest Service:

Chief of Staff, Marine Corps Base
Fire Chief, Marine Corps Base
Staff Duty Officer, Marine Corps Base.

b. Requests for assistance will be made to the Onslow County Forest Ranger (phone: 324-3431).

3. Upon arrival at the scene of the fire, assisting personnel and equipment shall report to the technical head of the Fire Department of the requesting party who shall assume full charge of the operations, but if he specifically requests a senior officer of a fire department furnishing assistance to assume command, he shall not, by relinquishing command, be relieved of his responsibility for the operation; provided that the

apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate responsibility of the senior officer of the fire department rendering assistance.

4. The rendering of assistance under the terms of the Agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting service if, for any reason, assistance cannot be rendered.

5. Services rendered under the terms of this Agreement shall be rendered without reimbursement of either party therefor.

6. Each party to this Agreement hereby expressly waives all claims against the other party or parties for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement.

7. The Chief Fire Officer and personnel of the fire department of both parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

8. The technical heads of the fire departments of the parties to this Agreement are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this Agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

9. The terms of this Agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement at Camp Lejeune, North Carolina, on the day and year first above written.

FOR MARINE CORPS BASE

H. L. Wilkerson

H. L. WILKERSON
Brigadier General, U. S. Marine Corps
Commanding, Marine Corps Base
Camp Lejeune, North Carolina

FOR NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES (STATE FOREST SERVICE)

R C Winkworth

RALPH C. WINKWORTH
State Forest Director
North Carolina Department of Natural and Economic Resources (State Forest Service)
Raleigh, North Carolina

Mr. Russell

Federal

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
National Forests in North Carolina
P. O. Box 2750, Asheville, N. C. 28802

5170

November 14, 1972

Commanding General
(Attn: AC/S, Facilities)
Marine Corps Base
Camp Lejeune, N. C. 28542
Attn: Colonel J. F. Mader

Dear Colonel Mader:

Here is your copy of the executed Fire Assistance Agreement.

DAVID G. OATES
Assistant Supervisor - Technical Support

Enclosure

6200-11 (1/69)

MUTUAL FIRE FIGHTING ASSISTANCE AGREEMENT

This Agreement, made and entered into this 13TH day of NOVEMBER, 1972, by and between the U. S. Department of Agriculture (Forestry Service), hereinafter referred to as the Forestry Service, and the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina, hereinafter referred to as the Commanding General.

WITNESSETH:

WHEREAS, each of the parties hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire protection available in their various establishment, districts, agencies and municipalities in the event of large fires or conflagrations, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire emergency is deemed feasible, and

WHEREAS, it is the policy of the U. S. Marine Corps and of the municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this Agreement to render assistance to one another in accordance with these terms;

THEREFORE BE IT AGREED THAT:

1. Upon request of the designated official of the Forestry Service, the Commanding General will furnish such fire fighting service, to the extent deemed available at the time of the fire, for the purpose of assisting the Forestry Service in combating fires occurring within the latter's fire protection district.

a. The following officials of the Forestry Service are hereby designated to request fire fighting assistance from the Commanding General:

District Ranger, Croatan National Forest.

b. Requests for assistance will be made to the Camp Lejeune Fire Dispatcher (phone: 451-3004 or 451-5856).

2. Upon request of the Commanding General or his designated representative, the Forestry Service will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Lejeune Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are designated representatives of the Commanding General to request fire fighting assistance from the Forestry Service:

Chief of Staff, Marine Corps Base
Fire Chief, Marine Corps Base
Staff Duty Officer, Marine Corps Base.

b. Requests for assistance will be made to the District Ranger, Croatan National Forest (phone: 638-5628).

3. Upon arrival at the scene of the fire, assisting personnel and equipment shall report to the technical head of the Fire Department of the requesting party who shall assume full charge of the operations, but if he specifically requests a senior officer of a fire department furnishing assistance to assume command, he shall not, by relinquishing command, be relieved of his responsibility for the operation; provided that the apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate responsibility of the senior officer of the fire department rendering assistance.

4. The rendering of assistance under the terms of the Agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting service if, for any reason, assistance cannot be rendered.

5. Services rendered under the terms of this Agreement shall be rendered without reimbursement of either party therefor.

6. Each party to this Agreement hereby expressly waives all claims against the other party or parties for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement.

7. The Chief Fire Officer and personnel of the fire department of both parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

8. The technical heads of the fire departments of the parties to this Agreement are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this Agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

9. The terms of this Agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement at Camp Lejeune, North Carolina, on the day and year first above written.

FOR MARINE CORPS BASE

H. L. Wilkerson

H. L. WILKERSON
Brigadier General, U. S. Marine Corps
Commanding, Marine Corps Base
Camp Lejeune, North Carolina

FOR U. S. DEPARTMENT OF AGRICULTURE (FORESTRY SERVICE)

Del W. Thorsen

DEL W. THORSEN
Forest Supervisor
U. S. Department of Agriculture (Forestry Service)
Asheville, North Carolina

MUTUAL FIRE FIGHTING ASSISTANCE AGREEMENT

This Agreement, made and entered into this 13TH day of NOVEMBER, 1972, by and between the U. S. Department of Agriculture (Forestry Service), hereinafter referred to as the Forestry Service, and the Commanding General, Marine Corps Base, Camp Lejeune, North Carolina, hereinafter referred to as the Commanding General.

WITNESSETH:

WHEREAS, each of the parties hereto maintains equipment and personnel for the suppression of fires within its own jurisdiction and areas, and

WHEREAS, the parties hereto desire to augment the fire protection available in their various establishment, districts, agencies and municipalities in the event of large fires or conflagrations, and

WHEREAS, the lands or districts of the parties hereto are adjacent or contiguous so that mutual assistance in a fire emergency is deemed feasible, and

WHEREAS, it is the policy of the U. S. Marine Corps and of the municipalities or other districts and of their governing bodies to conclude such agreements wherever practicable, and

WHEREAS, it is mutually deemed sound, desirable, practicable, and beneficial for the parties to this Agreement to render assistance to one another in accordance with these terms;

THEREFORE BE IT AGREED THAT:

1. Upon request of the designated official of the Forestry Service, the Commanding General will furnish such fire fighting service, to the extent deemed available at the time of the fire, for the purpose of assisting the Forestry Service in combating fires occurring within the latter's fire protection district.

a. The following officials of the Forestry Service are hereby designated to request fire fighting assistance from the Commanding General:

District Ranger, Croatan National Forest.

b. Requests for assistance will be made to the Camp Lejeune Fire Dispatcher (phone: 451-3004 or 451-5856).

2. Upon request of the Commanding General or his designated representative, the Forestry Service will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Lejeune Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are designated representatives of the Commanding General to request fire fighting assistance from the Forestry Service:

Chief of Staff, Marine Corps Base
Fire Chief, Marine Corps Base
Staff Duty Officer, Marine Corps Base.

b. Requests for assistance will be made to the District Ranger, Croatan National Forest (phone: 638-5628).

3. Upon arrival at the scene of the fire, assisting personnel and equipment shall report to the technical head of the Fire Department of the requesting party who shall assume full charge of the operations, but if he specifically requests a senior officer of a fire department furnishing assistance to assume command, he shall not, by relinquishing command, be relieved of his responsibility for the operation; provided that the apparatus, personnel and equipment of the agency rendering assistance shall be under the immediate responsibility of the senior officer of the fire department rendering assistance.

4. The rendering of assistance under the terms of the Agreement shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting service if, for any reason, assistance cannot be rendered.

5. Services rendered under the terms of this Agreement shall be rendered without reimbursement of either party therefor.

6. Each party to this Agreement hereby expressly waives all claims against the other party or parties for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this Agreement.

7. The Chief Fire Officer and personnel of the fire department of both parties to this Agreement are invited and encouraged, on a reciprocal basis, to frequently visit each other's activities for guided familiarization tours consistent with local security requirements and, as feasible, to jointly conduct pre-fire planning inspections and drills.

8. The technical heads of the fire departments of the parties to this Agreement are authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this Agreement. Such plans and procedures of operations shall become effective upon ratification by the signatory parties.

9. The terms of this Agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement at Camp Lejeune, North Carolina, on the day and year first above written.

FOR MARINE CORPS BASE

H. L. WILKERSON
Brigadier General, U. S. Marine Corps
Commanding, Marine Corps Base
Camp Lejeune, North Carolina

FOR U. S. DEPARTMENT OF AGRICULTURE (FORESTRY SERVICE)

s/ DWT

DEL W. THORSEN
Forest Supervisor
U. S. Department of Agriculture (Forestry Service)
Asheville, North Carolina

FIRE TOWER WATCH SCHEDULE

8 hour day: 0900 - 1700 Last Sunday in October thru last Saturday in April
1000 - 1800 Last Sunday in April thru last Saturday in October

day	1	2	3
Sunday	Brower - 2 Jenkins - 5	Stroud - 5 Jenkins - 2	Brower - 5 Stroud - 1
Monday	Brower - 2 Jenkins - 5	Stroud - 1 Jenkins - 5	Brower - 2 Stroud - 5
Tuesday	Jenkins - 2 Stroud - 5	Brower - 2 Stroud - 5	Brower - 5 Jenkins - 2
Wednesday	Brower - 2 Stroud - 5	Brower + 5 Jenkins + 2	Stroud - 1 Jenkins - 5
Thursday	Brower - 2 Stroud - 5	Brower - 2 Jenkins - 5	Stroud - 5 Jenkins - 2
Friday	Stroud - 1 Brower - 5 Jenkins - 2	Brower - 2 Stroud - 5 Jenkins - 2	Brower - 5 Stroud - 1 Jenkins - 2
Saturday	Stroud - 1 Jenkins - 5	Brower - 5 Stroud - 1	Brower - 1 Jenkins - 5

NOTE: This schedule may be altered at any time.

Permanent

A MUTUAL AID FIRE FIGHTING ASSISTANCE AGREEMENT BETWEEN THE COMMANDING GENERAL, CAMP LEJEUNE, NORTH CAROLINA AND THE DEPARTMENT OF CONSERVATION AND DEVELOPMENT OF THE STATE OF NORTH CAROLINA.

MAR 19 1959

In order to provide for mutual assistance in combating fires occurring on the Marine Corps Base, Camp Lejeune, North Carolina, or in the fire protection district of the State of North Carolina, The Commanding General, Marine Corps Base, Camp Lejeune, hereinafter referred to as the Commanding General, and the State Forester, of Raleigh, North Carolina, by and for the Department of Conservation and Development of the State of North Carolina, hereinafter referred to as the Department pursuant to the authority contained in Public Law 46, 84th Congress, 27 May 1955, and the General Statutes of North Carolina 113-29, respectively, do hereby agree:

1. That, upon request of the designated official of the Department, the Commanding General will furnish such fire fighting service, to the extent he deems available at the time of the fire, for the purpose of assisting the State Forester in combating fires occurring within the latter's fire protection district.

a. The following officials of the Department are hereby designated to request fire fighting assistance from the Commanding General:

F. H. Claridge, State Forester	R. C. Winkworth, Regional Forester
P. W. Tillman, Asst. State Forester	Don R. Varner, Dist. Forester, New Bern
W. J. Clark, Asst. Forester	T. S. Rhyne, Dist. Forester, Whiteville
J. B. Hubbard, Adm. Forester	S. A. Dowdell, Dist. Forester, Elizabeth City

b. Requests for assistance will be made to the Camp Fire Dispatcher (phone: Camp Lejeune - ~~3333~~). 3004 or 3816

2. That, upon request of the designated representative of the Commanding General, the Department will furnish such fire fighting service, to the extent they deem available at the time of the fire, for the purpose of assisting the Camp Fire Department in combating fires occurring on the Marine Corps Base.

a. The following officials are hereby designated representatives of the Commanding General to request fire fighting assistance from the Department:

The Commanding General, Marine Corps Base

The Chief of Staff, Marine Corps Base

The Fire ~~Marshal~~ Chief, Marine Corps Base

The Staff Duty Officer, Marine Corps Base

b. Requests for assistance will be made by the fire Chief to the ~~Fire Marshal~~ local ~~Ref.~~ rep, Marine Corps Base, Camp Lejeune, North Carolina (Phone ~~[illegible]~~-5856-3009), who will arrange for one of the above 4 officers to call the Department's District Forester at New Bern (Phone 2600) or the State Forester's office at Raleigh (Phone 43611-437) for assistance.

3. That, upon arrival at the scene of a fire, assisting personnel and equipment will report to the senior fire authority present representing the requesting party who will have the complete and sole right and duty to control the operation including but not limited to the assignment to and manner of performance of functions, of the assisting personnel and equipment.

4. That, fire fighting assistance being rendered by either party to the other pursuant to this agreement will be withdrawn during the active combat of a fire only when the above designated officials of the Department or representatives of the Commanding General determine, in their discretions, that such assistance can no longer be made available and only after giving notice, if practical, to the other party to this agreement by a telephone call to the number indicated in paragraphs 1 and 2, above; Provided, that each party will endeavor to give the other as much notice before withdrawing assistance as the former shall deem practical under the circumstances.

5. That service rendered under the terms of this agreement shall be rendered without the reimbursement of either party therefor.

6. That each party hereby expressly waives all claims against the other for compensation for any loss, damage, personal injury, or death occurring in consequence of the performance of this agreement.

7. That the terms of this agreement will abrogate all previous agreements between the parties hereto with respect to the subject matter contained herein and will remain in effect until such time as either of the parties shall notify, in writing, the other party of an intention to rescind the agreement.

Agreed, this the 29th day of February, 1956.

/s/ H. L. Litzenberg

H. L. LITZENBERG
Major General, U. S. Marine Corps,
Commanding, Marine Corps Base,
Camp Lejeune, North Carolina

DEPARTMENT OF CONSERVATION AND DEVELOPMENT,
STATE OF NORTH CAROLINA

By /s/ F. H. Claridge
F. H. Claridge
State Forester

D-4

RECEIVED

HEADQUARTERS
2D MARINE DIVISION, FMF
CAMP LEJEUNE, N. C.

DO 5400.5A
27/amj
28 March 1957

DIVISION ORDER 5400.5A

Subj: Forest Fire Fighting Organization

Ref: (a) Mr. F. H. CLARIDGE, State Forester ltr to CG, MCB, CLNC of 15 Jun 1955
(b) Chap 8. BO 5000.1A (Base Regulations)

Encl: (1) Troop List
(2) Table of Organization
(3) Table of Equipment
(4) List of Individual Equipment and Hand Tools
(5) List of Medical Supplies

1. Purpose. To promulgate instructions on plans for organizing and equipping forest firefighting details as requested by reference (a).

2. Cancellation. DO 5400.5

3. Procedure. A request for assistance will be received by the Fire Marshal, Marine Corps Base from an authorized representative of the State Forestry Office. The Fire Marshal, Marine Corps Base will relay the request to the Second Marine Division (Assistant Chief of Staff G-4 during normal working hours or Division Staff Duty Officer during non-working hours or holidays). The Division Staff Duty Officer will release the detail only with the approval of the Chief of Staff. In the absence of the Chief of Staff he will obtain clearance from Assistant Chief of Staff G-4.

4. Organization.

a. Organization of the fire fighting detail will be in accordance with enclosure (1) and (2). This provides for a Headquarters Section, an Augmentation Section and five (5) teams of three (3) squads each.

b. It will be the responsibility of the detail commander to notify the units furnishing augmentation personnel and equipment of the assembly area and the time that the detail will depart CLNC.

c. Augmentation personnel will report for operational control to the Regiment forming the detail.

d. When it appears likely that forest fire conditions will advance to an EMERGENCY condition, announcement of such will be made by Division Headquarters. At the same time, a Regiment will be desig-

nated from which the fire fighting detail, if required, will be formed. Four (4) hours after designation, the detail must be ready to depart Camp Lejeune.

5. Medical Personnel and Equipment. Medical personnel and equipment will be provided as set forth in enclosure (1), (3) and (5).

6. Equipment.

a. Individual equipment will be in accordance with enclosure (4). The detail commander may use his own discretion on selection of clothing and bedding as is appropriate to the season.

b. Individual fire fighting equipment will be in accordance with enclosure (4) and will be furnished by those units designated.

c. Heavy equipment will be furnished in accordance with enclosure (3). All units required by this order to furnish equipment to the fire fighting detail will insure that this equipment will be made available in the shortest possible time.

d. Special equipment, pump cans, flappers, and maps of the fire are required by the fire fighting detail will be requested from Base Fire Marshal.

e. Transportation will consist of those vehicles set forth in enclosure (3). All transportation will assemble at the assembly area designated by the fire fighting detail commander.

7. Communications.

a. Communications will be established between detail and team headquarters, on the Regimental tactical net, for administrative traffic and secondary control. One PRC-10 with sufficient batteries will be with each team and one with detail headquarters. Radios and radio men will be supplied by the parent unit. Enclosure (1) and (3).

b. Two MRC-30 or 32 vans will be supplied by the Division Communication Section. One will accompany the fire fighting detail, the other will remain at Regimental Headquarters. The Regiment furnishing the fire fighting detail will have the authority to release messages direct from its headquarters to the fire fighting headquarters as long as the message is being transmitted on the Division net. If another net not under Division or Regimental cognizance is to be utilized all outgoing messages must be released through Division headquarters.

c. The Assistant Chief of Staff, G-4 and/or Division Staff Duty Officer will be kept informed on all outgoing messages, the progress of the fire and action being taken by the parent unit as to supply, relief etc,.

d. Two men from the Division Public Information Office will accompany the fire fighting detail on missions off the Camp Lejeune Military Reservation. Enclosures (1) and (2).

8. Supply.

a. The Commanding Officer, 2d Service Regiment will furnish adequate "C" type rations to last two hundred and twenty two (222) men for a period of two days on telephone request by the fire fighting detail commander. A requisition will follow from the detail commander's parent unit as soon as is practicable.

b. The Commanding Officer, 2d Motor Transport Battalion will dispatch a truck to pick up these rations and to form with the convoy at the designated assembly area as soon as they are alerted to furnish the transportation required under enclosure (3).

c. Supplementary rations, coffee, fruit, milk or arrangements to furnish hot rations in the field will be requested by the detail commander from his parent regiment.

d. It will be the responsibility of the fire fighting detail's parent unit to render logistic support as required.

e. Water trailers will be furnished by the parent unit. Enclosure (3).

9. Relief of the Fire Fighting Detail.

a. Fire fighting details will be relieved as an operational unit by the Regiment forming the initial detail. Augmentation relief personnel will report to the designated Regiment as requested by that unit. The relief will report to the Commanding Officer of the fire fighting detail and relief will be effected in the operational area. Equipment and supplies will be turned over to the relieving unit.

b. Procedure for effecting relief and frequency or relief will be set up by the designated Regiment.

10. Operating Instructions.

a. On arrival at the scene of the fire the detail commander will report to the State Forest Ranger in charge of directing fire fighting operations.

b. Employment of this detail will require the close cooperation of all personnel involved. The detail commander will receive instructions from the State Forest Ranger as to the best method for fighting the fire.

c. The detail commander will take no undue risks which might involve loss of life. The responsibility for his troops will govern his decisions as to how they should be employed.

d. The following instructions are applicable for fire fighting details.

(1) Teams will not be permitted to operate at a distance from the detail CP which is outside the range of radio contact.

(2) The fire fighters will maintain visual contact with the other members of their team.

(3) Teams will keep their equipment, when not in use, on the vehicles assigned to that team.

(4) Team members will sleep in a group near the team vehicles.

(5) Canvas covers should be removed from the truck frames while in the fire area to prevent damage from sparks. The canvas will be kept aboard the truck to provide shelter for troops in inclement weather.

(6) Parking of vehicles will be arranged in such a manner as to permit ready exit to prevent being trapped.

e. Smaller fire fighting details will be furnished in accordance with reference (b) or as requested by Marine Corps Base. Any detail involving more than thirty (30) men will have an officer in charge.

BY COMMAND OF BRIGADIER GENERAL VICTORY (ACTING)

T. F. RILEY
Colonel, U. S. Marine Corps
Chief of Staff

DISTRIBUTION: A
D (less Unit Cmdrs) plus
Base Fire Marshal (2)
Mr. F. H. CLARIDGE, N. C. State Forester (5)

OFFICIAL

J. D. SWINSON
Major, U. S. Marine Corps
Division Adjutant

92d Congress
2d Session } COMMITTEE PRINT

AN ANALYSIS OF FORESTRY ISSUES IN THE FIRST SESSION OF THE 92D CONGRESS

(Includes Full Report of Public Lands Subcommittee on "Clearcutting on Federal Timberlands.")

PREPARED BY THE

ENVIRONMENTAL POLICY DIVISION
CONGRESSIONAL RESEARCH SERVICE
LIBRARY OF CONGRESS

AT THE REQUEST OF

HENRY M. JACKSON, *Chairman*

COMMITTEE ON INTERIOR AND
INSULAR AFFAIRS
UNITED STATES SENATE

APRIL 1972

Printed for the use of the Committee on Interior and Insular Affairs

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U.S. GOVERNMENT PRINTING OFFICE
WASHINGTON : 1972

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CONTENTS

APPENDIX—Part 2

Senate Interior Public Lands Subcommittee Report, "Clearcutting on Federal Timberlands"

On March 29, 1972, the Senate Subcommittee on Public Lands to the Committee on Interior and Insular Affairs released its report on "Clearcutting on Federal Timberlands." The 13-page report is based on hearings held by the Subcommittee on April 5, 6, 7, May 7, and June 29, 1971, at which more than 90 witnesses were heard. These were informational hearings scheduled to look into what has become one of the most controversial questions ever to involve the Nation's Federal timberlands.

Because of its importance, the full text of the report is reproduced here.

CLEARCUTTING ON FEDERAL TIMBERLANDS

On April 5, 6, 7, and May 7 and June 29, 1971, the Subcommittee on Public Lands of the Senate Interior and Insular Affairs Committee held hearings on the announced subject of "Management Practices on the Public Lands." These were scheduled as informational hearings to look into what has become one of the most controversial questions ever to involve the nation's Federal timberlands—the practice of clear-cutting. The purpose was to determine whether clear-cutting results in intolerable impacts on the Federal land environment. Because clear-cutting is an established forest management practice for many American tree species, the Committee wanted to determine how it affected the environment. If it developed that there were adverse effects, the Committee wanted to learn how they could be minimized.

Over 90 witnesses were heard; many more submitted statements for the record. Witnesses included members of Congress, environmentalists, state officials, professional foresters and other scientists, and representatives from the timber and housing industries, the Forest Service, the Bureau of Land Management, and the Department of Housing and Urban Development. Foreign trade in timber products in relation to clear-cutting was not investigated.

The Subcommittee's attention was directed primarily to clear-cutting practices on the National Forests, especially on examples in Montana, West Virginia, Wyoming and Alaska. This was done because there had been complaints of the practice on four specific National Forests. Such practices were attacked vehemently by the environmentalists (Part 1, Evans, p. 76–77, 5 recommendations), but clear-cutting as a method was strongly defended by representatives of the timber industry (Part 1, Wyatt, p. 197–208), the Forest Service (Part 3, Cliff, p. 806–934) and representatives of the professional Society of American Foresters (Part 2, Davis and Duffield, p. 556, recommendations; p. 558). Some of those who opposed clear-cutting suggested a permanent moratorium on all clear-cutting on Federal timberlands. Those who defended the practice basically felt that no Congressional action was needed to limit the use of clear-cutting.

Some serious scientific questions were raised, such as possible long range adverse effects of clear-cutting on soil nutrients (Part 1, Curry, p. 157–173). Conversely, other professional forestry witnesses detailed the results of clear-cutting and the scientific research, mainly by the Forest Service through its Nation-wide system of forest experiment stations, demonstrating the need for clear-cutting of certain important tree species if they are to be reforested successfully. (Part 3, Doolittle, p. 931; Tarrant, p. 932; Wellner, p. 927, Nutrients: USFS, p. 1057–1067).

NOTE. Citations in Parenthesis are from the Hearing Record.

Background

Clear-cutting in Perspective:

Timber management is only one aspect of the total management of public land resources. Even-aged timber management, which involves clear-cutting, is one kind of timber management. Even-aged timber management is an acceptable, professionally recognized, and reputable type of timber management that is widely practiced in Europe, North America and Asia for perpetuation of species whose ecological requirements include full sunlight, and where soil, slope and local climate conditions dictate. Most professional foresters testified that clear-cutting as a harvesting practice is the only feasible means of continuing production of forest crops of certain species in certain locations.

Clear-cutting is generally an essential means of achieving even-aged forest management. It can be applied judiciously and with expertise with favorable results, or it can be applied carelessly with unfavorable, even calamitous results.

The wide application of clear-cutting, the devastated appearance of the land that often follows its use, and the resulting public outcries of concern have made it highly appropriate that the committee exercise Congressional oversight in this matter.

The Subcommittee does not question that under appropriate conditions clear-cutting is a necessary, scientific, and professional forestry tool, nor does it believe Congress should legislate professional forestry practices in public land management any more than it does engineering practices for the Bureau of Reclamation or medical practices for the Veterans Administration. However, if these practices lead to basic questions of acceptable environmental impacts, national policy objectives, and conformance with existing statutes, Congress should take a look.

It is often necessary to clearcut timber stands to prevent the spread of forest insects and diseases. Some insects such as the Spruce beetle, Southern Pine beetle, and Mountain Pine beetle infest groups of trees. Successive broods enter adjacent trees and fly to other spots in the Forest. Dwarf-mistletoe, a serious parasite of several coniferous species, spreads from tree to tree by seeds from the parasitic plants. In both cases, and with certain other insects and diseases, timely cutting of the host trees is necessary to remove the infection centers and prevent the spread of the insects or diseases to adjacent stands or regeneration.

In other situations, particularly in older stands devastated by insects, disease, or fire, large numbers of trees are often dead or badly damaged. In order to salvage the useable wood or adequately prepare for regeneration of the damaged stand, it is often necessary to clear-cut.

Clear-cutting looms large in the timber harvest picture. For example, our National Forests yield over ¼ of the annual timber production of the Nation. In the West, of the National Forest area logged last year 30% was clear-cut, with a resulting production of 60 percent of the timber volume harvested in that region. In the East, of the National Forest logged areas 40 percent was clear-cut, yielding 50 percent of the volume there. Clear-cutting has generally proved to be a more expeditious way of getting immediate, high timber yields per acre from

mature and overmature forests than are shelterwood, seed tree, or selection systems, where these systems are viable alterntives.

The Presidential Task Force on Softwood Lumber and Plywood, in June 1970, estimated that the National Forest annual timber harvest could be expanded by 7 billion board feet with appropriate investment in more intensive forest management and with proper planning and financing.

This would mean a 60 percent increase over the volume harvested then. Without continued use of clear-cutting in cases where appropriate the Forest Service could not be responsive to such goals. It could not meet the pressures of a growing population for increased housing, without improving management practices on the national forests.

Thus, clear-cutting emerges as an essential tool, if the Forest Service is to come anywhere near meeting such a startling increase in the timber cut goal. But any dramatic increase in the timber cut could prove disastrous to the National Forests if its achievement actually destroyed their capacity for sustained yield. It would be disastrous to the timber industry as well, because the industry must depend on public lands for a substantial part of their total raw materials supply. Even if adequate funds were available for more expanded forest management systems, the National Forests could not produce enough materials to meet the Nation's housing need. But the National Forests can play their part, through application of more intensive, scientific forestry techniques, including judicious use of clear-cutting, without adverse effects on the current or future environment or without jeopardizing in any way the timber supply for that segment of industry which depends on public lands for a substantial part of its total raw material supply.

In a recently issued publication, "An Analysis of Forestry Issues in the First Session of the 92d Congress," page 4–5, the Congressional Research Service of the Library of Congress cites the background for the increased timber harvest:

> The Forest Service did not come into being until 1905. For almost half a century following its creation, the National Forest System contributed only a fraction of the national lumber output. Nearly 95 percent of the U.S. supply came from privately owned forests. During this time the Forest Service regarded itself as custodian and protector rather than a prime producer.
>
> Then suddenly in the 1940's two things began to happen. The timber industry began to run out of trees. Then came World War II, with its enormous demand for lumber, followed by the biggest building boom in our history.
>
> Abruptly, the price of Douglas Fir on the stump shot upward, and the Forest Service was forced to change quickly from a custodial agency to a production agency. Much of the change was in response to increased Congressional appropriations for more logging roads and more timber sales. At the same time, appropriations for other forest uses were trimmed back.
>
> In 1940 there were only 87,000 miles of road in the National Forests; by 1960 there were 160,000 miles. Timber sales also soared during the same period. USFS timber harvested in 1941 was only 1.5 billion board feet; in 1951 it was 4.4 billion; 8.3 billion in 1961; and 11.5 billion in 1970. Currently, about 30 percent of the total U.S. production comes from the National Forests, and the demand is still increasing.

CONCERN WITH CLEAR-CUTTING

The present concern with clear-cutting on the National Forests has developed largely since 1964. It was probably brought about by: (1) General application of clear-cutting to Eastern hardwoods starting in that year. Before 1964, these forest types were harvested primarily by partial cutting, either the selection or shelterwood systems; (2) The increase in Forest Service allowable cuts over the last decade or

so, and the corresponding accelerated rate of timber sale and harvesting activity. Clear-cutting was applied to 564,000 National Forest acres last year; (3) The manner in which clear-cutting has been applied, in some instances, including examples where there are large blocks or strips of 1,000 acres or more, close spacing of blocks, cutting on steep slopes, large amounts of slash and waste, accelerated erosion, and generally devastated appearances (4) Increasing National attention to the environment and growing environmental consciousness of the general public, particularly the young; (5) Increasing desire of the public to participate in decision-making by public agencies. (6) the alleged failure of the Forest Service in some instances to be responsive to concerns about the environmental impacts of timber harvesting and management practices, coupled with an inability to secure funds from the Congress for giving other forest uses equal attention in accordance with the general guidelines and directions of the Multiple-Use Sustained Yield Act of 1960.

Focal Points

The focal points of controversy appear to be the Bitterroot National Forest in Montana, the Monongahela National Forest in West Virginia, The Tongass in Alaska, and the Bridger in Wyoming.

There are four major analyses relating to practices on the Bitterroot: (1) A Forest Service inhouse task force study, which found lapses in quality of management and over-emphasis on production goals. It offered numerous recommendations; (2) A University of Montana faculty report by a task force headed by the Dean of the Forestry School. Completed in late 1970, it was based on an independent investigation, made a statement of findings, criticized the Forest Service report, recommended against the prevalent practice of clear-cutting and terracing and offered four alternatives; (3) Management Direction for the Bitterroot National Forest Final Environmental Statement, prepared by the Forest Service under Section 102(2)(c) of the National Environmental Policy Act of 1969. Numerous changes in management are directed in this statement; and (4) Testimony of the Chief of the Forest Service before this Committee.

Likewise, there are four major analyses relating to the Monongahela. These are: (1) A 1970 Forest Service study of even-aged management by a special review Committee, which was highly critical in its findings; (2) An August 1970 report of a Forest Management Practices Commission of the West Virginia Legislature. The Forest Service has stated that it is in agreement with most of the Commission's findings; (3) The environmental statement of the Forest Service submitted to the Council on Environmental Quality, in which eight specific changes in management are adopted. Since 1964, the Forest Service has stated repeatedly that even-aged management involving clear-cutting was the basic silvicultural system in this general forest zone. Now this has been changed. Service policy now is to use a variety of methods, with none primary, to keep clear-cuts to 25 acres or less, and to increase distances between cuts along with other measures; and (4) Senator Randolph's testimony before this Committee (Part 1, p. 9–17, Hearing Record).

For the Tongass and Bridger National Forests no comparable series of detailed studies are available. Practices on the Bridger

appear to have prompted S. 1592, introduced by Senator McGee and others, which would establish a Commission to study clear-cutting on Federal lands, and pending its findings, prohibit clear-cutting on the national forests. The Forest Service recently has issued an in-house task force study of forest management in Wyoming in relation to the environment for the Teton, Bridger, Bighorn and Shoshone National Forests. It is implementing the approximately 60 Task Force recommendations.

Committee Views

With the passage of the Multiple Use Sustained Yield Act of 1960 (Public Law 86–517), Congress in plain language laid out the policy "that the national forests are established and shall be administered for outdoor recreation, range, timber watershed, and wildlife and fish purposes." This Act also declares, "the purposes of this Act are declared to be supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in the Act of June 4, 1897 (16 U.S.C. 475)." The latter refers only to water and timber. About timber it calls for management and protection of the National Forests to assure "a continuous supply of timber for the use and necessities of citizens of the United States."

In Sec. 4(a), the Act spells out "Multiple Use" to mean: "The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output."

It is obvious from the extensive testimony received by the Subcommittee on Public Lands during its five days of hearings in Washington on the clear-cutting issue, and three days of subsequent hearings in Georgia, Oregon and New York on proposed timber management legislation, that timber production has become a priority activity in Federal forest land management. Some construe this as out of step with the spirit and intent, if not the letter, of both the Multiple Use-Sustained Yield and the National Environmental Policy Act of 1969.

Some of its critics believe the Forest Service has been relatively slow and somewhat unresponsive to the awakening national concern about the impact of timber harvesting on other environmental values. Others believe the Forest Service has generally been way ahead of the Nation in consideration of the multiple values and benefits of the National Forests, as evidenced by its strong support of the Multiple Use-Sustained Yield Act of 1960.

Recent Forest Service changes in policy (and they have been numerous) were perhaps somewhat defensive responses to pressures of

environmental groups, rather than from energetic Forest Service initiative.

As a consequence, the Service has had difficulty communicating effectively with its critics, and its image has suffered. Its numerous recent actions in the right direction are either unknown, not understood, or brushed aside. They have made little impact.

The hearings on clear-cutting, and the subsequent hearings on timber management proposals, have emphasized for the Subcommittee the extent to which the people of the United States cherish their great forests and timbered watersheds. Not only was extensive testimony received, but thousands of letters from throughout the Nation expressing interest in the future of our forests.

This has emphasized also that government agencies, before making timber management decisions, should increasingly make use of participatory public hearings and exchanges. Much criticism has been leveled at the government for its failure to consult with the interested and affected public before, rather than after, timber management decisions are made. The government needs to become more conscious of increased public interest and concern regarding the future handling of the public's natural resources, and to demonstrate its awareness that it is not the owner but the responsible manager of a public trust.

The Forest Service itself cogently expresses these ideas in its 1971 report on "Forest Management in Wyoming," the results of a study of timber harvest and the environment on the Teton, Bridger, Shoshone and Bighorn National Forests.

The report says:

> The Forest Service must strive to increase public confidence and trust. This will not be achieved by rhetoric, but will require repeated demonstration that declarations for quality in management are actually appearing as physical accomplishment on the ground. Results of effective multiple use planning are beginning to show on the land in some places. The Forest Service should not expect, however, that confidence and trust will be strengthened quickly. Neither should the public expect that new management direction will appear instantly and completely in all activities. It is imperative, however, that open communication be maintained between the Forest Service and the public and that statements and actions of every Forest Service employee meet the highest standards of professional competence.

The Committee fully recognizes that the Forest Service is not a free agent, that it must execute the policy and will of the Administration and the Congress, and that it has been subjected to ever-increasing pressures that have polarized it between the demands of the wilderness enthusiasts and environmentalists on the one hand, and the unrelenting demands for more timber products.

Congress may enact such statutes as the Multiple-Use Sustained Yield Act and the National Environmental Policy Act. But the Forest Service is left helpless, unless Congressional appropriations adequately implement these acts. If appropriations are keyed to timber receipts alone, which has sometimes seemed the criterion in the past, the Service inevitably will gravitate toward those activities which Congress is willing to finance. To its credit the Forest Service has repeatedly made the case for a balanced program to serve the total resource and its owners better, but the funds have not been forthcoming.

From 1954–70, the Forest Service received 66 percent of budget increases requested for timber sale administration, but only 20 percent

of its requested increases for recreation and wildlife, 17 percent for reforestation, and 15 percent for soil and water management. In discussing the fiscal year 1972 budget request, the Chief testified before the Appropriations Committee that:

> The forest Service cannot do the things that the President has directed us to do without more money and people. Our program is out of balance now. Over the past two or three years, we have increased the amount of money that we have for timber sale administration activities, but not by sufficient amounts to do the top quality job needed. We are not adequately financed in the other areas that need it.

Furthermore, Presidential budgets over the years consistently have reflected less than Forest Service needs for non-timber sale items.

To achieve desirable program balance the Forest Service is developing an Environmental Program for the future. The Agency explained that the program is being developed to give a basis for funding a balanced Forest Service program. Its objective is sound environmental management, balance between the commodity programs and non-commodity uses, and balance among all Forest Service activities such as timber production, forage management, outdoor recreation, watershed improvement, fish and wildlife habitat management, State and private cooperative forestry programs and forestry research.

The Committee urges prompt completion of this proposed program and its early submission to Congress. We also believe the Forest Service and the Bureau of Land Management have a primary responsibility to articulate the imbalance in their program efforts, and to take every possible step to right the imbalance, At the same time, this Congress has a duty and a continuing obligation, to monitor forestry programs, to assure existing imbalances are corrected, and to avoid them in the future.

The Council on Environmental Quality established its own study group to evaluate environmental impacts of clear-cutting and to examine silvicultural alternatives. The panel consisted of the deans or faculty members of five of the nation's leading forestry schools. A digest of the deans' reports was prepared by the Congressional Research Service of the Library of Congress and inserted in the Congressional Record of March 1, 1972, by Senator Hatfield.

"All the reports," a summary of the Digest said, "stressed the complexity of the problem, the need for changes in policy, and the need for continued research, but none recommended a complete ban on clear-cutting. Four recommended zoning or classification."

The Committee's attention during the hearings was directed by witnesses primarily to the National Forests. The Committee heard the Director of the Bureau of Land Management (Part 3, Rasmussen, p. 936–946) and learned of a new environmentally-based allowable cut and forest management plan for the BLM timberlands in Western Oregon which was to be implemented on July 1, 1971.

NUTRIENT RECYCLING RESEARCH

Some witnesses expressed concern at the Committee's hearings that current timber harvesting practices are depleting basic soil nutrients at such a rate that we cannot rely on our forest lands to remain productive in perpetuity. Others discounted such assumptions by maintain-

ing they were based on inadequate or non-existent scientific data. Everyone, however, including the Forest Service, agreed that additional research was desirable.

The Committee expects the Secretary of Agriculture to take necessary steps to accelerate all essential forestry research. He should cooperate in this effort with experts in related fields who are not employed by the Forest Service. We view accelerated forestry research as vital to continuous improvement in the management of the National Forests and other Federal forest lands so that they will serve our generation and future Americans better.

HARVESTING GUIDELINES

As indicated in the foregoing the Committee became aware of two major problem areas relating to the selection and conduct of timber harvesting operations on Federal forest lands. First, certain areas have been selected for cutting which should not have been subjected to any activity relating to timber harvesting for any of a number of reasons. These were areas of special scenic values, fragile soils, or other limiting physiographic conditions, areas where adequate regeneration could not be assured, and areas where the costs of special measures to avoid environmental damage or assure regeneration were so high that the activity was imprudent and relatively uneconomic.

The second problem area relates to the manner in which harvesting operations are carried out. This involves selection of a harvesting method, the manner in which a sale is conducted to minimize or avoid environmental injury, and careful supervision and enforcement of environmental conditions in road building and timber sale contracts.

The Committee recognizes that the timber needs of the Nation are increasing at a rapid pace. The National Forests and other Federal forest lands will play a vital role in meeting those needs. Substantial testimony convinced us that measures to assure adequate timber supplies are essential if we are to house our people and serve other wood product needs at reasonable cost. The measures needed to help the Federal forests play their role must include intensified forest management practices such as reforestation, thinning, genetic improvement, salvage of dead timber, as well as the reforestation of nonstocked private forest lands.

Accordingly, the Subcommittee believes it is timely and important to suggest guidelines for the conduct of timber harvesting activity on Federal lands which will assure that the problem areas are eliminated while important national needs for timber are being met. In stating these guidelines the Subcommittee does not presume to substitute its judgment for that of qualified professionals who have on-the-ground knowledge and familiarity with local needs and conditions. However, we believe overall policy direction is essential to make Federal forestry administrators aware of the concern and support of the Congress for stronger consideration of environmental impacts in timber management decisions. We are also aware that the Forest Service and the Bureau of Land Management have taken a number of steps to improve their timber management practices. The guidelines set forth by this Subcommittee should serve to strengthen and supplement these ongoing actions.

Therefore, the Subcommittee believes timber management activities on Federal lands should be subject to the following policy guidelines:

1. Allowable harvest levels

a. Allowable harvest on Federal forest lands should be reviewed and adjusted periodically to assure that the lands on which they are based are available and suitable for timber production under these guidelines.

b. Increases in allowable harvests based on intensified management practices such as reforestation, thinning, tree improvement and the like should be made only upon demonstration that such practices justify increased allowable harvests, and there is assurance that such practices are satisfactorily funded for continuation to completion.

If planned intensive measures are inadequately funded and thus cannot be accomplished on schedule, allowable harvests should be reduced accordingly,"

2. Harvesting limitations

Clear-cutting should not be used as a cutting method on Federal land areas where:

a. Soil, slope or other watershed conditions are fragile and subject to major injury.

b. There is no assurance that the area can be adequately restocked within five years after harvest.

c. Aesthetic values outweigh other considerations.

d. The method is preferred only because it will give the greatest dollar return or the greatest unit output.

3. Clear-cutting should be used only where:

a. It is determined to be silviculturally essential to accomplish the relevant forest management objectives.

b. The size of clear-cut blocks, patches or strips are kept at the minimum necessary to accomplish silvicultural and other multiple-use forest management objectives.

c. A multidisciplinary review has first been made of the potential environmental, biological, aesthetic, engineering and economic impacts on each sale area.

d. Clear-cut blocks, patches or strips are, in all cases, shaped and blended as much as possible with the natural terrain.

4. Timber sale contracts

Federal timber sale contracts should contain requirements to assure that all possible measures are taken to minimize or avoid adverse environmental impacts of timber harvesting, even if such measures result in lower net returns to the Treasury.

In Conclusion

The Subcommittee recommends that the Federal Government take prompt action toward bolstering the confidence and support of the American people for our nation's forestry program. The considerable testimony before the Subcommittee and the studies that have been completed or are now under way illustrate the necessity for establishing a prudent policy for regulating clear-cutting on our forest lands.

It is the hope of the Subcommittee that the guidelines it has set forth will be quickly adopted and implemented by the Executive Branch.

Will Follow Guide-lines

Chief Says Forest Service Will Use Clear-cutting Suggestions

WASHINGTON, March 29.—Chief Edward P. Cliff of the Forest Service, U. S. Department of Agriculture said today the Forest Service will use the guidelines on clear-cutting on Federal timber-lands released this morning by the Senate Public Lands Subcommittee.

Chief Cliff's statement came in response to the disclosure of findings and recommendations of the subcommittee by Senator Frank Church of Idaho, at a press conference in Washington, D. C. Senator Church is chairman of the subcommittee.

Chief Cliff said the guide-lines are technically sound and generally compatible with a series of studies and reports which have been completed by the Forest Service and others, all involving extensive public comment.

He said the Church Subcommittee Report, with particular emphasis on clear-cutting (harvesting all trees from a forest tract to assure new tree growth for certain species), combined with the other studies, has provided a strong base of direction for future forest management.

His statement was supported by Associate Chief John R. McGuire, who is scheduled to succeed Chief Cliff after the latter's April 29 retirement date.

He said the Forest Service has already taken a number of steps outlined in the report and has the capabilities of developing the others so National Forest management will be able to provide the goods and services the Nation needs, while protecting and enhancing the environment of forest and related lands.

Chief Cliff said that the Forest Service will continue its efforts to improve forest management, and assured that the guide-lines will be reflected in directions now being developed for National Forest harvesting practices. Further he said the guide-lines will serve to buttress environmental considerations that must be a part of the Forest Service decision-making process.

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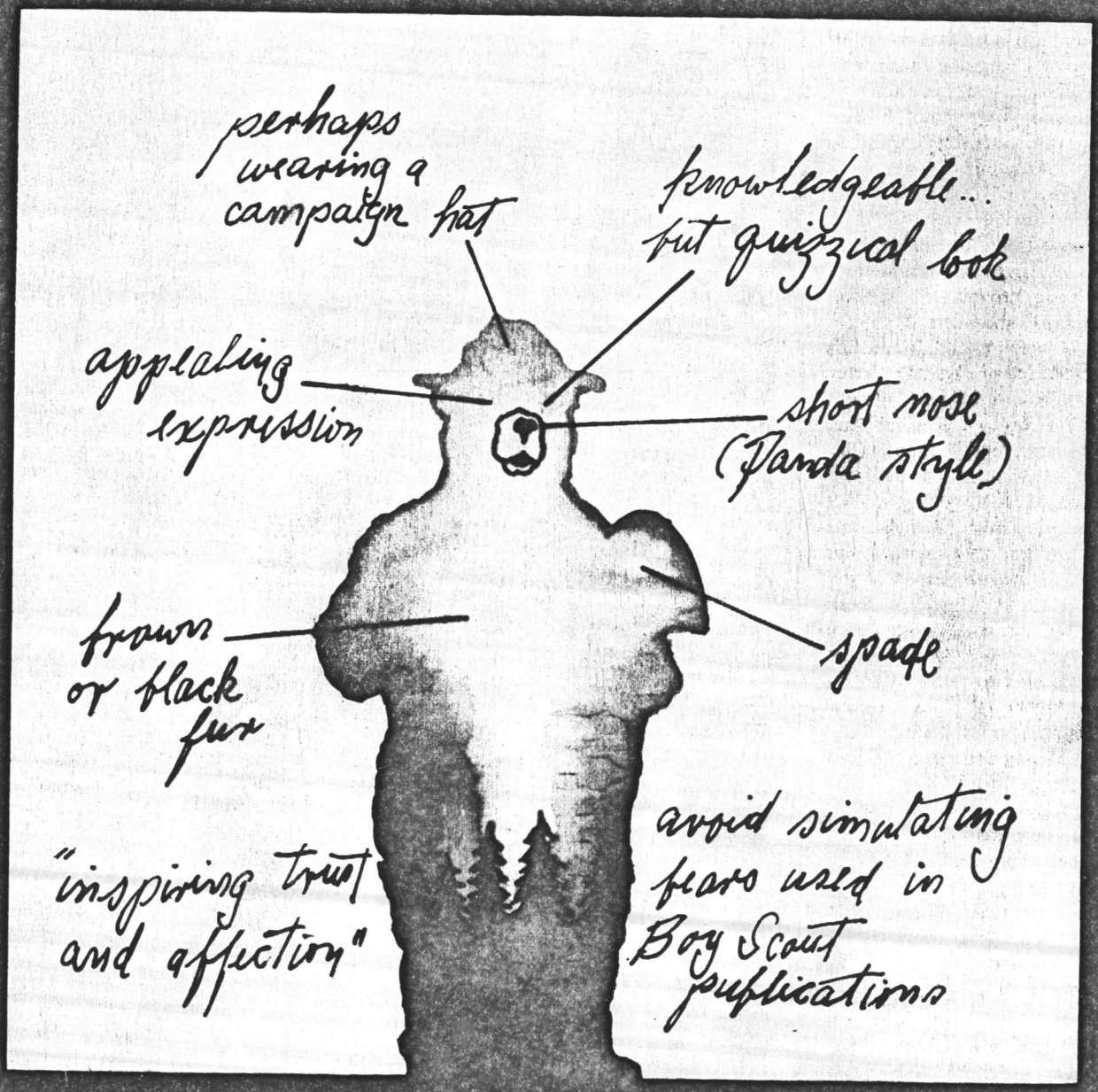
Morley

JUNE 12, 7?
SPORTS ILLUSTRATED

Where There's Smokey There's Fire



Is the Bear just the figment of an advertising man's imagination or is he a worthwhile, as well as a beloved, symbol? That is a burning issue nowadays among some foresters and conservationists by BIL GILBERT

Heretics, iconoclasts and boat rockers are abroad in Smokey land. There are people now touting fire, suggesting that perhaps we do not have enough of it, just as others in these troubled times are speaking out for coyotes, marijuana, fagotry and all manner of other formerly nasty and indefensible things.

Not long ago the *Los Angeles Times* ran a front-page interview with a U.S. Forest Service researcher named Bill Beaufait. Beaufait was working in the Service fire lab in Missoula, Mont. and was an advocate of "controlled burning"—touching off fires in the woods for the good of the forest. "We have to get beyond the bear in our approach to forest fires," Beaufait was quoted as saying. "Smokey the Bear is grade school stuff and grade school is where Smokey belongs."

There probably were no more interested readers of the Beaufait story than a forest fire prevention committee convening that very morning in Los Angeles to give advice and encouragement to Smokey. "We read the story," says Mal Hardy, who was present at the session as the Forest Service's full-time manager of Smokey. "We kidded a little about putting a torch in Smokey's hand." However, Hardy, a media-minded man who is a fierce partisan of his bear and meal ticket, gives the impression that the Beaufait comments did not cause belly laughs. The group did not equip Smokey with a torch and on the spot decided not to award Bill Beaufait a Silver Smokey, an honor for which he had been considered. (The bear statuettes are handed out annually to outstanding fire preventers, just as touchdown clubs hand out MVPs.) "Beaufait has been active in research and makes a good impression on the public," Hardy says, "but that sort of sensationalism does not serve a constructive purpose."

Hardy adds that on several occasions, speaking more or less *ex cathedra*, he himself has had some good words to say about controlled burning. Furthermore, Smokey is not against fire; he is simply for fire prevention, a sophistry that on the surface appears similar to Adolf Hitler explaining that he is not anti-Jewish, just pro-Aryan. Speaking for himself, his staff, several consulting admen and agencies who arrange Smokey's affairs as carefully as they would those of a bar of soap, Hardy says, "We have kicked around the idea of broadening Smokey's message but in this business you do better keeping things simple and direct. If we can assist in publicizing legitimate ecological messages, we will try to help, but Smokey is going to stick to fire prevention, which I still regard as being an extremely valid and useful message."

Growing numbers of scientists and technicians criticize this simplistic approach. The fire freaks tend to be less prominent and media-wise than Smokey and his brain trusters. Nevertheless they are becoming increasingly bold about accusing the good bear and his crowd of promoting silly and false notions. Their argument is that fire is a natural phenomenon in the category of sunlight, heat, cold, precipitation, wind, flood and erosion and as such has a profound influence on the creation and maintenance of terrestrial life and upon the relationships between life forms. Therefore, it is as nonsensical to think of fire as evil and to mount advertising campaigns against it as it would be to create a Blinky the Bat who incessantly squeaked "Beware of light, folks—it blinds."

Among other things, fire is one of the most potent agents of rapid change within our biological system, and change is an absolutely necessary process for the maintenance of that system. The recent and romantic infatuation with ecology has tended to obscure rather than clarify this fundamental fact of natural history.

However necessary and inevitable change may be, individual creatures and species are like hard-core Sierra Clubbers inasmuch as they do not welcome change warmly nor suffer it gladly. The brontosaurus was never hatched who could say, "Ah yes, my time is past. I must depart gracefully or turn myself into a woolly mammoth." All creatures must be forced to accept change, like some incredibly bitter medicine. So fire plays its part.

A grove of oaks, for example, displays like all communities certain greedy,

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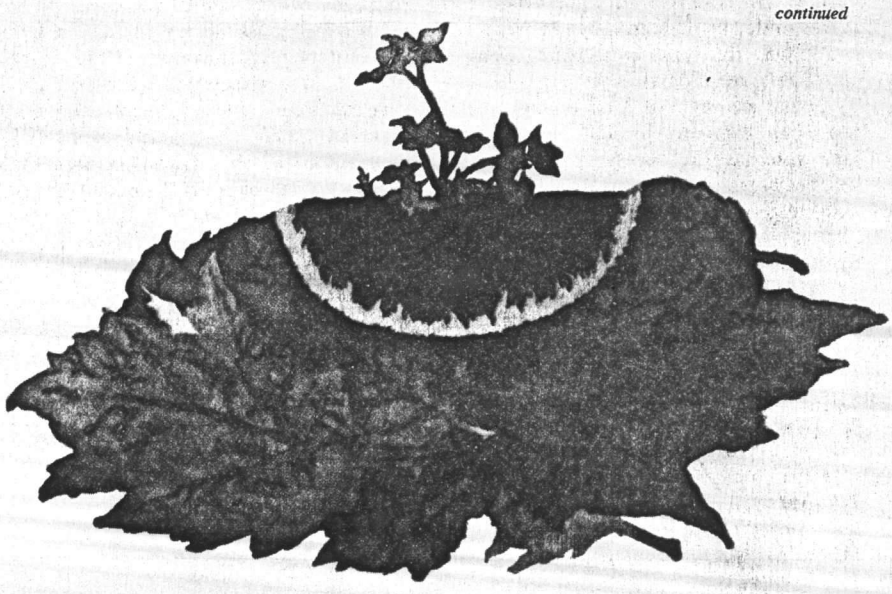

autocratic and change-resistant tendencies. The longer the oaks live, the larger they become and the more they dominate their neighborhood. The foliage shades out lesser species. The oak roots monopolize water and nutrients. The number of animal species dwindles to those that can live in an oak-dominated habitat. In a dry climate the accumulated litter of fallen oak leaves annually grows thicker, making it difficult for young trees to become established. (Among those choked out are oak seedlings. In our system, the overwhelming success of a species—resisting change because of exceptional luck or ability—leads only to suicide.) A good crackling fire will quickly clean out a wood dominated by one type of tree and open the glade to habitation by a far more varied community of plants and animals.

Many biological communities, particularly fragile, short-cycle ones, have come to depend on fire and the rapid changes it effects. Notable among these are the prairies, savannas and woodland glades that man and many other creatures have found particularly attractive. In a natural state, unless regularly burned, grasslands rather quickly disappear, overwhelmed by their own litter and crowded out by scrub and brush. When the grasslands decline, so do many communities of animals, large and small.

A number of species show direct adaptation to fire. There are certain kinds of evergreens that cannot reproduce—whose cones will not open to allow seeds to fall—unless exposed to the intense heat generated by fire. Among these is the Michigan jack pine which, along with a tiny bird, the Kirtland's warbler, played a leading role in one of the odder natural history mysteries of recent times. The warbler has always been rare, and its breeding grounds in the Michigan jack pines of the Huron National Forest were not located until 1908. However, even there the warblers were doing poorly and appeared headed for extinction. Then in the 1950s ornithological researchers discovered that the birds were suffering from lack of fire. For obscure reasons, it seemed they would nest only in groves of 7- to 20-year-old jack pines. Such trees were in short supply since, in approved Smokey fashion, federal foresters had been preventing fire in the area for a quarter of a century. Without fire and 300-degree temperatures, the jack pines did not reproduce and the warblers were soon without the young trees. After considerable soul-searching the Forest Service in the 1960s regularly began burning sections of pine in the Huron forest to accommodate the Kirtland's. The birds now have plenty of nesting sites in the young groves.

That wildfire is a creative, not destructive, force appears to have been obvious to primitive men. Archaeological evidence indicates that early hunting and food-gathering tribes not only survived in but sought out fire-vulnerable areas. More than likely they looked forward to big fires as they did to the rainy season and for much the same reason. After fires, tender, edible plants appeared. Fire kept the browsing lands open for the herbivores on which men preyed. It burned out the underbrush, making it easier for men to travel and hunt. After they came to understand the beneficial effects of fire, men began to practice intentional—if not controlled—burning. It was the custom of many North American Indians to leave their fires burning when they left their camps. They did so not because of savage sloth and indifference, as the whites who met them sometimes claimed, but because they apparently—and rightly—reasoned that fire was good for them and the countryside. The Appalachian Balds, magnificent highland prairies in the Eastern mountains, were created by Indians who generation after generation burned off the knobs for the sake of better hunting and easier living. (The Balds, one of the more scenic parts of the Appalachians, are now in danger of disappearing because of our anti-fire attitudes.)

In California the open glade and grove parklands of the Sierras that so impressed the first mountain men were created by Indian land managers using fire as their tool. John Muir was among the earliest to note that the beauty and vigor of the Sierra flora was a product

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Studying To Play the Part

Like many other rich, famous folks, Smokey is treated respectfully and with an air of high seriousness by his associates. For example, a while back at a National Smokey Bear Workshop, a three-day affair held in Atlantic City, James Ricard, fire prevention officer of the state of New Hampshire, gave a presentation on what is expected of anyone who appears in public, in costume, as Smokey. He suggested a number of things, among them:

"Take time to have Smokey properly introduced. This is a very important job that should be handled by an assistant and paves the way to a good, well-received Smokey program.

"Speak plainly and loud enough to be heard by everyone present. It helps to keep your face well up front in the Smokey head—you will find it easier to speak and breathe. It's a lot cooler, too.

"Oftentimes children and adults want to know your name and where you live. My answer has always been: 'My name is Smokey, I live in the wooded hills.' If they still insist, ask them to drop Smokey a note at your home office.

"Costumes shall not be used unless they are clean, complete and in good repair. The blouse should be dry-cleaned. Pants may be laundered. Costumes should be kept under cover before and after use. Smokey's head tucked under a forest officer's arm is a shocking sight to a child and is not to be tolerated. Clowning, horseplay and wisecracks have no place in a Smokey presentation.

"The use of alcoholic beverages by Smokey is out just before or anytime during an appearance.

"Wear rugged, not shiny, shoes, have a shovel for all outdoor shows. Invite children and others to come to you. Never force yourself as Smokey on children or other timid people. If children or others appear frightened, turn away and talk or shake hands with someone else.

"If at all possible try to have a guide or assistant protect you from the dangers of wires, pits, potholes, cars, scooters, carts, very small children, teen-agers, drunks and practical jokers. The guide can do the most effective job by walking ahead and slightly to the side. This enables Smokey to see where he is going and, at the same time, he is better able to hear any directions the guide may wish to give. The assistant, while in the above-mentioned position, has an excellent view and can protect Smokey from the rear. An all-out effort should be made to prohibit anyone from the area directly behind Smokey, particularly in large crowds.

"Never permit anyone to lead you by the hand or otherwise; Smokey leads—others may guide. Remember that you are Smokey the Forest Fire Prevention Bear—the star always."

of human incendiarism. In 1963 another naturalist, A. Starker Leopold, pointed out the results of protecting this once parklike scene in the Sierra for three-quarters of a century from the "ravages of fire": "Much of the west slope is a dog hair thicket of young pine, white fir, incense cedar and mature brush—a direct function of overprotection from natural ground fires. Within the national parks the thickets are even more impenetrable than elsewhere."

As with so many other primitive (but on the whole sensible) attitudes, man lost his easy tolerance of fire when he became a sedentary property owner. It is something less than a calamity to have a brush hut, which you can replace in a day or two and which you did not plan to live in very long anyway, go up in flames. It is quite another thing to lose a farm or ranch that you have mortgaged your life to possess or a stand of timber from which you hope to make a fortune.

Being a people with an especially high regard for accumulating and protecting property, Americans traditionally have had violent anti-fire feelings. The pioneers' first exposure to forest blazes in the northeast section of the continent helped to formalize these feelings. Ground fires do not ignite easily or regularly in moist northern woods which may go decades, even half a century, without a major fire. During this time dead wood accumulates. Then there comes a dry season or two in which the trash becomes tinder. When the inevitable fire does erupt in a northern forest it is apt to be big, hot and tenacious, cleaning off a lot of country in a short time and allowing the woodland cycle to recommence. All of which is natural but temporarily hard on many creatures, particularly property-owning ones who are concerned with short-term processes. These formidable fires occurred in cycles throughout the history of the northeastern forests but, after the Europeans arrived, they flared with greater frequency. Our cut-and-run logging practice created combustible brush and sawdust far more rapidly than did the forest left to its own devices. Furthermore there were a lot more people living, working, cooking and warming themselves in the woods, and thus a great many new sources of fire.

During the latter half of the 19th century, when the logging boom was at its peak, a series of horrendous fires ripped through Michigan, Wisconsin and Minnesota, some of them burning up a million acres at a time. These holocausts scared the general public, property owners and foresters. In consequence, it became an article of absolute faith within the forestry profession, then being established, that the first job was to fight fire. For a time this no-burn policy seemed not only to make good sense in terms of property protection but also to be biologically justifiable. The dank, damp northern woods were naturally

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Smokey is a very rich bear. Since 1952 he has earned some $900,000 by letting toy and novelty manufacturers use his name and image. Furthermore, he gets a lot of expensive, if intangible, gifts, including in 1971 three billion television impressions and three million lines of free ink in newspapers. In all, it is calculated that Smokey picked up $31,610,000 worth of gratis advertising last year.

It naturally irritates Mal Hardy, Smokey's manager, that despite his star's wealth and undeniable popularity, people like Beaufait, Bowman, the Komareks and many others are bad-mouthing the bear as a simple-minded and funky animal. "Their arguments strike me as being mainly emotional," he says. "Some people are so concerned with so-called scientific expertise that they suffer from tunnel vision. They forget broader and more practical considerations. No matter what the advantages of controlled burning, and I think there are many, even if we do let wildfires burn in certain wilderness areas, the accidental fire that destroys property and wildlife is a disaster. I don't think any practical purpose is served by giving the public the notion that it is good to start fires casually or ignore them once they are burning. Smokey's job is specific, to help prevent fires caused by human ignorance or carelessness. We like to think he has been successful at this."

That the Bear has done what Hardy says he is supposed to do is generally assumed to be true. But a report of the Cooperative Forest Fire Prevention Program, published in April 1971, notes that there were more man-caused fires on Forest Service lands in 1970 than in any year since 1942.

"It is a vicious circle," says Ed Komarek. "We have millions of acres in which small fires should have been burning regularly. But we have suppressed fire for so long that dry, combustible forest fuel has built up to the point where now any fire is apt to be a major one if we don't control it. No matter how they cut that Smokey Bear baloney, the impression it has helped to create is that fire is an enemy of man. I am old-fashioned enough to believe that nobody benefits in the long run from misinformation. Because of the way we live, the way we use and misuse the land, the numbers of us, there are going to be places and times when we have to try to prevent and suppress fire. We should not fool ourselves into thinking that when we do we are protecting anything but our property and immediate self-interest. Fire prevention and control is another form of environmental tinkering, like building dams, poisoning predators and draining wetlands.

"If anything, the past 50 years should have taught us that the less we tinker with nature the better off we are. I see no advantage in permitting a cartoon bear to brainwash us into thinking that a natural process is bad." **END**

adapted to long fire cycles and, as desert plants can endure long droughts, they survived for years with no visible ill effects despite the lack of fire.

But the forests of this country are large and varied, and many, particularly in the South and West, had much different requirements. These woodlands, being drier and containing more fire species, required regular, even annual exposure to small ground fires. Southern woodsmen knew from experience that fire was good for their forests, no matter what the Yankee silviculturists claimed, and following the practice of the Indians they burned their lands each winter. This struck the northern woodsmen who had come to dominate the forestry profession and schools as being another manifestation of the backward and slovenly character of the Southern cracker. When the Forest Service was organized early in this century, the feds sent in modern foresters to occupy the Southern woods and they promptly put a stop to fire of all sorts.

As has been elsewhere noted, the South tends to be a rebellious region in many ways. As early as World War I, a few Southern foresters and timber-company technicians—not more than a dozen men in all—began the study of what is now known as fire ecology. Their motivation was practical and commercial. They knew their forests were going to hell under "scientific" Northern management. They suspected that the no-fire policy was an important factor in the decline and wanted to accumulate proof supporting their suspicions. Eventually they were able to demonstrate among other things that fire, if allowed to burn regularly and naturally, does not kill or maim fire-adapted forests; rather it improves their vigor by thinning and pruning them, and it does not impoverish the soil as was popularly assumed. Actually fire adds to the nutrients. Cattle and many species of wildlife feed better and gain more weight when foraging on burned-over land than on range that is protected from fire.

Finally, the absence of regular fire creates an unnatural fire hazard. If, among species that are adapted to periodic burnings, small fires are prevented, the dry litter accumulates rapidly and makes inevitable a large, hot fire which the Southern and Western forests cannot tolerate and from which they recover slowly or not at all. The longer a forest goes unburned, even in the Northeast, the more devastating the blaze will be when it eventually comes. It is cheaper and safer for men to start fires when and where it suits the land than to wait for them to occur accidentally. So the Southern foresters began using controlled burning as a land management tool.

About the same time another pioneer investigator, Ornithologist H. L. Stoddard, was working in Southern piney woods where, though starting from a different point of interest, he arrived at much the same conclusion. Stoddard came south in 1924 at the request of some estate owners in Florida and Georgia. He was asked to find out what was happening to the bobwhite quail, the shooting of which on big plantations in the area had become a ritualized ceremony on the order of the Japanese tea service. Stoddard worked for seven years on the problem. In 1931 he published a natural history classic, *The Bob White Quail*. He declared the quail was in trouble, principally because fire had been too long and successfully kept out of the woods. Without fire, the glades in which the quail normally foraged and nested had grown up in scrub that was at best a marginal habitat for the birds. Among Stoddard's patrons was Henry Beadel, a New York architect, who became so interested in the ornithologist's work that on his death he left his plantation, Tall Timbers, and an endowment to further the study of fire ecology. Located 20 miles north of Tallahassee, the Tall Timbers Research Station is now directed by two brothers, Ed and Roy Komarek, who began working with Stoddard and Beadel in the 1930s. The station and the Komareks try to spread the good word about fire and to combat misinformation on the subject.

There is a kind of pugnacious missionary zeal about the Komarek brothers and other pioneer fire researchers. This is not surprising since most of them are veterans of bitter professional wars in which, against the opposition of the forestry Establishment, particularly the Forest Service, they have sought to make their findings known and gain respectability for fire ecology. S. W. Greene, one of the most influential of the early fire ecologists, was drummed out of the Department of Agriculture for daring to suggest in the 1920s that fire was

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good for rangeland. Ed Komarek, while engaged in experimental burning on private land, was threatened with arrest by a forester.

The feud spilled over into other land-management agencies. "I got involved not so much because I suddenly became aware of the value of fire, but because I got a chance to see what an unfortunate effect unnecessary fire fighting can have on a natural area," recalls Lyle McDowell, now head of operations for the National Park Service. "In the early '50s I was stationed in the Everglades in charge of fire control in the eastern section of the park. I was under the supervision of an oldtime forester who had spent his life fighting and, I guess, hating fires. In the pine lands of the eastern section our standing orders were, once we got word of a fire, to call for the bulldozers, cut fire lines around it and put it out as soon as we could. I was flying over the area one day and was suddenly struck by how much it was beginning to look like a construction job, mile after mile of bulldozer trails. I got to thinking that if we went on protecting the park against fire in this way much longer we were going to level it.

"I began reading everything I could find on fire ecology and decided fire would probably be good for the pines; that controlled burning at the proper time of year was the cheapest and least objectionable way of managing that land. I took my plan to the forester, who listened until I finished and then said, 'You've read a lot of books, but let me tell you something. As long as I am here nobody is going to start any fires on this land.' That was more or less that."

Time and bureaucratic evolution have vindicated McDowell. Controlled burning is now routinely used in the Everglades and other parks. Today, with McDowell as a prime mover, the park system is considered to be the most progressive land agency as far as fire policy is concerned. In California, where among other things the NPS is charged with caring for the Sequoias, fire is being used to save and restore the groves from the unnatural effects of 40 years of fire suppression.

Even more shockingly, from the standpoint of old fire fighters, the Park Service has gone a step beyond controlled burning and is looking with a kind eye

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on wildfires, allowing them to burn unchecked in some places. The Bureau of Land Management, the largest of all the federal land agencies, is following the same policy in portions of its vast Alaska holdings, where it was concluded that fire fighting the old way was intolerably expensive and that the lack of fire was again having an adverse effect on the moose, deer and bear populations.

In all of this the Forest Service, popularly assumed to be *the* woods and fire outfit, has tended to be a follower, not a leader. The Forest Service now "treats" (uses controlled burning on) about half a million acres a year. Service critics, of which there are many, point out that much of this burning is not done in the interests of better management of living forests, but as a way of disposing of trash that results when sizable tracts are clear cut (totally logged). So far as wildfires are concerned, the Service has yet to admit that it has ever done less than its best to put out a forest fire. Largely because of the agitation of Bill Beaufait and other Missoula researchers, for the first time a few "nonsuppression zones" are being considered on an experimental basis in the Selway-Bitterroot Wilderness Area of northern Idaho.

Various explanations have been advanced by outsiders for the Forest Service's timidity, if not hostility, toward fire. One theory has it that fire fighting has become a big business within the agency. Around 25% of the Service's operating budget is spent on putting out wildfires. Not only do a lot of Service jobs depend on dousing fires, but a lot of suppliers make a lot of money selling equipment for this purpose. These suppliers, it is claimed, tend to influence Service policy as munitions makers are said to influence that of the Pentagon.

Another possible explanation is that the Forest Service, until recently, has considered itself a caretaker of natural resources, not an environmental agency. It is property-conscious and views a forest not as a biological community but as so many board feet of lumber; therefore it regards fire as a thief.

There is a third theory. Never particularly forward about opposing lumbermen, miners and ranchers who use the national forests—in fact often acting as if it were their agent—the Forest Service has tended to use fire as a convenient scapegoat to cover up exploitative atrocities and scandals.

The most common—and on the surface most plausible—explanation is simply that Government foresters have so long and devoutly believed fire to be bad and fought it so hard that recanting the creed now is emotionally, intellectually and administratively difficult. Generally, fire ecologists describe this almost inbred anti-fire bias as the Smokey the Bear attitude.

"Smokey Bear represents . . . a formidable obstacle in the pursuit and public acceptance of demonstrably sound conservation attitudes and policies," wrote Eldon Bowman in *American Forests*. "If static symbols cannot accommodate a growing science perhaps these symbols should be eliminated." Bowman suggested that if Smokey were to be kept around he might better pose for a poster "depicting animals suffering from malnutrition against a background of dense forest tangle with a rib-thin Smokey saying, 'Please, folks—let the fires go. We need them so we can live.'"

Ed Komarek, the Tall Timbers firebrand, is even more outspoken and has suggested that a false-advertising suit against Smokey is possibly in order. "The bear is a creation of the advertising industry and public-relations men," he says. "They have used him for a quarter of a century to conduct an expensive campaign, the effect, if not purpose, of which has been to promote ecological nonsense."

Whether Komarek's analysis of Smokey's impact is true or not, his comments on the bear's genesis are substantially correct. Smokey is a creature of the product conference, not the deep woods. Flack types have always controlled his destiny. Smokey came into being in August 1944 as the brainchild of Young and Rubicam and other ad boys on the War Advertising Council. They were noodling around for a fire-prevention gimmick. (One of their earlier slogans was CARELESS MATCHES AID THE AXIS, which neatly tied together two known evils.) Originally the think tankers wanted to match Bambi against fire, but Walt Disney was sticky about permissions. Then they thought about a squirrel but decided rodents did not have enough zing. Finally they ran a bear up the flagpole and found that it flapped. Artist Albert Staehle, who had

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made his reputation drawing cocker spaniels on *Saturday Evening Post* covers, was commissioned to depict a bear. Implicit instructions were given as to the kind of bear. He was, according to Forest Service annals, to be a characterization with a short nose (Panda style), brown or black fur, with an appealing expression, a knowledgeable but quizzical look, perhaps wearing a campaign hat, which at the time typified the outdoors and the woods. The artist was warned to avoid simulating bears used in Boy Scout publications.

The resulting creation served for several years, but was not judged to be exactly the right bear. In 1948 the awkward, clumsy, almost comical Staehle bear was given a facelifting by Rudolph Wendelin, a Forest Service artist, and emerged as a "more mature characterization, inspiring trust and affection." In 1950 a bear cub was found in the wake of a New Mexico forest fire and as a reward was brought to Washington, caged up in the National Zoo as the "living" Smokey. In 1952 the Smokey symbol was in effect copyrighted by an act of Congress. Since then Smokey has become probably the world's best-known bear, certainly no worse than fourth behind Goldilocks' reluctant hosts.

In 1968 a 192-page report, "Public Image of and Attitudes Toward Smokey the Bear and Forest Fires," the result of a poll by a Los Angeles opinion-surveying firm, was released by the Forest Service. Among many other things, it disclosed that Smokey was the favorite symbol of 40% of the grade school children interviewed, Pinocchio being a distant second with 27% and the Jolly Green Giant trailing badly with 6%. In teen-age circles Smokey was judged against a different set of opponents but still came out on top, drubbing the Quaker Oats man 34-26. Oddly, in the adult class Smokey's margin was even greater, though he appears to have won by default. Among the big people, 30% liked Smokey the most; trailing far behind, symbol-wise, was the Bell System, Quaker Oats man, TB Seal, Jolly Green Giant and Gold Medallion Homes, all of which polled between a disgraceful 3 and 5%. In retrospect it seems unfortunate that the pollsters did not match Smokey, at least in the open class, against some of his peers, say the Chicago Bears or even the Playboy Bunny.

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Three-P Sampling And Dendrometry For Better Timber Estimating

By CLEMENT MESAVAGE

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A new system for estimating the volume of standing timber is being tested in several locations in the South. Conceived by L. R. Grosenbaugh in 1963 (*3*)*, it has been tried successfully by the U. S. Bureau of Land Management for appraisal and sale of standing timber in the West. Tests by the U. S. Forest Service indicate that it will be applicable to Eastern forest species and timber types. The system exploits new field instruments, electronic data processing, and a new sampling concept in a manner that will eventually revolutionize the way we cruise and appraise standing timber.

Application of this system for measuring and appraising a timber sale requires a prediction of the volume of each tree as it is marked. This prediction, which may be nothing more than an educated guess, determines whether the tree will qualify as a sample tree that will be measured in detail with the aid of an optical dendrometer. The dendrometer provides estimates of outside-bark stem diameters at enough points to define taper and product by grade and defect classes.

The field tally thus consists of a list of trees for which predictions only were obtained, and detailed data for trees that qualified for dendrometer speed computers to convert dendrom-measurement. These data are processed by a program written for higheter readings to volume estimates in terms of any desired unit of measurement. The program then calculates a blow-up factor for each sample tree, expands the sample-tree volume to the total population, and computes the sampling error. In addition, it can be extended to translate information on mill recovery and unit prices for product out-turn and dollar realization, by species and quality-defect classes.

Development Of The System

The impracticability of measuring volume in standing trees has always forced use of crutches such as volume tables. These can never be wholly satisfactory, because the trees on which they are based are almost never like those to be cruised; they also bind the cruise with inflexible units of measurement, scaling practices, and standards of utilization. Efforts to get around these disadvantages have ranged from searches for mathematical equations that would fit the form of any tree to devices that would permit upper-stem measurements without climbing. The most promising efforts have been in the development of dendrometers. To be effective, dendrometers must be portable, incorporate magnifying optics, and, because of stem sway, provide coincident split-images.

Grosenbaugh found only one type —a modified rangefinder—that met these specifications, but even it could not be used as a practical field dendrometer. Conversion of instrument readings to linear measurements by table look-up was simply too time-consuming and prone to error.

To circumvent this difficulty he worked out the mathematics and programmed the intricate calculations on high-speed computers (*2*). The result was a major break-through: the instrument not only eliminated biases in estimating but also extended computer capabilities for getting more information about a tract of timber than would be feasible by conventional techniques (*4*).

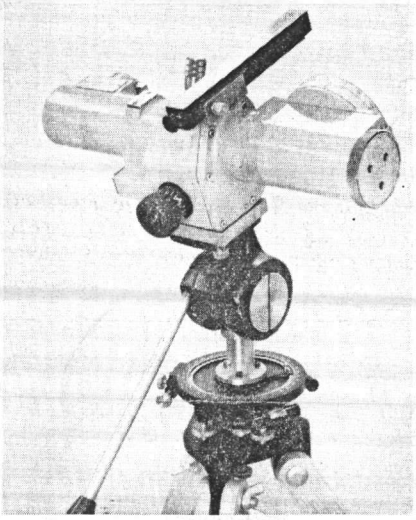

FIGURE 1.—*Barr and Stroud dendrometer, Model FP9, manufactured by Messrs. Barr and Stroud, Anniesland, Glasgow, Scotland.*

Three-P Sampling

Then, for good measure, Grosenbaugh conceived and incorporated a new type of variable-probability sampling that gives unusually small errors —and hence reduces the number of sample trees. This increased sampling efficiency is obtained by using ocular estimates, or quickie volume tables, to select the samples in a way that weights sampling in favor of the larger trees. For example, suppose we have 20 cards numbered from one to twenty. If we stipulate that the predicted volume of a sample tree must be equal to or greater than the number on a card subsequently drawn at random, a tree with a prediction of 1 would have only 1 chance in 20 to qualify, whereas one with a predicted volume of 15 would have 15 chances in 20. The probability of selection is thus seen to be proportional to prediction, or "Three-P" sampling.

Generation of a list of random Three-P numbers for a given sampling job involves problems that required the preparation of a special computer program (*5*). The program requires estimates of "K" and "Z", K generally being the volume of the largest tree to be sampled, and Z a number that, in conjunction with K, controls the number of samples. One sample tree will be drawn, on the average, for each aggregate of predictions totaling (K+Z).

The expected number of samples that will be drawn from a population of trees is therefore the sum of the predictions for all trees in the sale, divided by (K+Z). Crude estimates of total volume must be formulated in advance so that (K+Z) can be made appropriate to the minimum number of samples desired. The list of random numbers furnished by the computer is generally made equal to the estimated total number of trees in the sale.

With trained cruisers, 100 or so sample trees are usually enough for an accuracy of 1.5 per cent, the current

*Italic figures in parentheses refer to literature cited at the end of the article.

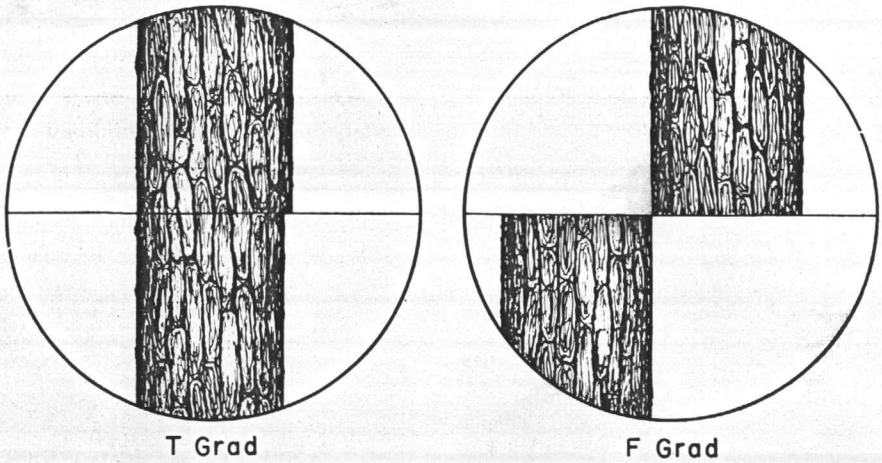

FIGURE 2.—*Dendrometer image alignments.*

standard sought on government sales. Beginners will need about 200 sample trees for this accuracy.

Expansion Of Sample Data

In addition to the efficiency derived from Three-P sampling, the system benefits from the manner in which the sample information is expanded to the total. The procedure consists essentially of comparing the measured and predicted volumes of the samples, and adjusting accordingly the total predictions for all trees. The expansions are made separately for each sample tree, then totaled. The blow-up factor for any given sample tree is obtained by dividing the sum of the predictions of all trees by the product of the total number of sample trees and the prediction for that particular sample tree. For example, suppose that predictions for a 10,000-tree timber sale total 1,200,000 board feet, that 125 trees are drawn as Three-P samples, and that the predicted volume for one of these samples is 250 board feet. The blow-up factor for that particular sample tree is computed to be:

$$\frac{1{,}200{,}000}{125 \times 250} = 38.40$$

If the actual volume of that sample tree as measured with the dendrometer is 275 board feet, its expanded total would be 275 x 38.40 = 10,560 board feet. This process is repeated for each sample tree, and the expansions are added to arrive at a total estimate.

The method takes advantage of ocular estimates that can be made cheaply for all trees, but utilizes these estimates in a way that does not bias the expanded totals. The important thing about the predictions is consistency. A cruiser who is erratic in his predictions but averages out "on the button" will cause a greater error in the final estimate than will a cruiser who is severely but more uniformly biased one way or the other.

The Barr And Stroud Dendrometer

Several varieties of optical dendrometers are being developed. So far the most practicable field-going instrument is that manufactured by Barr and Stroud in Scotland. Modified from a short-base military rangefinder, it has magnifying optics. Figure 1 shows an early model adapted for use with a tripod, which is essential for accurate measurements. A new version, Model FP12, is factory-equipped with a tripod, and has eyepiece and scale modifications. By turning drums, the operator can orient the image so that the left side of the tree is in a continuous line, or shift it so that the right side of the tree is in line with the left (fig. 2). Scale calibrations on the drums show the degree of rotation in each of these image positions, and are called T Grad and F Grad respectively. The computer converts T Grad to slant distance from dendrometer to tree; it derives stem diameter from both T Grad and F Grad. Approximations may also be obtained from tables or charts (*6*).

The vertical angle of a line of sight to any point on a tree is determined by adjusting a spirit level and reading a sine scale on a micrometer head. The computer program converts this reading to height above the previous point of measurement, beginning at the stump. The field notes thus include three entries of instrument readings—T Grad, F Grad, and sine—for diameter and height estimates at any visible cross-section of a tree stem. Sightings are usually made to points that will define stem taper, but can also be used to delineate logs by grade and defect classes.

Figure 3 shows examples of detailed data furnished by the computer for two trees. The field data, labeled T Grad, F Grad, and Sin elv, are in the last three columns. Each of the points of measurement on tree No. 21 was visible from the instrument set-up, as evidenced by a complete series of instrument readings. For tree No. 44, however, the lines of sight were obscured to both the lower and upper portion of the tree. To get around this, a fictitious T Grad of -999 was recorded to signal that the first two F Grads were tape measurements of diameter, starting at the stump, and that the sine column was the length in feet upwards to the next point of measurement. The computer handled these two determinations accordingly, then proceeded as it did for tree No. 21. An F Grad of -999 at the top signaled that the top log was not visible from the instrument set-up, and this activated a sub-routine (from a choice of sub-routines) that resulted in a machine volume estimate for the unseen portion, to a choice of minimum tops.

The machine program can similarly process measurements made entirely

DETAILED LOG AND/OR TREE REPORT

TREE/ NO./	VOLUME / CU.FT.	SURFACE/ SQ.FT.	LENGTH/ FEET	D.I.B./ INCHES	LOG/RANGE/ CODE	FEET/	TGRADS	FGRADS	SINELV
	64.7	204.6	49.1	14.1	UU	0.	48.0	48.0	0.6758
	18.9	50.8	10.9	17.6	CA	84.6	48.0	86.3	0.6758
	47.8	121.3	24.5	18.1	CC	77.9	46.4	89.0	0.5937
	17.5	39.1	7.0	19.7	CC	66.5	42.7	96.7	0.3275
	33.4	64.2	9.8	23.0	BB	63.4	41.4	105.7	0.2335
	35.1	54.8	6.8	26.8	BB	63.4	41.4	114.3	0.0783
	16.9	21.2	2.1	34.2	AA	61.4	40.5	133.9	-0.0305
	0.	0.	0.	41.7	SS	61.0	40.3	156.0	-0.0656
21	234.3	556.0	110.3	37.2=D,F=		0.987,	25,	3.9	1*SUSF 1
	10.0	44.5	16.0	8.4	UU	0.	-0.	-99.9	-0.
	16.2	56.8	15.9	12.9	CC	66.5	42.7	78.5	0.6675
	21.1	65.3	16.1	14.4	CC	57.2	38.3	84.8	0.4980
	20.9	57.5	12.6	16.4	BB	50.5	33.6	93.4	0.2450
	7.1	17.6	3.5	18.4	XX	-0.0	-0.	20.3	12.6000
	0.	0.	0.	20.0	SS	-0.0	-99.9	22.1	3.5000
44	75.2	241.8	64.1	20.3=D,F=		4.933,	5,	1.9	1*AMUL21

FIGURE 3.—*Examples of machine data output, showing detailed report of log and tree measurements, and computations.*

CLASSGR.	SAWKERF CU.FT.IB.	SHORTS(TRIM) CU.FT.IB.	SLABS-EDGES CU.FT.IB.	UNUSABLE LBR. CU.FT.IB.	USABLE LBR. BD.FT.	LBR.VALUE DOLLARS
D.FIRAA	9.95	0.69	4.74	0.	412.59	68.77
D.FIRAB	9.24	0.58	4.21	3.27	346.53	54.55
D.FIRAC	46.65	2.61	21.47	31.36	1548.56	226.40
D.FIRBA	6.73	0.45	4.09	0.	269.10	39.52
D.FIRBB	174.03	10.66	90.75	60.57	6414.24	887.64
D.FIRBC	100.30	5.53	52.24	66.34	3275.28	417.58
D.FIRCA	22.02	1.44	14.59	0.	866.97	92.85
D.FIRCB	40.87	2.43	25.68	13.81	1462.86	152.72
D.FIRCC	144.84	7.22	126.60	86.63	4270.19	429.27
D.FIRUU	21.20	1.22	19.88	3.08	735.89	78.48
D.FIRXX	0.	0.	0.	213.30	0.	0.
SUBTOT	575.83	32.83	364.25	478.36	19602.21	2447.77
P.PINAA	24.47	1.31	31.85	0.	790.32	129.94
P.PINAB	107.84	5.78	106.76	32.77	3471.10	525.51
P.PINAC	57.41	2.28	89.50	27.30	1339.50	156.34
P.PINBA	293.37	18.20	249.13	0.	10947.07	1585.97
P.PINBB	132.97	6.86	147.87	38.88	4118.32	526.33
P.PINBC	16.29	0.82	13.43	9.89	487.44	58.26
P.PINCA	94.62	6.07	69.35	0.	3652.66	386.21
P.PINCB	168.33	9.37	145.08	53.18	5633.03	552.98
P.PINCC	171.66	7.19	241.81	86.24	4236.57	330.33
P.PINUU	21.10	0.97	29.71	6.81	580.79	61.80
P.PINXX	0.	0.	0.	284.36	0.	0.
SUBTOT	1088.05	58.85	1124.48	539.43	35256.81	4313.66
TOTALS	1663.88	91.68	1488.73	1017.79	54859.03	6761.43

FIGURE 4.—*Samples of an expanded timber estimate showing dollar value and product yield by species and grade.*

by tape, or with other types of optical dendrometers.

The computer then converted the field data in terms of inside-bark stem diameters and log length. Correction for bark thickness was based on bark measurements at dbh. It also printed out the log grade as coded in the field, and computed the square-foot surface area and cubic-foot volume for each log.

Utility Of Primary Units

Computations of volume, surface area, and length provide primary units that can be totaled without regard to log size, then restated by formulas (*1*) in terms of other units of measurement, such as board feet, weight, or square feet of plywood. Figure 4 shows how primary units can be expressed as cubic-foot volume of sawdust, trim, slabs and edgings, board feet of usable lumber, and dollar value of lumber. Individual lumber items or grades might have been determined just as easily.

The Grosenbaugh system is thus seen to be a powerful program, probably the most important advance yet conceived in the art of timber cruising. Its many advantages include:

1. Reduction of field and office work, compared with conventional methods.
2. Practical assessment of diverse products and stem grades.
3. Realistic use of volume tables, and valid exploitation of old-fashioned cruiser skills.

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OPTIONAL FORM NO. 10

UNITED STATES GOVERNMENT

Memorandum

Forestry

TO : Base Forester

DATE: 12 Jan. 64

FROM : BMO

SUBJECT:

1. We got our way on the cutting of hardwood saw timber.

2. Pilot gave me a call regarding our controlled burning program.

3. There is a Conservation of Natural Resources Committee meeting at 1330 14 Jan. —

TMF —