Bulletin 469 May 1975

Profiling the Woods-burner:

An Analysis of Fire Trespass Violations in the South's National Forests

AGRICULTURAL EXPERIMENT STATION/AUBURN UNIVERSITY
R. Dennis Rouse, Director Auburn, Alabama

CONTENTS

FIRST PRINTING 3M, MAY 1975

Auburn University is an equal opportunity employer

ACKNOWLEDGMENT

As in any research undertaking, the final report represents the culmination of a lengthy period of work during which a number of persons made special contributions. In the present instance, this was particularly true for one individual who played a key role in the early stages of project development and throughout the data retrieval stage. Mr. Howard McLeskey, an instructor at Alexander City Junior College, served as the Research Conductor on this project during the summer of 1972. While active on the project, he visited with personnel of the USDA Forest Service in each participating state and abstracted pertinent information from Fire Trespass case records. The authors are greatly indebted to Mr. McLeskey for his input into this research.

Appreciation is also extended to the USDA Forest Service personnel who worked with the research conductor on his state visits. Not everyone who assisted can be recognized, but the authors would be remiss by not mentioning the following persons: Alabama, Don Blackburn and James Crowell; Georgia, Paul Underwood; Louisiana, John Boren; Mississippi, Bobby Dees; South Carolina, Stanley Frye; and Tennessee, Harold Ackerman.

Each of these men gave of their time to help acclimate the research conductor to the forest fire situation in their state and assisted in locating the necessary case records.

Finally, we wish to note the facilitation for this research provided by the Department of Agricultural Economics and Rural Sociology and the Alabama Agricultural Experiment Station.

COOPERATION

The authors wish to express their special thanks for providing research funding under Cooperative Research Agreement No. 19-125 to: the Southern Forest Experiment Station, USDA Forest Service, and for providing funding for this publication, the Agricultural Experiment Station, Auburn University.

Profiling the Woods-burner:

An Analysis of Fire Trepass Violations in the South's National Forests

J. E. DUNKELBERGER and A. T. ALTOBELLIS*

THE SOUTHEASTERN UNITED STATES,[1] on the average, has 65 percent of all the nation's forest fires *(6)*. The USDA Forest Service and state protection agencies categorize reported wildfires by the following general causes: lightning, campfire, smoking, debris burning, incendiarism, equipment use, railroads, children, and miscellaneous. Of these, incendiarism is the leading cause of wildfires in the South, with Alabama, Louisiana, and Mississippi having the largest regional concentrations of incendiary activity.[2] The felonious woods-burner constitutes a high priority category of fire setting individuals.

PREVIOUS RESEARCH

As early as 1938, social scientists were engaged by the USDA Forest Service to conduct research into the underlying reasons for man-caused forest fires. This research focused on the sociocultural environment within which acts of woods burning take place *(6)*. The purpose was to study rural residents, observe their folkways, and recommend fire prevention approaches.

One of the earliest social science research undertakings in forest fire prevention was Kaufman's study *(10)* in the Clark National Forest of Missouri. The results of this study indicated that unfavorable attitudes created by an imagined or real conflict

* Associate Professor, Department of Agricultural Economics and Rural Sociology, Agricultural Experiment Station, Auburn University, and Research Forester, Southern Experiment Station, USDA, respectively.

[1] Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

[2] In the 5-year period 1967 through 1972, over 38 percent of the fires occurring in the South were ascribed to incendiarism. In the latter 3 years of this period, Louisiana, Mississippi, and Alabama have ranked highest in the number of reported incendiary fires. Source: Wildfire Statistics, USDA, Forest Service, Division of Cooperative Forest Fire Control, Washington, D.C., 1973.

between the individual's basic economic interests with the reforestation program was behind the incidence of incendiary fires.

In another early study, Shea *(14,15)* came to the conclusion that woods burning was primarily an expression of social frustration in isolated, low-income areas. Incendiarism, according to findings by Weltner *(17,18)* was attributed primarily to the disruption of the existing socio-economic structure. The contention was that physical wealth and social leadership in some areas of the rural South were linked to cattle production. Since the better-off producers generally believed in the practice of periodic range burning, they tended to be the leading woods burners in the community.

During the 1940's, these initial efforts of social scientists in forest fire prevention research were halted. Not until the mid-1950's did the USDA Forest Service renew its interest in such research. Then a study was initiated to explore the human factors in forest fires *(12)*. The Mississippi-based researchers found, as had earlier researchers, that the same factors of cultural practices and poor educational and economic conditions were largely responsible for fire occurrence.

Hansbrough's 1961 study in two Louisiana parishes *(9)* especially pointed up the social and cultural aspects of man-caused fires. Further support was provided by a 1963 study *(1)* of fire-related attitudes and characteristics of forest residents in three Mississippi counties. The findings confirmed the belief that unfavorable attitudes and lack of knowledge tend to converge in the lower socio-economic classes. This study also indicated that a conflict of interest was apparent between agricultural and forestry interests in rural areas.

In 1966, Cole and Kaufman *(4)* conducted a study designed to provide a comprehensive picture of the socio-economic factors associated with forest fires in Mississippi. Forest fire occurrences were found to be closely related to both socio-economic factors and forest types. Land ownership patterns, particularly, were found to be associated with forest fire occurrence rates.

In a study of forest fire occurrence throughout the South, Doolittle *(7)* found that 98 percent of all fires were man-caused during a 10-year period (1956-1965). However, this study made no attempt to further classify fires by administrative cause or to determine the factors associated with the start and spread of fires. Such a consideration was not made because of the ex-

tensive variation encountered in reporting and classifying procedures used by different state and federal protection agencies.

Researchers in Louisiana operating under the leadership of A. L. Bertrand *(2,5,8,16)* conducted a series of studies in the 1960's that focused on various sociological aspects of woods burning. One study in this series conducted in an area of high incendiarism found that woods fires resulted from the actions of a relatively small number of residents who held negative attitudes toward fire prevention and forest conservation. Significantly, the latent woods burners were found to be somewhat isolated in their social interaction and not easily contacted by informational programs designed to stimulate attitudinal and behavioral change.

In 1971, an experimental action or educational program *(11)* in forest fire prevention was conducted for a multi-county area of Georgia where a long-standing history of incendiary woods fires existed. Utilizing a research design consisting of two experimental and two control areas, Miller showed that the level of existing factual information and knowledge of forest practices possessed by the rural residents was changed positively during the program period. Such research results provide encouragement that specialized education programs in rural areas can be effective in modifying the attitudes and practices associated with the woods-burning problem.

The concern for forest incendiarism is not unique to the South. At least one study conducted in the West is of particular interest. This research focused specifically on the people involved in incendiary fires. An analysis was made of 165 Fire Trespass Reports of man-caused fires (between 1956-1965) filed by USDA Forest Service officers working in the National Forests of the California and Intermountain Regions *(3)*. The study was limited to cases in which a man or organization contributed to the cause of the fire. Malfunctioning combustible equipment was reportedly at fault in more than a third of all such cases. Careless burning of garbage and refuse and careless use of matches were jointly responsible for another 30 percent of all man-caused fires.

Almost half the persons associated with a man-caused fire were woods workers employed by private firms. Two-thirds of the fire-starters were from blue collar occupations, and resided primarily in towns and villages. The majority (80%) were judged by the investigating officers to have poor financial stand-

ings; but their reputations in the local community were considered to be "good" (70%). Very few incendiarists had a police record and further investigation revealed only four persons who actually had a record of arrest. Only in one-fourth of the cases were damage costs charged to the accused and these costs had an average value of $1,000. Settlements were obtained in about one-half of these cases, but the average amount paid was only half the amount charged.

The majority of fire cases involved a person operating as an employee of an organization. Ninety-one percent worked for private employers such as railroad, lumber, or utility firms. Often these employers had a past record of fire violations suggesting the fire proneness of their particular activity. Damage charges were assessed against employer organizations in 92 of the 165 cases. These assessments ranged from $500 to $50,000 and averaged about $2,200. In three-fourth of the cases where charges were assessed, some settlement was made with the amount averaging only slightly less than that charged.

Generally, research relating to the human dimension in forest fires has been relatively sparse. Within a 40-year period, only a modest number of studies have been undertaken. The difficulties associated with identifying the forest incendiarist is one reason for this fact. The covert nature of the fire-setting act, especially where it is done maliciously, has made the consideration of its socio-psychological dimensions understandably difficult. Nevertheless, much can be learned by systematically analyzing the information already available in forest fire case reports and attempting to classify and profile types of fire-setters along socio-economic, socio-cultural, socio-physiological, and behavioral lines.

PROBLEM

One of the major focuses of research into man-caused forest fires has been the socio-cultural environment within which woods burning is likely to take place. Studies have revealed certain demographic, economic, social, and psychological characteristics of various forest publics including residents, workers, and itinerant visitors to be associated with differential rates of wildfire occurrence. The characteristics identified might be considered predisposing risk factors; that is, conditional variables in the general socio-cultural environment which set the stage for, although not in a causal way, the fire setting act.

Although limited research has been conducted, little is known about a specific behavior or action related to fires, and to the type of persons directly responsible. To increase the available knowledge about these "agents of risk," fire setting acts must be investigated as close to the actual time and place of occurrence as possible, analyzing the "who, when, where, how, and under what circumstances" of documented fire cases. Profiling the various characteristics of identifiable risk agents is a requisite step in the development of operational guidelines for evaluating man-caused fire problems.

OBJECTIVE

This study was designed to describe the personal, social, and physical characteristics of a selected population of woods-fire trespass cases and the person(s) involved, as identified in the fire trespass case records for Region 8 of the USDA Forest Service.[3]

PROCEDURE

General

The exploratory nature of this study precluded a predetermined research design, and indicated a descriptive approach most appropriate for analyzing the information gathered. The population (trespass cases), was a largely unknown quantity prior to initiation of the fieldwork. The cases were not selected through any vigorous statistical scheme but on the completeness of the descriptive information based on a case-by-case scrutiny of available documentation. Such descriptive information varied in degree of completeness even among the case population selected and ultimately used.

---

[3] Definitions, authority, policies, responsibilities, and procedures pertaining to the reporting, prosecution, and recording of felony and misdemeanor violations of federal fire laws are established by written rules and regulations (Chapter 2, Title 36, Code of Federal Regulations) and directives (USDA Forest Service Manual, Chapters 5310, 5330, and 5340). More specific objectives were as follows:

(1) to compare the characteristics of incendiary (felonious) violations with those of lesser (misdemeanor) fire trespass offenses, e.g. accidental.

(2) to construct trespasser profiles based on these characteristics that would be of use in type-classification of felony and/or misdemeanor woods-burners.

(3) to suggest operational guidelines designed (a) to provide criteria useful in identifying potential woods-burners, and (b) to provide the basis for determining the most appropriate prevention measures.

Source of Data

The main source of information concerning the violation of laws or regulations pertaining to forest lands is the Trespass Report which is "prepared on every case in which there is evidence that a law or regulation has been violated or where negligence can be established, and the trespasser's identity is known."[4] This document includes a case summary supplemented by a detailed trespass description. Other sources of information available are as follows: The Trespass Notice (USDA Forest Service, Region 8, Form 5300-1), prepared for trespass cases in which court action is instituted or where settlement is made out of court; Law Enforcement Report (USDA Forest Service, Form 5300-2), prepared for all fire law or regulation violations and fire trespass cases (in the event of criminal action supplemental reports are submitted); and USDA Forest Service, Individual Fire Report (Form 5100-29) used to describe cause, exact geographic location of fire, and physical description of the scene. Copies of each of the foregoing documents are filed at the forest supervisor's office of the national forest on which the trespass took place.

Preliminary inquiries concerning the number of cases and depth of information per case available, both at the regional level (Atlanta) and the offices of the fourteen forest supervisors, indicated a wide variation among the national forests. Over the most recent 10-year period, the number of cases ranged from none to more than 200. At the same time, sample case data received from several National Forests suggested considerable variation in the amount of available information among individual cases.

Region 8 of the USDA Forest Service embraces 12 million acres of national forest lands scattered among 33 separate forests across 12 states, thus, the sampling area was restricted. A time schedule for contacting personnel at the national forest headquarters was established on the basis of the reported fire trespass case load per each forest during 1960 through 1971, the location of forests relative to perennial "hot" areas in the Region.[5]

---

[4] USDA Forest Service Manual, Title 5300, Chapter 5340, paragraph, 5340.3, Amendment No. 8, Sept. 1967.

[5] The states of Louisiana, Mississippi, Alabama, Georgia, and South Carolina, perennially, have had the largest conterminous groups of high fire occurrence counties in the South. (See, for example, Doolittle, M. L. "Forest Fire Occurrence in the South, 1956-1965," USDA, Forest Service, Southern Forest Experiment Station Research SO-97, 1969).

National Forests in Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Tennessee provided the sample cases for this study.

Data Collection

The review of documented fire trespass cases served as the means for obtaining desired data. Case records of recent vintage were generally on deposit at the forest supervisor's office of the various national forests. Records were sought for the period 1960 through 1971, or as far back as possible given the fact that special fire investigation had not been implemented throughout all states in 1960. Records for the period 1968 through 1971 were available in all state offices. However, the records for 1960 through 1967 for Georgia, South Carolina, and Tennessee had to be recalled from the appropriate federal records center. By this means the complete file was obtained for Georgia and Tennessee. The case files for South Carolina were not available; therefore, the data for that State covered only 1968-1971.

A research worker traveled to each of the state offices during the summer of 1972 to discuss the project with Forest Service officials and to review the case records. All records immediately available in state offices were reviewed on the premises and pertinent items extracted. Records that had to be recalled from various record centers were shipped later to Auburn University for review. The researcher also interviewed the special fire investigator and other key fire protection personnel.

A "case data outline" was developed and used for the extrapolation of pertinent information from appropriate fire and trespass reports and the accompanying narrative investigative reports. By design the study plan was to include every felony (incendiary)[6] case for which a specific fire-setter or group of fire-setters could be determined. It was anticipated that 75 to 100 such cases would be uncovered in the case files.

For comparative purposes data collection also included a complementary sample of accidental (misdemeanor) fire cases. The criteria used in selecting accidental cases from among the large number available were: matching the accidental and malicious

[6] As used here, felony fire trespass cases are those in which the cause was classified—incendiary—and the intent of the perpetrator determined willful. The term misdemeanor is used in reference to fire trespasses resulting from non-willful intent.

cases as nearly as possible by year and state, selecting the accidental cases on the basis of the completeness of the case information, and considering only those accidental cases that involved activities of individuals acting independently rather than as representatives of public or private organizations. This procedure may have introduced some bias in that the more completely documented cases may be those in which arson was suspected thereby resulting in an extensive investigation before being classified a misdemeanor or accidental fire.

NUMBER OF CASES

Completeness of the records on fire trespass cases was difficult to ascertain, and in several states there was a strong suspicion that case report files were incomplete, especially with regards to accidental cases. Although the relative number of misdemeanor cases was large compared to the number of felony cases, the records were inconsistent in documentation. It seems appropriate therefore, to warn against accepting the number of cases reported here as an exact accounting of all fire trespass offenses occurring in these national forests during the study period.

A summary of the total number of fire cases reviewed in the state files and the number selected for inclusion in this study is provided in Table 1. Only 49 documented felony cases were found, compared to 870 misdemeanor cases. The ratio of misdemeanor to felony cases ran about 17 to 1 and was similar for all states except Tennessee, which had a low ratio of 7 to 1.

TABLE 1. NUMBER AND TYPE OF FIRE CASES FOUND BY STATE, 1960-1971*

State	Fire cases			
	Felony	Misdemeanor		Total cases
		Sampled	Not sampled	
Alabama	7	7	124	138
Georgia	7	7	106	120
Louisiana	10	8	159	177
Mississippi	13	15	297	325
South Carolina**	2	7	59	68
Tennessee	10	9	72	91
Total cases	(49)	(53)	(817)	(919)

* These totals are at best only approximations dependent on the completeness of the case report files and subject to errors in classification as felony and misdemeanor fires.

** Data for 1960-1968 were not recalled and provided by the Forest Supervisor's office. The numbers given reflect only those cases occurring between 1969-1971.

South Carolina had the highest ratio of 29 to 1, but this rate was based on only the most recent 3-year period.

An important point with reference to the ensuing findings is that the data references suffer from a number of limitations. The 49 felony cases represent only those cases clearly classifiable as incendiarism based on information, which in many cases was either not provided at all or was vague. This was especially true with social and personal information. The incompleteness of case reports made classification of cases difficult and hampered analysis.

FINDINGS

Comparison of Felony and Misdemeanor Cases

The fire trespass reports for the six states studied produced only 49 usable felony cases in the selected national forests. Usable cases were defined as those for which sufficient documentation existed to warrant inclusion. For two instances in Tennessee this documentation was completed by means of an oral accounting of cases by the investigating Forest Service officer. Supplementary information was obtained from investigating officers on a number of other cases where data in the reports were incomplete, but regrettably, there remained a number of cases for which it was impossible to obtain any supplementary information. The resulting number of felony cases was only half that desired for the study, and this did restrict the analysis.

For comparative purposes a sample of misdemeanor cases was developed. These cases were selected on the basis of three primary considerations. First, a sample similar in size to that of felony cases was obtained. Second, the misdemeanor cases matched the felony cases as nearly as possible by state and year of fire. And, third, misdemeanor cases were chosen on the basis of the completeness of the case report. This last consideration meant that when several misdemeanor cases existed in a state for a particular year, the one providing the most complete information was selected. The resulting sample consisted of 53 cases.

This distribution of felony and misdemeanor fire trespasses by state and national forest is shown in Table 2. For the most part the cases are comparable by state except for South Carolina which has an under-representation of felony cases. Again, this results from the fact that the case records for only the most recent 3-year period (1969-1971) were made available.

TABLE 2. COMPARISON OF FELONY AND MISDEMEANOR FIRE TRESPASS CASES BY STATE AND NATIONAL FOREST IN WHICH THEY OCCURRED, 1960-1971

State and forest	Classification of fire			
	Felony		Misdemeanor	
	Number	Percent	Number	Percent
Bankhead	1		2	
Conecuh	1		2	
Talladega	5		3	
Alabama total	7	14.3	7	13.2
Chattahoochee	6		5	
Oconee	1		2	
Georgia total	7	14.3	7	13.2
Kisatchie	10		8	
Louisiana total	10	20.4	8	15.1
DeSoto	12		10	
Holly Springs	1		2	
Homochitto	---		1	
Tombigbee	---		2	
Mississippi total	13	26.5	15	28.3
Francis Marion	2		5	
Sumter	---		2	
South Carolina total	2	4.1	7	13.2
Cherokee	10		9	
Tennessee total	10	20.4	9	17.0
Totals	(49)	100.0	(53)	100.0

Time of Fire

Data for the study period indicated the incidence of documented incendiary fires was heaviest from 1960 through 1962 and 1969 through 1971 (Table 3). Approximately one-third of the fires occurred in each of these periods. By comparison the accidental fires were more randomly distributed through all years. However, this may have resulted from the selection criteria employed.

The months during late winter and early spring represented a 3-month period when malicious fires appeared most prevalent. Almost two-thirds of such fires (62%) occurred at this time. The three summer months were apparently free of woods arson.

The data indicated that mid-week and the weekend were prime times in which malicious fires occurred (Table 4). Tuesdays and Fridays were days of few such fires. More than half the felony cases (55%) occurred between Saturday morning and Monday evening.

Accidental fires tended to occur more evenly throughout the week than did malicious fires. Sunday was the day of fewest fires. The period Wednesday morning through Saturday evening

TABLE 3. COMPARISON OF FELONY AND MISDEMEANOR FIRE TRESPASS CASES BY YEAR AND MONTH OF FIRE OCCURRENCE

Year of fire	Classification of fire		Month of fire	Classification of fire	
	Felony	Misdemeanor		Felony	Misdemeanor
	Percent			Percent	
1960	10.2	----	January	8.2	9.4
1961	10.2	3.8	February	22.4	9.4
1962	12.3	20.7	March	24.5	30.2
1963	4.1	9.4	April	16.3	32.1
1964	6.1	5.7	May	6.1	1.9
1965	6.1	7.5	June	2.0	3.8
1966	8.2	11.3	July	----	----
1967	6.1	5.7	August	----	----
1968	2.0	13.2	September	----	
1969	12.3	17.0	October	6.1	11.3
1970	10.2	3.8	November	6.1	1.9
1971	12.2	1.9	December	8.2	----
Total cases	(49)	(53)	Total cases	(49)	(53)

TABLE 4. COMPARISON OF FELONY AND MISDEMEANOR FIRE CASES BY DAY AND HOUR THE FIRE WAS REPORTED

Day of fire	Classification of fire		Hour of fire	Classification of fire	
	Felony	Misdemeanor		Felony	Misdemeanor
	Percent			Percent	
Monday	14.3	15.3	12:01 to 6:00 a.m.	15.4	2.4
Tuesday	4.1	9.4	6:01 to 9:00 a.m.	10.3	2.4
Wednesday	20.4	17.0	9:01 to 12 noon	17.9	19.5
Thursday	14.3	15.1	12:01 to 3:00 p.m.	17.9	48.8
Friday	6.1	22.7	3:01 to 6:00 p.m.	23.1	22.0
Saturday	18.4	13.2	6:01 to 9:00 p.m.	10.3	2.4
Sunday	22.4	7.5	9:01 to midnight	5.1	2.4
Total cases	(49)	(53)	Total cases*	(39)	(41)

* No information on the hour during the day that the fire had occurred for 10 felony (20%) and 12 misdemeanor (23%) cases.

accounted for more than two-thirds (68%) of such fires. Moreover, misdemeanor fire cases virtually all occurred during the regular work day. The hours between 9 a.m. and 6 p.m. accounted for slightly more than 90 percent of such fires.

Violations and Actions

Fire trespass violations are prosecuted under federal and state laws as appropriate. Where federal laws are concerned, either one of three statutes may be applicable depending on the seriousness of the offense. These are:

(1) 18 U.S. Code 1855, which deals with willful intent and carries a maximum penalty of a $5,000 fine, or imprisonment for 5 years, or both.

(2) 18 U.S. Code 1856, which involves careless or nonwillful intent and carries a maximum penalty of a $500 fine, or imprisonment for 6 months, or both.

(3) 18 U.S. Code 1863, which embodies the so-called Secretary's (Agriculture) Regulation T-1, Fire Trespass. In essence this statute specifies certain acts that are prohibited on lands of the United States (coming under regulation by the Secretary of Agriculture) because of high fire risk or hazard. Maximum punishment is the same as (2) above.

Federal crimes are classified further under statute (18 U.S. Code 1) as felonies (any offense punishable by imprisonment for a term exceeding 1 year) or misdemeanors (all other offenses). Classification of state law violations is generally similar, but they often vary somewhat in specifics from state to state.

Felony and misdemeanor cases differed markedly in the application of these regulations. A high proportion of the felony cases (77%) were processed under the first two U.S. codes, whereas hardly any of the misdemeanor fires (11%) involved these regulations. The majority of the latter type cases were handled as violations of the Secretarys Regulation T-1. Few violations of state regulations were recorded for either felony or misdemeanor fires.

Arrests for fire trespass on national forest lands did not occur in any of the misdemeanor cases. Moreover, an actual arrest was made in only about half the felony cases investigated (22 cases or 45%). When arrests were made, the identity of the arresting officer was not reported about half the time. In those instances where this information was provided, the Federal Forest Service investigator usually made the arrest. Seven of thirteen arrests were handled in this fashion. A sheriff, sheriff's deputy, or U.S. marshall each accounted for two of the remaining arrests.

For the most part, the legal actions or penalties associated with both types of fires involved the payment of suppression costs. In actuality however, these suppression costs were rarely collected. This was true for 65 percent of the felony and 49 percent of the misdemeanor cases. Although fire-setters involved in misdemeanor cases were more likely to pay suppression costs, the actual amount of money paid was negligible. Less than $50.00 was paid in 62 percent of the cases (17 of 27) where any payment was collected, and in no instance did the suppression costs collected exceed $500.00. A similar situation existed with

regard to felony cases. When such costs were collected, the payment involved was less than $50.00 in eight of the 13 cases. In no felony cases did the suppression costs collected amount to more than $250.00.

Location and Witnesses

Approximately two-thirds of the incendiary fires occurred in isolated rural areas where the risk of detection was minimal. There was a decrease in number of such fires as the proximity to population areas increased. Misdemeanor cases showed a similar pattern in this respect with the majority occurring in isolated areas. To only a very slight extent were accidental fires more common than malicious ones near rural settlements.

Witnesses to fires and the circumstances surrounding them were classified in the case reports as actual witnesses to the fire-setting act and as circumstantial witnesses providing relevant situational and motivational information. Felony and misdemeanor cases differed significantly in this respect. Witnesses of some sort existed for 80 percent of the former cases but for only 30 percent of the latter. Part of the explanation here is the fact that many offenders in misdemeanor cases admitted their responsibility, thereby eliminating the need for an extensive investigation and search for witnesses.

Along this same line, the number of witnesses was much larger for each felony case than for a misdemeanor case. Of the 16 misdemeanor cases for which witnesses were reported, nine involved only one or two witnesses. For felony cases, on the other hand, there were 39 for which witnesses were reported and 30 of these cases had three or more witnesses.

The existence of actual witnesses to the fire-setting act, however, is the critical factor in convictions for woods arson. These data clearly indicate the serious problem encountered in proving the offender guilty in court. According to these case records, an actual eye-witness to the fire-setting act rarely existed. Only in four instances for both felony and misdemeanor cases were actual witnesses identified. Moreover, in two of the former cases there was only one witness to link the offender specifically to the fire-setting.

The types of witnesses associated with these forest fires were those possessing only circumstantial information. Such witnesses were most common for felony fire cases. Only 26 percent of

misdemeanor cases involved any circumstantial witnesses, compared to 75 percent of the felony cases. Fourteen misdemeanor cases involved circumstantial witnesses, but in one-half of these only one or two witnesses were identified. By comparison only eight of 37 felony cases reporting circumstantial witnesses involved two or fewer persons. Eighteen felony cases involved four or more such witnesses.

Damage and Cost

Many of the fires encroaching on national forest lands had their origins on non-federal lands, however the major destruction was often to the latter. Accidental fires were almost equally divided between privately owned land and national forest land in cases where principal damage was concerned (Table 5). Although the major destruction from felony fires was only slightly greater on national forest lands than was the case with accidental fires, there were appreciably fewer incidences in which a private landowner suffered the major loss. When industrial ownership was considered, only two malicious fires causing major damage were recorded.

Acreage damaged often was not reported. This was more often true for felony cases where almost half (45%) of the reports failed to include this information. The omission was less frequent for accidental cases, but still represented one-fourth of the fires. When reported, the acreage damaged was usually small. Sixty-eight percent (17 of 25 reported cases) of malicious fires damaged fewer than 6 acres. The same small acreages were true for 50 percent (20 of 40 reported cases) of accidental fires. Only one felony and three accidental fires damaged as many as 100 acres or more. Thus, if extensive acreage losses have occurred over the 12-year period of this study, these cases were not reflected in the documented trespass reports.

TABLE 5. TYPE OF LAND OWNERSHIP RECEIVING LARGEST PROPERTY LOSS FROM FELONY AND MISDEMEANOR TYPES OF FOREST FIRES

Ownership of major fire damage	Felony		Misdemeanor	
	Number	Percent	Number	Percent
Individual	13	28.9	25	47.2
Industrial	2	4.4	---	---
National forests	29	64.5	28	52.8
Other public forests	1	2.2	---	---
Totals*	(45)	100.0	(53)	100.0

* No information was available for 4 felony cases.

Dollar damage reported was also rather low. Of the 45 misdemeanor cases for which information was provided, only three cases existed where damage costs of $100.00 or more were reported and none exceeded $250.00. In the remaining cases for which damage costs were noted, the value was given as "none." Virtually the same situation existed for the felony cases. Eighty-six percent (36 of 43) involved no damage. Of the remaining six felonious cases, two had damages of less than $50.00, while one case involved serious fire damage amounting to more than $1,500.00.

Suppression costs were recorded for all accidental fires, but the same was not true for malicious fires, where nine cases included no information. Almost half of the felony cases involved suppression costs of less than $50.00, and this did not include four cases for which no suppression costs were charged. Eighty percent of the felony fires for which these costs were reported involved from zero to less than $100.00. Only two cases involved costs of $1,000.00 or more.

By comparison, only 40 percent of the reported misdemeanor cases involved minimal suppression costs of less than $50.00 and none were reported without suppression costs. Two thirds of the accidental fires had suppression costs of less than $100.00. There were four cases involving suppression costs of $1,000.00 or more.

The collection of suppression costs also differed between the two types of cases. These costs were much more likely to be collected in misdemeanor than in felony cases. No costs were collected for one half of the accidental fires, but the noncollection rate was 70 percent for the malicious fires. Regardless of the nature of the case, suppression costs collected seldom exceeded $100.00. This amount or more was collected in approximately 10 percent of both misdemeanor and felony cases.

Motives and Illegal Activities

The reason a woods fire is set by an offender is not easily determined in most instances. This appeared to be especially true for felony fire cases. No reason or motive for starting the fire was given in the trespass reports for 40 percent of the cases (Table 6). Comparatively, reasons for the act were given for all but two misdemeanor cases. The majority of these cases was associated with debris burning and land clearing activities.

TABLE 6. APPARENT REASON OR MOTIVE BEHIND FELONY AND MISDEMEANOR FIRE CASES

Reason for setting fire	Felony		Misdemeanor	
	Number	Percent	Number	Percent
Intoxication	6	20.7	----	----
Criminal negligence	6	20.7	----	----
Mental illness (Pyromania)	4	13.8	----	----
Grudge	4	13.8	----	----
Job fire	2	6.9	----	----
Land clearing*	3	10.4	18	35.3
Debris burning	----	----	21	41.2
Hot coals and sparks	----	----	5	9.8
Others	4	13.7	7	13.7
Total cases**	(29)	100.0	(51)	100.0

* Land clearing is not normally considered a felony except where the fire is deliberately set on the National Forest. This has been a rather traditional cultural practice in some Southern states and accounts for its appearance as a reason for a few felony fire cases.

** No information was available for 20 felony and 2 misdemeanor cases.

Felony cases were attributed to a much wider variety of reasons, some of a more personal nature than were misdemeanor cases. Because of the lack of information for so many of these cases, no dominant motives could be pin-pointed. No information was given for 20 of the 49 cases. Six cases involved persons acting under the influence of alcohol and six others were described with the nebulous term "criminal neglect." Mental illness, including pyromania, was indicated in four cases and four others were reportedly motivated by revenge.

The drinking or distilling of alcoholic beverages is often given as a factor in forest fires. The cases analyzed in this study do not support the contention that this is a major factor. No instances of distilling or moonshining were reported in either the felony or misdemeanor cases. Drinking alcoholic beverages, however, was a factor in 11 of the 102 cases studied. All but one of these were felony cases and accounted for about 22 percent of all cases for which this information was available. Thus, alcohol is an aspect *only* of felonious fires where it probably serves to embolden the offender by removing inhibitions which, if he was sober, would most likely have prevented him from completing the act. The use of alcohol in itself then, does not appear to be a motive for fire-setting.

Woods-burning or arson is merely one specific illegal activity. Because of its destructive nature it can be used in combination with other illegal activities to destroy evidence. This was found

to be true to some extent in eight felony cases. Interestingly, none of the reports directly linked a woods fire with the illegal activity of moonshining, although the practice of diversionary smoke and deliberate woods fires is known to be a trick of the moonshiner.

Confrontation and Court

As might have been expected, felony and misdemeanor fire cases differed considerably in the way they were handled. Confrontation with fire-setters was generally handled by a District Ranger in misdemeanor cases (84% of the time), while a USDA Forest Service investigator confronted offenders in six of the remaining eight cases. This pattern was reversed for felony cases in which more than half (60%) were confronted by a USDA Forest Service investigator and only 32 percent by a District Ranger. Clearly this represents the shift of investigative responsibility away from the local area to a specialist in handling investigations of a felonious nature.

All but two of the misdemeanor cases involved civil proceedings. The two cases that went to court were heard in a District and a County Court. Four other misdemeanor cases never resulted in any civil or criminal action. Felony cases, on the other hand, went more often to a District Court (33%), or a County Court (17%). Ten cases (21%) were handled as civil offenses and ten others never resulted in legal action.

Number of Offenders

There were 149 persons involved in the 49 felony and 53 misdemeanor fire trespass cases reviewed in this study. Misdemeanor cases almost always represented individual acts of fire-setting whereas felonious fires generally involved multiple individuals. There were only three misdemeanor cases in which more than one person was involved. Felony fire cases, on the other hand, involved 96 persons. Only 17 cases (35%) involved a single individual acting alone while 16 cases (32%) involved three or more persons.

Characteristics of Offenders

One of the objectives of this study was to develop a profile or profiles of persons involved in setting fire to forest lands. In this section attention is focused on selective characteristics describing the felonious and accidental (misdemeanor) woods burner (Table 7). Note especially that this description is ex-

TABLE 7. PROFILE OF SELECTED CHARACTERISTICS OF OFFENDERS IN FELONY AND MISDEMEANOR FOREST FIRE TRESPASS CASES OCCURRING ON NATIONAL FORESTS IN SIX SOUTHERN STATES, 1960-1971

Selected characteristics of offenders	Felony			Misdemeanor		
	Number	Percent*	Number no information	Number	Percent*	Number no information
Male	90	95.7	2	39	73.6	0
Younger than 40	69	85.2	15	9	17.0	22
Caucasian	86	96.6	7	46	93.9	4
Less than 8 years education	45	66.2	28	29	82.9	18
Unmarried	58	75.3	19	7	25.0	25
Small family	31	58.5	43	10	43.5	30
Open-country resident	52	57.1	5	36	67.9	2
Transient	10	14.1	25	1	3.6	25
Employed fulltime	30	71.4	22	11	64.7	18
Blue collar worker	34	46.6	23	9	26.5	19
Agri. or forestry worker	14	33.3	54	7	46.7	38
Poor social reputation	58	67.4	10	6	17.6	12
Poor financial reputation	49	62.8	18	31	63.3	4
Prior police record	17	20.5	13	2	4.4	7
Declared guilty by court	47	52.2	6	2	3.8	0
Total offenders	(96)	----	(96)	(53)	----	(53)

* All percentages were calculated by dividing the number of offenders possessing a particular descriptive characteristic by the total number of offenders minus the number of offenders for which no information was available in each type of fire trespass case (felony or misdemeanor). The fact that so many reports lacked pertinent descriptive information was a serious limitation in this study.

tremely handicapped by missing information about the persons involved. Data pertaining to some major characteristics were available for only two-thirds of the offenders. For one item of information the percentage of missing data went as high as 62 percent (92 of the 149 persons identified). Quite clearly, more attention should be given by the investigating officers to providing complete information on all offenders or else eliminating these items from the Fire Trespass Reports.

Sex, Race, and Age

Persons involved in felonious fires were predominantly young, white males. Virtually all fires of both deliberate and accidental origin were set by Caucasians. Racial conflicts such as those between Negro workers and white property owners did not appear to be a factor in fire occurrence. Only six offenders were Negro and these were divided equally between the two types of offenses.

Age was the most distinguishing characteristic differentiating persons involved in felony and misdemeanor fire cases. Eighty-five percent of the felonious fire-setters for whom age was reported were younger than 40 and about half of these were teenagers or children. Conversely, persons involved in accidental fire cases were much older. Almost 20 percent were of retirement age (65 years old or older).

Only four women were associated with incendiary fire trespasses compared to 14 involved in accidental fires. Women accounted for one-fourth (26%) of the misdemeanor offenders.

Education

Lack of education was a distinctive characteristic of all woods-burning offenders, especially the misdemeanor violators. Using the very minimal standard of 8 years of schooling or less as the measure of limited education, two-thirds (66%) of the persons involved in felony cases and 83 percent of those in misdemeanor cases were "uneducated." The full scope of this finding was limited somewhat by the fact that no information was available for one-third of the cases. This missing information could bias these percentages considerably if there was any systematic failure in the reports to provide this information for better educated persons. This must be taken into account as one interprets these and other characteristics considered in these findings.

These data reveal that felonious fires are much more likely to be set by better educated persons than are accidental fires. This is not to say that the starters of felonious fires are highly educated. They are not. Only four fires, two malicious and two accidental, were set by persons with schooling beyond the high school level. The difference was in the proportion of persons starting felonious fires who had between 9 and 12 years of schooling. This educational difference results primarily from the younger age of felony offenders who had received more schooling than the preceding generation by virtue of compulsory school attendance laws and increased educational opportunities in rural areas.

Family Status

The majority of felonious offenders were unmarried at the time of the woods-burning offense. This included widowed and divorced persons as well as those who had never been married. A lack of family responsibility quite clearly prevails among these

persons and reflects a lack of adult maturity. On the other hand, misdemeanor fires were set primarily by married persons.

The size of the family or household unit in which the offender lived did not differ much between the two types of woods-burning cases. Small families of one to three persons were a little more prevalent among felonious offenders. Somewhat larger families prevailed among accidental offenders. Again, this difference would appear to be associated with age.

Residence

Most offenders, regardless of the nature of the offense, were rural residents. Few city or large town residents were involved in fire cases. Only eight malicious and five accidental offenders were from these types of urban places. The majority of offenders resided in the open country rather than in town. Persons involved in malicious fires were somewhat more likely to reside in small villages and hamlets than those involved in accidental fires.

Transiency accounted for a very small number of woods-burners. A transient is referred to as a vacationer or traveler who happens to be passing through or visiting in an area. The Fire Trespass Reports indicated that only one of the accidental fires sampled was attributed to such a person, however ten transients were associated with felonious fires. Despite this finding, the data distinctly revealed that the vast majority of fire offenders were local, rural people, who spend a considerable amount of time in and around forest areas and not outsiders lacking a real intimacy with rural life.

Employment

The offender characteristic most apt to be omitted from the Fire Trespass Report involved information about the offender's source of livelihood. Employment information was available for only about two-thirds of the cases. For this reason the data were subject to undetermined bias depending upon the extent to which the missing information was random across all types of employment.

Felonious offenders were more likely than misdemeanor offenders to be employed in blue collar jobs of skilled, operative (semi-skilled), and laborer (unskilled, farm and nonfarm) types and slightly more likely to be employed fulltime. On the other hand, a somewhat larger proportion of accidental offenders were

unemployed (51%) compared to (43%) for felonious offenders. Unemployment was due to retirement or being a student or a housewife. A relatively large number (20) of the accidental fires involved farmers and farm laborers whereas only 9 percent of the felonious offenders were in this occupational category.

A consistent finding was revealed relative to the nature of the industry or business in which the person was employed. Workers in agriculture and forestry accounted for the largest number of offenders for whom employment and occupational data were available. Almost one-half of the persons involved in misdemeanor and one-third of those in felonious fires were employed in agriculture and forest industries. The construction industry accounted for another one-quarter of the felonious fire offenders.

Reputation

Two indicators of a person's reputation were considered: social and financial. These were evaluated by the investigating officer, who rated each factor on a scale of good, questionable, and bad reputation. As such, the measure was an extremely subjective one based on the kinds of information obtained during the investigation, but not necessarily substantiated by factual evidence.

Of these two measures, the indicator of social reputation showed the greatest difference between felonious and accidental offenders. Hardly any persons involved in an accidental fire were said to have a bad or even questionable reputation (18%). Conversely, two-thirds of the felonious offenders were given "poor" ratings and about half of these were given "bad" ratings.

The financial reputation was generally rated "poor" for all fire offenders regardless of the nature of the offense. Only slightly more than a third of the offenders had "good" financial reputations. This appears to be an obvious factor in the collection of suppression costs and damages associated with these woods fires. It is difficult to collect damages from "poor" people.

Legal Action

For the most part the offenders did not have any previous police record. Only 4 percent of the accidental and 21 percent of the felonious offenders had a prior record of illegal activity. Woods-burning did not appear to represent a history of law violations.

Formal legal action resulting in a guilty sentence handed down

by a court of law was a rare outcome for accidental offenders. The same cannot be said for felonious offenders, however. Slightly more than one-half of these persons were declared guilty by the court in which their case was heard.

Supplementary Data on Misdemeanor Trespasses

Because of the unexpectedly large number of accidental cases (817), the research conductor attempted to supplement information from a selected sample of 53 cases by recording a minimum amount of descriptive information for 408 additional cases. These data were focused on the following items relating to individual trespassers: name and/or organization represented, occupation, address, and social and financial reputation. In the main these data showed that less than 20 percent of misdemeanor fire trespass cases were attributable to individuals or groups whose actions were unrelated to some private industrial or public organizational activity. Again, omissions and lack of consistency in trespass case records severely limited the usefulness of available information.

SUMMARY AND DISCUSSION

Documented information was found to be inconsistent and largely incomplete on fire trespass cases and violators in the files of a representative number of National Forests in the southern region. In general, regulations and requirements regarding the documenting and recording of fire trespass violations and subsequent investigation did appear to be adequate. Therefore, failure of case records to consistently produce even minimal information about reported trespasses appears to be attributable mostly to a wide range in effectiveness among personnel, who investigate violations. An increase in size of the professional investigatory staff employed by the Forest Service in Region 8 within recent years should eventually alleviate this situation.

This study considered all documented felony cases appearing in USDA Forest Service Fire Trespass Case files for selected National Forests in Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Tennessee from 1960-71. A comparative sample of misdemeanor (accidental) cases was selected from the vast number of such documented fire cases. Two groupings were formed consisting of 49 felony and 53 misdemeanor cases. In the selection of misdemeanor cases, attention was placed on those involving acts by individuals. This excluded from con-

sideration the many cases of accidental fires which related to the operating activities of a company or organization.

Felony and misdemeanor cases reflected a number of common characteristics. These may be profiled as: Woods burners are most common in isolated rural areas during the early spring, without the presence of any eyewitness to the fire-setting act and usually involving only a small acreage with modest damage and suppression costs.

A number of rather distinct differences did exist between felony and misdemeanor cases. The profile for the former cases is: Felony cases are most likely to occur on weekends (Friday through Sunday) at any hour of the day or night, for an undetermined reason and with a number of witnesses identified who provide circumstantial information pertaining to the fire-setting. Generally, the violation is processed under a federal code by the Special Fire Investigator who makes the arrest. Legal action usually consists of charging suppression costs which are rarely collected.

In contrast, the latter cases follow another pattern: Misdemeanor cases are most likely to occur during the week and during the prime daylight hours with the fire-starter admitting responsibility as a result of land clearing and debris burning activities. Seldom are witnesses reported and official action brought by the district ranger is under T-1 of the Secretary's regulations. No arrest is made but modest suppression costs are charged and often collected.

Another concern of this study was with the kinds of persons involved in woods burning. Fire Trespass Reports from the 103 cases analyzed involved 149 persons. Misdemeanor cases were almost always reported as the act of an individual, whereas, felony cases often involved multiple individuals.

Results of this exploratory study provided enough information to allow for constructing rough profiles or characterizations of the "typical" fire trespasser. In this regard, three possible "populations" for profiling were recognized: (1) all fire violators, (2) malicious (felony) violators, and (3) accidental (misdemeanor) violators. A profile describing the individual most likely to be involved in fire trespass violations of any kind looked like this: A white male of limited formal schooling who is indigenous to the rural community and employed in agriculture, forestry, or

construction with a poor financial reputation, but no previous criminal record.

Probably of more interest and potential utility to fire prevention planners and action personnel were the comparative "profiles" of the typical malicious and accidental woods-burners. A profile of the former was as follows: A young, married, white male with some high school education, who resides in a small family indigenous to the rural community and, although employed full-time, has a poor social and financial reputation, but no previous criminal record.

A profile of the latter followed a generally different pattern: A middle-aged or retired, married, white male with little schooling who resides in a small family indigenous to the rural community and has a poor financial but a good social reputation and no previous criminal record.

Even from these relatively simple profile statements, it is obvious that woods-burning populations are amenable to type classifying along a number of socio-demographic dimensions, all of which were not explored in this study. Also, it is quite probable that the resulting "profiles" are generally representative of the southern region. The initial implications of these results for fire prevention are: (1) A general recognition and acceptance of population profiling as a useful tool in any scheme of analysis for man-caused fire problems, especially at the local level. (2) Active practice implemented to tailor prevention programs at *all* levels to allow for recognized differences in target populations. (3) An effort among all forest protection agencies to increase scope, consistency, and uniformity in documenting fire trespass violations to provide a more useful reservoir of information.

This study represents another step in researching the area of socio-psychological factors associated with the woods-burning act, i.e. the individual as the risk agent. These profiles of the woods-burner in the south are rather consistent with those generated by Christiansen and Folkman (3) in their analysis of fire trespass cases in the California and Intermountain Regions. Further research is indicated, which will focus on actual case studies of individuals previously arrested and convicted of woods-arson, to better understand the motivational influences associated with incendiarism.

REFERENCES CITED

(1) BAIRD, ANDREW W. 1965. *Attitudes and Characteristics of Forest Residents in Three Mississippi Counties,* Mississippi State University, Social Science Research Center, Preliminary Report No. 17.

(2) BERTRAND, ALVIN L., WILLIAM D. HEFFERNAN, G. DALE WELCH, AND JOHN P. O'CARROLL. 1970. *Attitudinal Patterns Prevalent in a Forest Area With High Incendiarism,* Louisiana A.E.S. Bulletin No. 648, Louisiana State University.

(3) CHRISTIANSEN, JOHN R. AND WILLIAM S. FOLKMAN. 1971. Characteristics of People Who Start Fires, *Forest Service Research Note,* PSW-251, USDA, Pacific Southwest Forest and Range Experiment Station.

(4) COLE, L. W. AND H. F. KAUFMAN. December, 1966. *Socio-Economic Factors and Forest Fires in Mississippi Counties,* Mississippi State University, Social Science Research Center, Preliminary Report No. 14.

(5) DICKERSON, BEN F. AND ALVIN L. BERTRAND. 1969. *Potential Roles of Local Opinion Leaders in Communication of Forest Fire Prevention Messages,* Louisiana A.E.S. Bulletin No. 639, Louisiana State University.

(6) DOOLITTLE, MAX L. 1967. Forest Residents and Forest Fire: A Case Study Approach, Master's Thesis, Mississippi State University.

(7) ---------. 1969. Forest Fire Occurrence in the South, 1956-67, *Forest Service Research Note,* SO-97, USDA, Southern Forest Experiment Station.

(8) GRIESSMAN, B. EUGENE AND ALVIN L. BERTRAND. 1967. *Factors Related to Communication of Forest Fire Prevention Messages,* Louisiana A.E.S. Bulletin No. 623, Louisiana State University.

(9) HANSBROUGH, THOMAS. May, 1963. Human Behavior and Forest Fires, Unpublished paper, Southern I & E Child's Meeting, Baton Rouge, Louisiana.

(10) KAUFMAN, HAROLD D. 1939. A Psycho-Social Study of the Cause and Prevention of Forest Fires, Unpublished paper, USDA, Forest Service.

(11) MILLER, H. MAX. February, 1974. Forest Fire Prevention: An Action Experiment Paper, *Proceedings,* Rural Sociology Section, SAAS.

(12) MORRIS, JOHN B. 1958. Preliminary Investigation of Human Factors In Forest Fires, Unpublished paper, USDA, Forest Service and the Mississippi State University.

(13) RORINSON, JERRY W. 1964. The Development of Forestry in Carroll County, Mississippi, Masters Thesis, Mississippi State University.

(14) SHEA, JOHN P. 1939. Man-Caused Forest Fires. The Psychologist Makes a Diagnosis, Unpublished paper; USDA, Forest Service.

(15) ---------. 1940. Getting at the Roots of the Man-Caused Forest Fires, *Fire Prevention Studies,* Series A, Number 2, USDA, Soil Conservation Service.

(16) TAYLOR, M. LEE AND ALVIN L. BERTRAND. 1965. *Some Human Factors in Woods Burning,* Louisiana A.E.S. Bulletin No. 601, Louisiana State University.

(17) WELTNER, GEORGE H. 1943. Fire Prevention Study on the Chickasawhay and Brenville Districts, Unpublished paper, USDA, Forest Service, Region 8.

(18) ---------. 1942. Wakulla-Vernon Forest Study, Unpublished paper, USDA, Forest Service, Region 8.

APPENDIX

Supplementary Data From 408 Misdemeanor Cases (50 percent random sample)

The Fire Trespass Reports provided varying amounts of complete information relating to 817 misdemeanor cases (App. Table 1). From this pool of cases the research conductor extrapolated four items of information for a 50 percent random sample consisting of 408 cases. The majority of misdemeanor cases reported during the 12-year period (1960 through 1971) occurred on Mississippi National Forests where 36 percent of the cases occurred. Louisiana, Alabama and Georgia accounted for from 19 to 13 percent of the cases in diminishing order. Tennessee and South Carolina provided the fewest cases – less than 10 percent; however, the figure for South Carolina did not include the same twelve-year period as in the other states. A projection based on the rate for the 1968-1971 period would indicate a 50 percent sample of about 75 misdemeanor cases in this state.

Less than half (40%) of the misdemeanor cases were attributed to the actions of individuals operating independent of any public or private organizations or agencies (App. Table 2). Rarely was a woman found directly responsible for a woods fire (4%).

When single individuals were involved, the incident was almost always reported as caused by a male. This was generally true throughout the six states, where males acting individually accounted for between 50 percent (in Georgia) to 20 percent (in South Carolina) of all misdemeanor cases.

APPENDIX TABLE 1. CLASSIFICATION OF OFFENDER AS PERSON OR ORGANIZATION IN 50% RANDOM SAMPLE OF (ACCIDENTAL) MISDEMEANOR FIRE CASES IN SIX SOUTHERN STATES FOR THE PERIOD 1960 THROUGH 1971

Six selected southern states	Classification of offenders		Total cases	
	Persons	Organizations		
	Percent		*Number*	*Percent*
Alabama*	35.8	56.7	67	16.4
Georgia	56.6	43.4	53	13.0
Louisiana	38.0	62.0	79	19.4
Mississippi	37.2	62.8	148	36.3
South Carolina**	20.0	80.0	25	6.1
Tennessee*	44.4	50.0	36	8.8
Totals	39.2	59.1	(408)	100.0

* Alabama and Tennessee samples include 5 (7.5%) and 2 (5.6%) cases respectively for which no information was given about the type of offender.
** South Carolina data cover only the 3 years of 1969 through 1971.

APPENDIX TABLE 2. CLASSIFICATION OF OFFENDER AS TYPE OF PERSON OR ORGANIZATION IN 50% RANDOM SAMPLE OF (ACCIDENTAL) MISDEMEANOR FIRE CASES FOR THE PERIOD 1960 THROUGH 1971

Type of offender	Number	Percent
Persons:		
Male acting alone	140	34.3
Female acting alone	17	4.2
Several males	3	.7
Organizations:		
Railroads	116	28.4
Construction companies	25	6.2
Forest industries	35	8.6
Government agencies	51	12.5
Power companies	7	1.7
Chemical companies	4	1.0
Civic & sports clubs	3	.7
No information	7	1.7
Total cases	(408)	100.0

The majority of accidental fires (60%) were the direct result of activities associated with the functioning of some organization or agency. Often these fires were caused by individuals, but because they occurred in the context of official duties or activities associated with the purpose of the organization, individual accountability was not determined. One quarter of all accidental fires were caused by incidents associated with railroading such as "hot boxes" and work crews. A sizeable reduction in the number of accidental fires might be realized merely by stressing a greater concern for the forests among personnel in this one industry.

Addresses of accidental offenders were of considerable interest because of the contrast presented. Using only a simple classification of whether the offender's location was city, town, or county indicated that rural people accounted for a relatively small proportion of the accidental fires – less than 20 percent (App. Table 3). However, when the type of offender was considered, it was shown that there was a sharp distinction between organizations and persons. Organizations almost always had their business offices in cities or towns, whereas the individuals involved in causing accidental fires, usually lived in towns or in the open country near the areas burned.

Accidental fires clearly fall into two distinct categories. First and most common were fires associated with the activities of organizations (App. Table 4). Almost half (46%) of these fires were associated with railroading. Forest industries of several kinds

APPENDIX TABLE 3. CLASSIFICATION OF THE OFFENDER'S LOCATION (EITHER BUSINESS OFFICE OR RESIDENCE) FOR 50% RANDOM SAMPLE OF (ACCIDENTAL) MISDEMEANOR FIRE CASES IN SIX SOUTHERN STATES FOR THE PERIOD 1960-1971 BY TYPE OF OFFENDER

Location of offender	Type offender					
	Persons		Organizations		All	
	Number	Percent	Number	Percent	Number	Percent
City	10	6.3	141	58.5	151	37.0
Town	82	51.2	65	27.0	147	36.0
Country	60	37.5	13	5.4	78	19.1
Not known	8	5.0	22	9.1	32	7.9
Total cases*	(150)	100.0	(241)	100.0	(408)	100.0

* No information on the type of offender was available for 7 cases; therefore, the column totals equal only 401 cases.

APPENDIX TABLE 4. CLASSIFICATION OF PERSON'S OCCUPATIONAL TYPE AND KIND OF ORGANIZATION FOR 50% RANDOM SAMPLE OF MISDEMEANOR (ACCIDENTAL) FIRE CASES IN SIX SOUTHERN STATES FOR THE PERIOD 1960-1971

Occupational and organizational type	Number		Percent	
Persons		74		18.1
White collar	15		20.3	
Blue collar	34		45.9	
Farmers	11		14.9	
Military	2		2.7	
Students	2		2.7	
Housewives	10		13.5	
Organizations		246		60.3
Railroads	114		46.3	
Industries (forest)	80		32.5	
Construction	9		3.7	
Military	35		14.2	
Others	8		3.3	
No information		88		21.6
Total cases		(408)		100.0

accounted for another one-third (33%). Mississippi particularly appeared to have a significant problem with fires associated with military operations which accounted for 14 percent of the organizationally caused fires.

Individuals, acting independently of any organization, were responsible for far fewer accidental fires. When these fire-setters, primarily males, were classified by occupational type, it was revealed that blue collar workers of the skilled, semi-skilled, and unskilled types accounted for almost half the fires. White collar workers covering a broad range of professional, business, and office types of occupations were involved in only 20 percent of the cases. Similarly, the agricultural practice of farmers who burn the woods to control underbrush for grazing their cattle is well known, yet this practice did not appear to be a major factor

in accidental fires. Farmers were no more likely than housewives to be responsible for accidentally setting the woods on fire. A note of caution must be raised here however, because of the high incidence of missing information in the case reports. This deficiency was very common when the offenders were individuals.

The reputation of the offender was another item of information included on the fire trespass reports. Regrettably, this information was often not reported, or if so, only superficially. Reputation was differentiated according to its social and financial dimensions (App. Table 5).

Social reputation was not reported when an accidental fire was identified with some public or private organization. This was understandable because the concept of social reputation is individually oriented. But, at the same time, fewer than one-third (31%) of the case records involving persons included the investigator's rating of the offender's reputation. Moreover, when a rating was given, it was always assessed as being good. This means either that persons involved in accidental fires are really "solid" citizens in the community; or that the evaluations of social reputation provided by the investigating officers are not reflecting the character differences that exist among accidental fire-setters.

Interestingly, financial reputation ratings for persons involved in accidental fires showed much more differentiation. At the same time, financial reputation appeared to have little relevance for organizations. All of the organizations rated by the fire investigators were given "good" ratings. The validity of this is

APPENDIX TABLE 5. SOCIAL AND FINANCIAL REPUTATIONS OF THE OFFENDER FOR 50% RANDOM SAMPLE OF MISDEMEANOR (ACCIDENTAL) FIRE CASES IN SIX SOUTHERN STATES FOR THE PERIOD 1960-1971

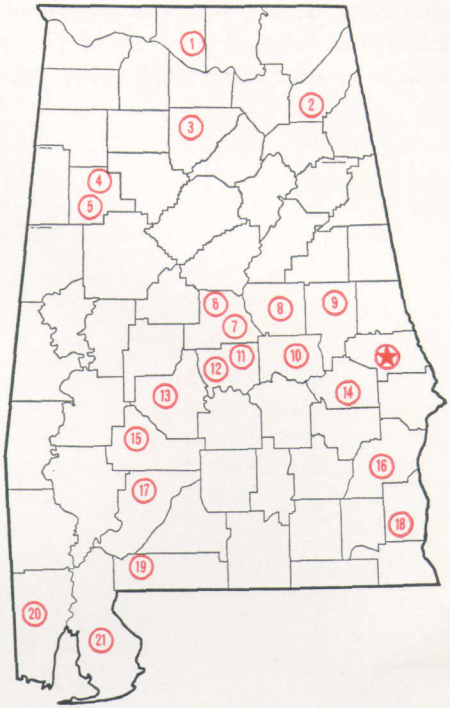
Rating	Reputation of offender*						
	Social			Financial			
	Persons		Organizations**	Persons		Organizations	
	Number	Percent		Number	Percent	Number	Percent
Good	45	90.0	----	44	62.0	232	100.0
Questionable	2	4.0	----	6	8.4	0	----
Bad	3	6.0	----	21	29.6	0	----
No information	110	68.8	----	89	55.6	9	3.7
Total Cases	(160)	----	(241)	(160)	----	(241)	----

* There was no type of offender information for 7 cases.
** This information was not reported when the offender was an organization rather than a person.

suspect when one considers the small pulpwood and other organizations included in this category of accidental fire-setters. By comparison only 62 percent of the persons involved with accidental fires were reported to have "good" financial reputations.

Alabama's Agricultural Experiment Station System
AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Thorsby Foundation Seed Stocks Farm, Thorsby.
7. Chilton Area Horticulture Substation, Clanton.
8. Forestry Unit, Coosa County.
9. Piedmont Substation, Camp Hill.
10. Plant Breeding Unit, Tallassee.
11. Forestry Unit, Autauga County.
12. Prattville Experiment Field, Prattville.
13. Black Belt Substation, Marion Junction.
14. Tuskegee Experiment Field, Tuskegee.
15. Lower Coastal Plain Substation, Camden.
16. Forestry Unit, Barbour County.
17. Monroeville Experiment Field, Monroeville.
18. Wiregrass Substation, Headland.
19. Brewton Experiment Field, Brewton.
20. Ornamental Horticulture Field Station, Spring Hill.
21. Gulf Coast Substation, Fairhope.