FIRELINE SAFETY GRAM

#15

87-02

PREPARED AND DISTRIBUTED ON BEHALF OF THE NATIONAL WILDFIRE COORDINATING GROUP
Post Office Box 96090, Room 1004 RPE, Washington, D.C. 2090-6090

FORTY - ONE FIREFIGHTERS DEPLOY FIRE SHELTERS

INCIDENT SUMMARY: A blow-up fire situation that occurred at 0100 on a fire in the Southwest in late June resulted in 41 firefighters deploying shelters. There were no injuries related to the incident.

Suppression efforts were initiated on June 17 with a hotshot crew. The following day, a Class II team was assigned to the fire. The fire was located in a mountainous region, with line work being executed along a ridge. On June 19, the day shift assignment dealt with constructing line to prepare for a possible burnout operation by the night shift. Four crews plus one additional squad of hotshots were working the night shift, with the planned objective to complete and improve the line, then initiate burnout. Construction of line was begun at 2000, widening and improving the line on the ridge prior to burnout. It was finished by 2140.

Until 2130 fire weather had been calm. But shortly after 2130, brush burned from the bottom of the draw to close to the top of the ridge where the hotshot squad was burning out the line above the bluff. This fire created several spot fires outside the line.

Between 2200 - 2330, crews were engrossed with locating and controlling spot fires. Fire behavior at this time consisted of a creeping fire on the opposite slope, and ground fire activity at the bottom of the draw and on the slope below the crews. Winds were relatively calm, shifting downslope; humidity was 30%.

Mop up on spots was completed at 0045. But two crews, returning to a helispot area, observed a surge in fire activity. Green slash on the line was burning, and the fire below was torching individual trees.

At approximately 0055, the fire in the draw took off. Just before it hit the ridge top, a Division supervisor alerted strike team leaders. The fire rolled over the line in a saddle area, catching some crew members unawares. They tried to reach a safe area, but feeling the fire intensity, decided to deploy shelters.

Other crews were able to retreat to rock slide and burned areas and did not deploy shelters. But eleven firefighters in one crew were trapped below the bluff and were forced to use their shelters. One hundred firefighters were involved in the suppression effort; 59 individuals did not have to go to the "last resort" of shelter deployment.

INCIDENT ANALYSIS/CONCLUSIONS:

1. Eleven firefighters apparently were in a life-threatening situation, with no alternative other than shelter deployment. However, 30 individuals had safe alternatives which were not selected.
2. Radio and verbal communication from overhead indicating deployment being initiated caused chain reaction.
3. Most individuals did not select a clear spot or clear an area prior to deployment. Duration of deployment ranged from five to 30 minutes. Some shelters were used as shields rather than tents.
4. Safety zones and escape routes were not specifically identified.
5. Shift plans and briefings did not include fire behavior and fire weather forecasts.
6. The Class II team did not have the experience necessary to handle the complexity of the fire that developed.
7. Overhead team did not have a Fire Behavior Analyst planned or ordered.
8. There was no burning plan for the June 19 night shift.
9. At least five Standard Fire Orders were violated. Eight "Watch Out" situations were present.

F Fight fire aggressively but provide for safety first.

I Initiate all action based on current and expected fire behavior.

R Recognize current weather conditions and obtain forecasts.

E Ensure instructions are given and understood.

O Obtain current information on fire status.

R Remain in communication with crew members, your supervisor, and adjoining forces.

D Determine safety zones and escape routes.

E Establish lookouts in potentially hazardous situations.

R Retain control at all times.

S Stay alert, keep calm, think clearly, act decisively.

8/4/87

Since this incident occurred prior to getting this form. I have attached a incident report for your information.

Steve Sorvis
Capt P.M.D.

#15

GILA
NATIONAL
FOREST

HAYSTACK

INCIDENT

SHELTER

DEPLOYMENT

JUNE 20, 1987

TABLE OF CONTENTS

I. INVESTIGATION TEAM - HAYSTACK FIRE SHELTER DEPLOYMENT

On June 20, 1987, upon learning of a fire shelter deployment incident on the Haystack Fire, Supervisor Dahl organized an investigation team. The team is made up of a cross section of Regional personnel consisting of:

Toby Martinez	- Team Leader	-	R&W Staff, Gila N.F.
Bob Wagenfehr	- Member	-	Tbr, Fire/WS Staff, Tonto N.F.
Dan Winner	- Member	-	Aviation & FM, Regional Office
Cliff Claridge	- Member	-	FMO, Quemado R.D., Gila N.F.
Bob Lehman	- Member	-	Tbr, WS/Soils Staff, Gila N.F.

Objectives of the team were to gather facts, analyze information, and make recommendations to assist in minimizing the potential for the reoccurrence of similar incidents.

II. THE INCIDENT

At approximately 0100 MDT, June 20, 1987, a blowup occurred on Division C of the Haystack Fire, resulting in the deployment of 41 fire shelters.

III. CHRONOLOGICAL STATEMENT OF EVENTS LEADING UP TO INCIDENT

The Haystack fire was discovered on June 15, 1987. At that time the District chose to place the fire under surveillance since it was in a low resource value area. On June 17, the Glenwood District Fire Management Officer flew the fire. It was discovered that the Haystack fire had been mislocated by approximately two miles. The correct location of the fire was in a moderate resource value area and spreading toward a high resource value area. The decision was made at this time to take suppression action on the Haystack Fire. The Negrito Hotshots were assigned and on the line by late afternoon. At approximately noon on June 18, a Class II overhead team was ordered for the fire. Because of other fire activity on the Forest, the Gila Class II Team was not used. The Lincoln Class II Team was assigned to the Haystack Fire, arriving on the Forest that evening.

On June 19, the day shift assignment on Division C consisted of building as much line as possible along the division in preparation for a possible burnout operation by the night shift. The Negrito Hotshots and the Payson Hotshots were on this assignment. Line construction was started at Helispot I (see Appendix C) and proceeded to the east along the top of the ridge, and was tied into a bluff. It was started again below the bluff and continued to a rock outcrop below the main saddle, about one third of the way up from Sacaton Canyon.

The night shift assignment for June 19/20 was to complete the line on Division C and to improve the remainder of the line for a burnout. The objective was to complete the burnout by midnight. Crews assigned on these tasks were Mescalero Hotshots, Zuni 5, Carlsbad I.A., Acoma 1, and one squad of Smokey Bear Hotshots.

The Smokey Bear Hotshots and Zuni 5 were flown to Helispot #1 and Mescaleros were flown in to Helispot #3. The Acoma 1 and Carlsbad crews were transported by crew carrier to drop point #13, and walked up Sacaton Canyon to the line. Transportation of crews was completed at approximately 1930.

The Negrito and Payson Hotshots had gone to Helispot #3 and gone off shift. They were to spend the night there and go back on the line the next day. Construction of line on top of the Division was started at about 2000. The Zuni and Mescalero Crew worked from the upper section below the bluff and the Acoma and Carlsbad crew worked from Sacaton Canyon toward the upper crews. The crews had saws in the lead, widening the line, and crew members constructing and improving line. The line construction was completed at 2140 and the crews took a break. At this point the four crews (all except Smokey Bear Hotshots) were located above Helispot #3 along the line.

Fire behavior and fire weather up until 2130 had been calm. The Smokey Bear Hotshots began to burnout the top of the Division from Helispot 1 at this time. Fire on the opposite slope had been creeping down and the wind had been upslope 0-3 miles per hour. Between 2130 and 2200 an unburned stringer of brush burned from the bottom of the draw into some rock out croppings which were close to the top of the division where the Smokey Bear Hotshots had completed burning out the line above the bluff. The fire created two or three spots outside the line. The Smokey Bear Hotshots requested and received permission from Division Supervisor Calvin Morris to locate and put out the spot fires. At this same time, Frank Spindler (Division Supervisor, Day Shift) called Calvin Morris and told him that he could see two spot fires on the east side of the ridge. Frank requested and received permission from Operations Chief Larry Schmidt to assist with the spot fires. Both spots were approximately 50 yards below the line. Joe Romero is also requested to assist with the spot fires.

Between the 2200-2330, the upper crews are involved in locating and putting out spot fires. The lower crews are shifted up the line where they occupy themselves breaking down fuels and observing for spot fires.

Fire behavior at this time consists of a continuing creeping fire on the opposite slope plus ground fire activity at the bottom in the draw and on the slope below the crews. Winds are calm and shifting downslope. Humidity is estimated at 35%. The only reading taken was of 2130 on top of the division. The reading was 30% humidity.

At 2345, Joe Romero, along with half of the Zuni and the Mescalero Hotshots, tied in with Frank Spindler on the hot spots. The other half of the Zuni's remained to assist Smokey Bear Hotshots with spot fires.

Weather conditions of 2400 are noted to be favorable for the burnout. This, however, is not started because of the work on the spot fires.

Most of the mop up was completed at 0045. The Negrito and Payson Hotshots returned to Helispot #3 along the line. Along the way, they notice and express concern to individuals on the line with the fire behavior. Green slash on the line is burning, and the fire below is crowning on individual trees. This activity is also noted by Strike Team Leader Clark Taylor.

At approximately 0055, the fire in the draw (See Appendix C Point X) initiates its run. The only person who can actually see this is Clark Taylor. Everyone else is not in position to observe. Approximately one minute before the first edge of the fire arrives at the top of the ridge, Calvin Morris, Division Supervisor, calls on the radio and alerts Strike Team Leaders of the fire activity below. He receives acknowledgement. The fire blowup first hits the line below the saddle. It catches Frank Hayes and Bobby Garley by surprise, and three crew members, as they are running along the ridge trying to get to a safe area. They feel the heat intensifying so they decide to deploy their shelters. Frank calls on radio that they are deploying shelters. Bobby shouts command to the Acoma crew to move up the line and to deploy their shelters. His command, however, is not heard by his crew leader, Aaron Pino. Aaron observes that the fire has reached Bobby Garley and is coming around them on the upper side. He attempts to get the crew up the ridge, but due to loose terrain, is not able to make much progress. Fire has started to surround them so he gave orders to deploy shelters. Eighteen shelters were deployed for nineteen individuals, one person was unable to open the shelter.

Immediately above the Acoma were seventeen members of the Carlsbad crew. These individuals retreated to the slide and to burned areas. None of them deployed shelters. The crew members that did were with Frank Hayes and Ken Schein, Strike Team Leader. One Carlsbad crew member was with Ken Schein and deployed right above the Acoma crew. The Mescalero crew and part of the Zuni crew had just gotten back to the line from working spot fires when the blowup hit the line. The Zuni crew was able to reach the slide and did not deploy. Most of the Mescalero also managed to reach safe areas. Manuel Diaz, Mescalero Superintendent, and four other deployed their shelter near the line where the trail to Helispot #3 left the line.

The remainder of the Zuni crew was working near the upper end of the shoot when the fire reached them. They managed to reach a bluff where they couldn't go beyond. All eleven individuals deployed at this place.

The amount of time spent in shelters varied from 5 to 30 minutes. Several individuals on the upper end used the shelters as shields rather than getting in them. Duration of blowout was less than five minutes.

Immediately after blowup, overhead initiated a count of people. No injuries were noted and most people were under control.

The slopover resulting from the blowup had line built. The crews were organized and instructed to gather shelters and tools and started walking out to drop point 13 at 0300.

IV. ANALYSIS OF DEPLOYMENT

1. Fifty-nine individuals did not deploy.

2. Most deployment occurred close to safe areas.

3. Eleven people appear to have been in a potentially life threatening situation. When it blew up, they had no choice.

4. Thirty individuals had safe alternatives which were not selected.

5. Element of surprise.

6. Radio and verbal communication indicating deployment being initiated caused chain reaction up the line.

7. Overhead initiating the deployment possibly contributed to reaction.

8. Deployment occurred over a distance of approximately 250 yards.

9. Two separate fronts of the blowup overran crews.

10. Duration of each front was between 3 to 5 minutes.

11. Duration of deployment varied from 5 to 30 minutes.

12. Most individuals did not clean an area where they deployed or select a clear spot.

13. One person deployed on line next to slash created from line building.

14. All deployed shelters were removed prior to investigation.

15. One individual in Acoma crew doubled up with the crew boss.

16. Some shelters were used as shields rather than tents.

17. Control by crew leaders during deployment was maintained and helped in preventing injury and panic.

18. All individuals had received shelter deployment training and had seen video. They felt this training is valuable.

19. Steep, rocky and loose surface contributed to the decision to deploy rather than seek other safe areas.

20. Darkness and unfamiliarity of terrain.

21. Follow through after deployment by line overhead was good and exhibited a professional attitude in completing the shift as planned.

22. Lincoln Class II team had not been on a fire in six years as a unit.

23. Night shift plan was sound.

24. Safety zones and escape routes were not specifically identified.

25. All overhead were redcard qualified for the positions they filled.

V. INVESTIGATION TEAM'S OBSERVATIONS OF FACTORS THAT LED TO DEPLOYMENT

A. PLANNING SECTION

1. Lack of fire behavior analyst as an assigned position. *

2. Fire behavior forecasts were not done. *

3. Spot forecasts were not requested. *

4. Fire front maps were not made by shift. *

5. Did not know where fire progress was for planning sessions.*

6. No burning plan was prepared for burnout operation. *

7. Field intelligence was not gathered by planning section. *

8. Shift plans and briefings did not include fire behavior and weather forecasts. *

9. Safety - plan emphasized transportation safety. *

B.. OPERATIONS

1. Spot weather readings were not requested or taken by line overhead. *

2. Separate burning team had not been designated. *

3. Division supervisor was not in place to properly direct operations. **

4. Communication gaps existed throughout the line. **

5. Strike team leader, who was in a good location to observe fire activity on the division, noticed fire beginning to make its run 10 to 15 minutes prior to blowup and did not inform anyone. *

6. Absence of fatigue helped minimize potential for injuiry.

7. No lookouts were designated and posted. *

8. Thirty individuals had just gotten to top of ridge from working slopover on east side of ridge when it blew up. They were not aware of what main fire was doing for three hours. **

9. Division supervisor, assuming role of lookout, was not in position to observe origin of blowup. *

10. Indications of erratic and extreme fire behavior were observed between 2130 and 2200 - approximately three hours prior to blowup. *

11. Underreaction to seriousness of the overall fire situation is evident by all assigned division overheads on Division C. *

* Complete violation of Fire Fighting Orders.
** Partial violation of Fire Fighting Orders.

VI. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSION 1

The Lincoln Class II Team did not have the experience needed to handle the complexity of the fire that developed by the night shift of June 19. Replacements in the operations sections contributed to the team's inability to manage the evolving complex situation.

RECOMMENDATION:

1. Interagency Board or Forest monitor the performance and experience levels of all fire teams. Identify when it is appropriate to order more experienced resources.

2. The Interagency Board needs to evaluate and set policy on the maximum number of team members dispatched outside their local area and specify the maximum number of replacements.

CONCLUSION 2

The Class II Team did not have a Fire Behavior Analyst planned or ordered. There is not an available or qualified FBA in the Lincoln Area. Other shortages are likely in the future.

RECOMMENDATION

1. An interagency decision should be considered to require all Class II area teams to designate a FBA. Training and designating a FBA from some other area as well as automatic orders for a FBA are possible long and short term solutions. All agencies explore the appropriateness of combining area Class II teams.

CONCLUSION 3:

There was no burning plan for June 19 night shift. There was no burning team assigned, i.e. Firing Boss, FBA, Safety Officer. Current policy on this matter is unclear.

RECOMMENDATION

Parent interagency board adopt the requirement that all burnout operations have a separate burn plan with appropriate overhead to manage burn out depending on complexity.

CONCLUSION 4:

At least five standard fire fighting orders were violated. Eight of the 13 situations that should have been looked for were present. Safety personnel appeared to focus heavily on transportation and not on the line operation and the planned burnout.

RECOMMENDATION

1. Assistant Safety Officer must be assigned for every shift on the line that involves potentially hazardous operations.

2. Revise Fire Overhead Performance Rating form to require that operations personnel be rated on compliance with the Standard Fire Fighting Orders (see Appendix).

3. Require all fire-going personnel to view National-Wildfire Coordination Group film, "Standards for Survival".

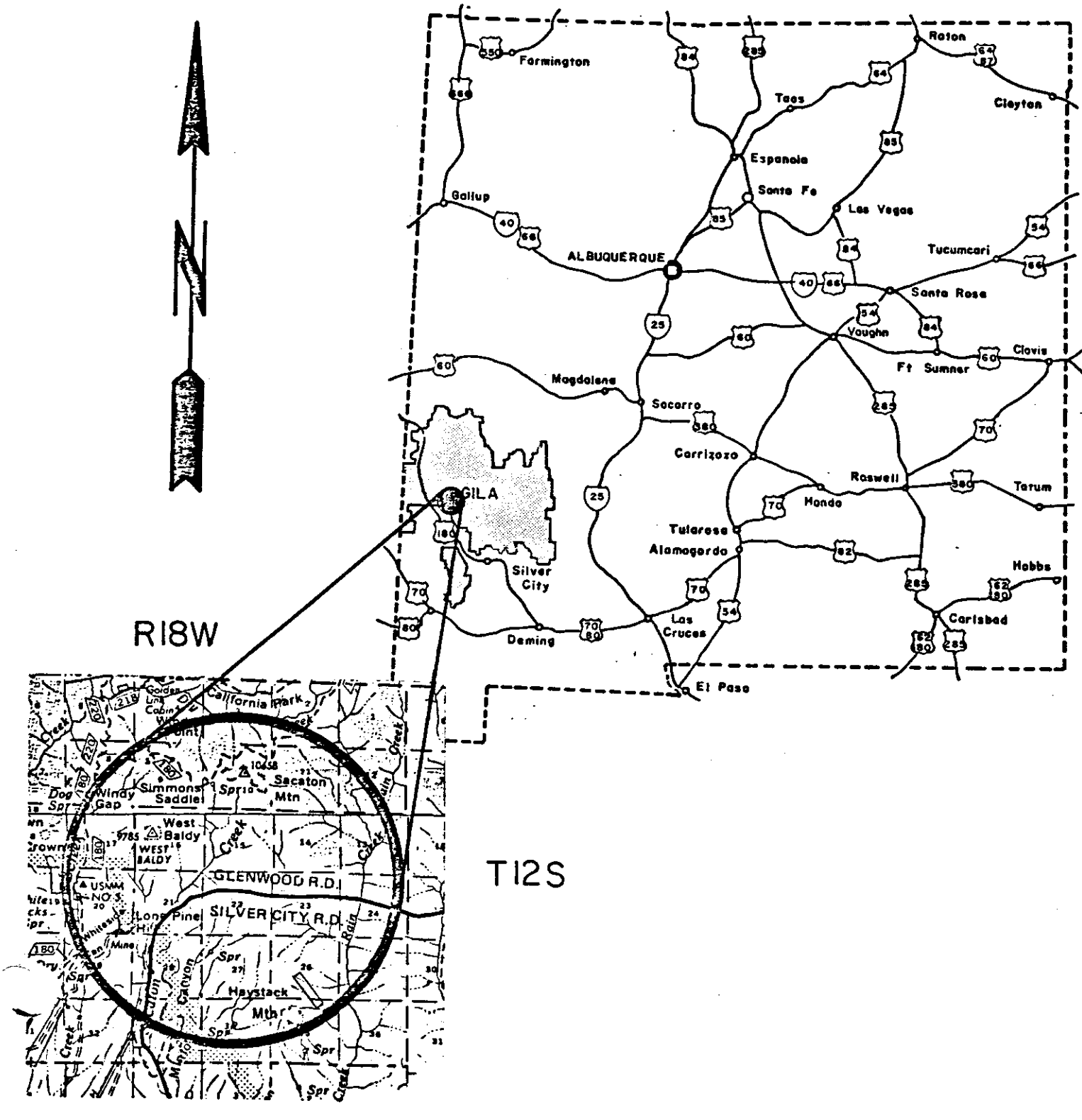
4. Print the following on all fire shelters:

"CAUTION - VIOLATION OF ANY 10 FIRE FIGHTING ORDERS MIGHT REQUIRE USE". (See Appendix E).

VII. FOLLOWUP ON INVESTIGATION AND REPORT RECOMMENDATIONS. During the course of the investigation, the Lincoln Class II Overhead Team initiated changes in both their organization and operating procedures to correct difficiencies. It should also be noted that four shifts after the fire shelter deployme2t, the burnout operation on Division C was done in a safe and successful manner.

The Investigation Teams' recommendations from this report will be reviewed by the Gila National Forest Supervisor for Forest implementation and Regional Office review.

SHEET | OF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Alamogordo
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Carlsbad
Las Cruces
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SILVER CITY R.D.
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Haystack Mtn
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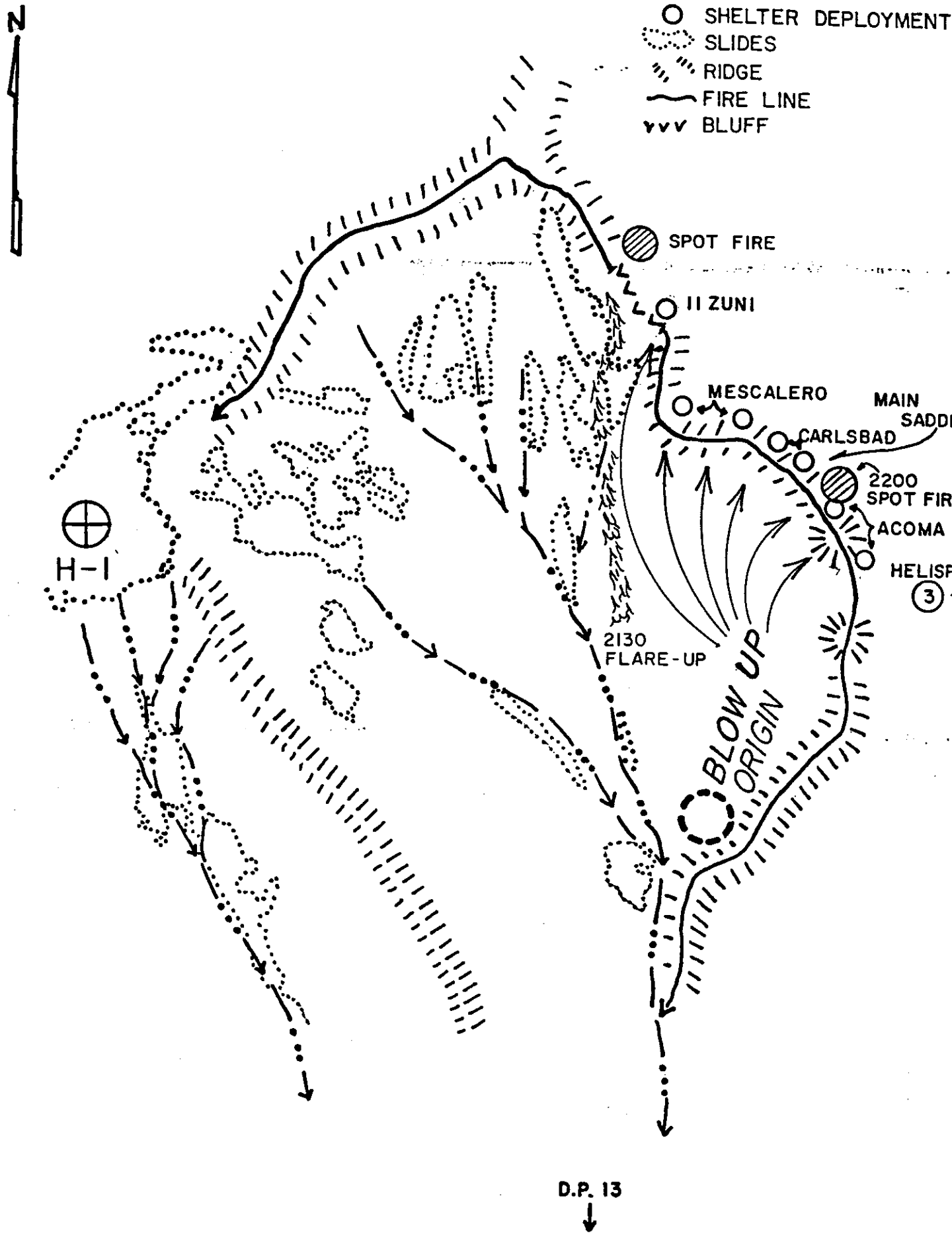
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2200
SPOT FIR
ACOMA
HELISP
3
H-I
2130
FLARE-UP
BLOW UP
ORIGIN
D.P. 13

FIRE OVERHEAD PERFORMANCE RATING

INSTRUCTIONS: The immediate job supervisor will prepare this form for eac subordinate overhead. It will be delivered to the plans chief before the rater leaves th fire. Rating will be reviewed with employee who will sign at the bottom.

This rating is to be used only for determining an individual's fire fighting qualifications.

Name of Fire Fighter	2. Fire Name and Number

3. Home Unit *(Address)*	4. Location of Fire *(Address)*

5. Fire Position	6. Date of Assignment From: To:	7. Acres Burned	8. Fuel Type(s)

9. Evaluation

Enter X under appropriate rating number and under proper heading for each category listed. Definition for each rating number follows:

0 – Deficient. Does not meet minimum requirements of the individual element.
DEFICIENCIES MUST BE IDENTIFIED IN REMARKS.

1 – Needs to Improve. Meets some or most of the requirements of the individual element.
IDENTIFY IMPROVEMENT NEEDED IN REMARKS.

2 – Satisfactory. Employee meets all requirements of the individual element.

3 – Superior. Employee consistently exceeds the performance requirements.

Rating Factors	Hot Line				Mop-Up				Camp				Other (Specify)		
	0	1	2	3	0	1	2	3	0	1	2	3	0	1	2
Knowledge of the Job															
Attention to Fire Fundamentals															
Ability to Obtain Performance															
Practices Race and Sex Equality															
Attitude															
Decisions under Stress															
Initiative															
Consideration for Personnel Welfare															
Obtain Necessary Equipment and Supplies															
Physical Ability for the Job															
Safety (OPERATIONS PERSONNEL - COMPLIANCE TO 10 FIRE FIGHTING ORDERS)															
Other *(Specify)*															

10. Remarks

11. Fire Fighter *(Signature)*. This rating has been discussed with me.	12. Date

13. Rated By *(Signature)*	14. Home Unit	15. Position on Fire	16. Date

APPENDIX E

CAUTION

VIOLATION OF ANY

10 FIREFIGHTING ORDERS

MIGHT REQUIRE USE

[redacted]

Stamp

From [redacted]

file somewhere

Stan - For your Info.
Mickey.
Intel. Desk

NIFCC Intelligence Section
3905 Vista Ave.
Boise, ID 83705

Fold Here

Fold Here

HAYSTACK FIRE, GILA N.F.

Accident/Incident Report For Fire Entrapment or Burns

June 1986

Introduction

The information asked for on this form is important for the continued effort to evaluate and improve personal protection gear for firefighters. It is not intended as a critique of personnel actions in entrapment incidents. Your honest evaluation will help determine problems and future needs of protective equipment.

Reporting Instructions

Complete this report only for serious fire-related incidents or accidents. Notify the National Interagency Fire Coordination Center's (NIFCC) Intelligence Section in Boise of the accident or incident within 24 hours. Submit the written report within 72 hours.

If a fatality or other major fire-related accident or incident occurs, notify the NIFCC Intelligence Section immediately.

NIFCC Intelligence Section
3905 Vista Ave.
Boise, ID 83705

Commercial (208) 334-9409
FTS 554-9409

Fire or Burn Name: HAYSTACK	Location (state): NEW MEXICO
Date: 6/20/87	Management Unit (N.F., N.F., District etc.): GILA N.F.

General (Check appropriate boxes.)

- ☐ Firefighter trapped w/o fire shelter.
- ☒ Firefighter trapped in fire shelter.
- ☐ Burn/smoke injuries incurred while in fire shelter.
- ☐ Burn/smoke injuries incurred while escaping entrapment.
- ☐ Burn/smoke injuries incurred while fighting fire.
- ☐ Fatality occurred.
- ☐ Serious injuries.
- ☒ No serious injuries or fatalities.

Entrapment Information

- ☒ Fire shelter was used and performed satisfactorily.
- ☐ Fire shelter used. Unsatisfactory performance resulted.
- ☐ Fire shelter was available but not used.
- ☐ Fire shelters were unavailable.

Comments: 4/ Shelters were Deployed - Some were not used & some were for precautionary reasons.

Circumstances Related to Burn/Smoke Injuries

- ☐ Fire shelter was not associated with the injury.
- ☐ Injuries occurred while person was inside shelter.
- ☐ Injuries occurred while crawling or walking underneath a shelter.
- ☐ Injuries occurred due to failure or loss of shelter.

Provide background information or explanation for block(s) you checked: NO Injuries Reported to EMT's or Fire Team

Field Trial Form—NFES No. 0869
PMS No. 405-1

Nature and Severity of Injury(s)

Check Appropriate Columns and Boxes	Fatality	Severe Injury Hospitalized	Not Severe Hospitalized	Treated and Released	No Physician's Treatment Req'd	Additional Comments or Description
Smoke inhalation						
Inhalation of hot gases and/or flames						
Burns of head, face or neck						
Burns of arms or trunk (area covered by shirt)						
Burns of buttocks, hips, thighs or lower legs (areas covered by trousers)						
Burns of hands—*type of glove:*						
Burns of feet—*type/model of boot:*						
Shock, dehydration or other: Specify						
Struck by falling or flying object						

Role of Garments/Personal Protective Equipment (Complete only for those items associated with accident/injury)

Check Appropriate Columns and Boxes		Item worn during incident	Degree of Protection Provided: Excellent	Good	Fair	Poor	Item Failed	Additional Description of Item—Manufacture, Material, Etc.
Fire shelter	Identify by contract name, no. & date							
Hardhat UNKNOWN	Metal							
	Plastic							
Goggles UNKNOWN	If known, specify model:							UNKNOWN
Face protection UNKNOWN	Bandana							
	Nomex shroud-California type							
	Other (specify)							
Shirt	Flame-resistant Nomex-GSA	X	X					
	Other (specify)							
Undershirt— UNKNOWN	T-shirt							
	Other (specify)							
Trousers	Flame-resistant Nomex-GSA	X	X					
	Other (specify)							
Gloves	Forest Workers Leather-GSA	X	X					
	Other (describe)							
Coat UNKNOWN	Flame-resistant brush coat							
	Other (describe)							
Boots UNKNOWN	High top (8") leather							
	Low top leather							
	Other than leather (describe)							

Background Information

Specific location of accident/incident on fire (burn).

Branch _____ Division C

Other (specify) _____

Fire overhead:

Division Supervisor Calvin Morris Strike Team Leader Ken Shearer, Joe Romero

Prescribed Burn Overhead NONE

Circumstances surrounding accident/incident (describe): _____

(additional space is provided on page 4)

Statement or comments regarding accident/incident: _____

Person Involved In Accident/Incident

Name Humans - 41 People

☒ Firefighter Acoma Crew 20 people (crew name)

☒ Overhead Various (position)

Home Unit Address _____

Home Unit Telephone _____

Others Involved In Accident/Incident

Name	Overhead: Position On Fire	Crew Name
10 People	Crew members	ZUNI
5 People		Moreno #5 Crew
6 People were OFF on 16 V Crew Passes		

Accident/Incident Report
For Fire Entrapment or Burns

June 1986

Introduction

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If a fatality or other major fire-related accident or incident occurs, notify the NIFCC Intelligence Section immediately.

NIFCC Intelligence Section
3905 Vista Ave.
Boise, ID 83705

Commercial (208) 334-9409
FTS 554-9409

Fire or Burn Name	Location (state)
Haystack	Glenwood, New Mexico
Date	**Management Unit (N.P., N.F., District etc.)**
June 20, 1987	Gila National Forest/Glenwood RD

General (Check appropriate boxes.)

- [ ] Firefighter trapped w/o fire shelter.
- [X] Firefighter trapped in fire shelter.
- [ ] Burn/smoke injuries incurred while in fire shelter.
- [ ] Burn/smoke injuries incurred while escaping entrapment.
- [ ] Burn/smoke injuries incurred while fighting fire.
- [ ] Fatality occurred.
- [ ] Serious injuries.
- [ ] No serious injuries or fatalities.

Entrapment Information

- [X] Fire shelter was used and performed satisfactorily.
- [ ] Fire shelter used. Unsatisfactory performance resulted.
- [X] Fire shelter was available but not used.
- [ ] Fire shelters were unavailable.

Comments: In this incident the fire shelter worked good. Some of the crew members had to double up in two fire shelters.

Circumstances Related to Burn/Smoke Injuries

- [ ] Fire shelter was not associated with the injury.
- [ ] Injuries occurred while person was inside shelter.
- [ ] Injuries occurred while crawling or walking underneath a shelter.
- [ ] Injuries occurred due to failure or loss of shelter.

Provide background information or explanation for block(s) you checked: _____

Field Trial Form–NFES No. 0869
PMS No. 405-1

Nature and Severity of Injury(s)

Check Appropriate Columns and Boxes	Fatality	Severe Injury Hospitalized	Not Severe Hospitalized	Treated and Released	No Physician's Treatment Req'd	Additional Comments or Description
Smoke inhalation					X	
Inhalation of hot gases and/or flames					X	
Burns of head, face or neck					X	
Burns of arms or trunk (area covered by shirt)					X	
Burns of buttocks, hips, thighs or lower legs (areas covered by trousers)					X	
Burns of hands—*type of glove:*					X	
Burns of feet—*type/model of boot:*					X	
Shock, dehydration or other: Specify					X	
Struck by falling or flying object					X	

Role of Garments/Personal Protective Equipment (Complete only for those items associated with accident/injury)

Check Appropriate Columns and Boxes		Item worn during incident	Degree of Protection Provided: Excellent	Good	Fair	Poor	Item Failed	Additional Description of Item—Manufacture, Material, Etc.
Fire shelter	Identify by contract name, no. & date Anchor Indu - 12/85	X	X					New fire shelter
Hardhat	Metal	X		X				
	Plastic							
Goggles	If known, specify model:							
Face protection	Bandana	X		X				
	Nomex shroud-California type							
	Other (specify)							
Shirt	Flame-resistant Nomex-GSA	X	X					
	Other (specify)							
Undershirt—	T-shirt	X		X				
	Other (specify)							
Trousers	Flame-resistant Nomex-GSA	X	X					
	Other (specify)							
Gloves	Forest Workers Leather-GSA	X		X				
	Other (describe)							
Coat	Flame-resistant brush coat	X	X					
	Other (describe)							
Boots	High top (8") leather	X		X				
	Low top leather							
	Other than leather (describe)							

United States Department of Agriculture | Forest Service | Mt. Taylor RD

Reply to: 5130 Date: July 6, 1987

Subject: Deployment of Fire Shelters-Haystack Fire

To: Mike Baca, Supervisory Forester

The following depicts the chain of events that led to the deployment of fire shelters on the Haystack Fire.

During the afternoon briefing on June 20, 1987, I found out that the Acoma 1 Crew and myself were going to be working with the Carlsbad Crew on Division C of the Haystack Fire.

We were to be picked up at 1800 at Drop Point 11 and taken to Division C. Upon arriving at Division C we met with Calvin Morris (Div. Sup.) and were given instructions on the job we were to accomplish. We then began our hike in to the fire through a drainage and up into a canyon. The Carlsbad Crew was about 100 yards ahead of the Acoma Crew as we began improving the fire line. The whole time the Acoma Crew and I were hiking into the fire, we observed the flare ups in the canyon to the west. We continued to hike up the fire line to the saddle where we were to meet with the Carlsbad Crew. When we arrived, the Carlsbad Crew kept on hiking up and two of the members stayed with us as qualified sawyers. We observed that the fire had flared up about a 1/4 of the way down the canyon. The way the wind was blowing the fire was going different directions. The inversion lifted, the fire increased, and made it's run up the drainage below us. At that time, I told my crew to move down the fire line (south). By then the heat of the fire was on us, then I told the crew to move up on the fire line. Frank, the Crew Rep. of the Carlsbad Crew, had come back to check on his sawyers. We both went to check the flare up below the crews. By then it was to hot to take a look, we both started to run. The fire had blown up below us. I yelled at the Acoma Crew to run up the fire line and deploy their fire shelters. By that time, the fire had hit where the crew was at. I know the heat was intense. The fire then blew up right where we were at. Frank and I and the two sawyers deployed our fire shelters. As the fire continued to make its run most of the Carlsbad Crew also deployed their shelters. They were about 100 yards above the Acoma Crew. I thought I had lost some of my crew members because of the heat and the way it blew up in front of them. Meanwhile, the fire came over me. My fire shelter worked good. I did not feel that much heat when the fire went over. When the fire cooled down, Frank and I came out of our shelter to clean around the area. The duff was burning and creeping toward us. We moved the other three people (two sawyers and 1 Acoma Crewmember who had run down) to the cleaned area. We got into our shelter again because a large tree on the ground flared up next to us. I spent about 20 minutes in my fire shelter. The crew was in their fire shelters for 30 minutes. After the fire cooled down again Frank and I got out of our shelters and checked on our crews. Everyone was shook up, but physically ok.

Our STL had notified the Division Supervisor of our situation and we are all directed to return to the Drop Point. Upon arrival at the Drop Point we were returned to camp.

Bobby L Garley

BOBBY L. GARLEY
Forestry Technician

Background Information

Specific location of accident/incident on fire (burn).

Branch _____ Division C

Other (specify) _____

Fire overhead:

Division Supervisor Calvin Morris Strike Team Leader Kevin Schein

Prescribed Burn Overhead _____

Circumstances surrounding accident/incident (describe): _____

See Enclosure

(additional space is provided on page 4)

Statement or comments regarding accident/incident: _____

Person Involved In Accident/Incident

Name Bobby Garley

☐ Firefighter Acoma #1 (crew name)

☐ Overhead Crew Rep. (position)

Home Unit Address Mt. Taylor RD

1800 Lobo Canyon Rd., Grants, NM 87020

Home Unit Telephone (505)287-8833

Others Involved In Accident/Incident

Overhead		*Crew Name*
Name	Position On Fire	
Frank Hayes	Crew Rep.	Carlsbad Crew

United States Department of Agriculture | Forest Service | Gila NF | 2610 N. Silver Street Silver City, NM 88061

RECEIVED-USFS
JUL 06 '87
FIRE

Reply To: 5130/6700

Date: July 1, 1987

Subject: Haystack Incident Fire Shelter Deployment

To: Regional Forester, R-3

Enclosed for your information and analysis is the Haystack Fire Shelter Deployment Investigation Team's report. The direction I gave the investigation team was to find the mistakes that were made which led up to the deployment of 41 fire shelters. Admittedly, a majority of the Class II team's incident management activities were appropriate. Unfortunately, everything that was done "right" would have been of little value to 41 fire fighters and their families if they had been seriously injured or killed because of a "few" mistakes. For this reason, the report and my subsequent review of it is not intended to be a balanced analysis of the Class II team's activities.

All Class II team members met the NIFQS requirements for the positions they held on the fire. Apparently, not all those that have the qualifications also have the skill (or quality) to do the assigned jobs. This is evidenced by 5 of the 10 Standard Fire Fighting Orders and 8 of the 13 Situations that "Shout Watch Out" being violated. A lot of reasons for this were given including:

a. First time the team was on a fire in 6 years.
b. Large number of substitutions.
c. Cutback in personnel reduces the pool to select from.
d. Politics of interagency team selection.
e. Inability to make changes on the team once it is operational.

Again, whatever the reasons, they would be of little comfort to 41 firefighters and their families if multiple fatalities and/or injuries had occurred.

I fully support the conclusions and recommendations in this report. In addition to implementing these recommendations, we are making the following changes on the Gila and I submit them to you for possible Regional implementation:

a. Increase the training of personnel. If a person has not actually worked in their red card assignment for two fire seasons they will go as a trainee in that position before going on a journeyman assignment.

b. Substitution. We will follow Class I team's procedures on allowing substituion of personnel. Our Class II team will be dispatched only if it meets that criteria.

c. Adjustment of skills after dispatch. Our Class II team will have authority in adjusting people's responsibilities commensurate with their skills to insure the highest skill demand positions have the highest skilled people in them.

	INITIAL	DATE
A&FM		
JH-DIR	✓	
BR	✓	
AB	✓	
JB (?)		
JH		
MM		
CS (?)		
TE (?)		
DM		
DW	✓	
WC	✓	
JE	✓	
[illegible]		
[illegible]		
[illegible]		
TW		
[illegible]		
AW		
[illegible]		
CS		
[illegible]		
[illegible]		

COPY FOR YOUR INFORMATION

In general, from my review, it appears that the reduction in personnel over the last 6 years or so is starting to catch up with our ability to provide personnel for fire suppression efforts "the way we used to" in R-3. From a Regional basis, I question if every Forest can field a Class II team. Perhaps, we need to determine the minimum number acceptable, pick the best possible people (including interagency), insure recency of experience as well as qualifications, and put them in some sort of rotation system like Class I teams.

We were fortunate in this situation. Numerous mistakes were made which resulted in the deployment of 41 fire shelters. Adherence to the Ten Standard Orders and the Thirteen Watch Out Situations, coupled with the knowledge of the effects of weather, fuels, and topography on fire behavior, must be recognized and provided for in the execution of tactical plans. Had this been done, the deployment of the fire shelters would have been unnecessary. Hopefully, we have learned enough from this incident where it will not be necessary in the future.

D.W. DAHL
Forest Supervisor

Enclosures (2)

cc:
Glenwood R.D. w/enclosure
Forest Supervisor, Lincoln N.F. w/enclosure
Bob Wagenfehr, Tonto N.F. w/enclosure
Cliff Claridge, Quemado R.D. w/enclosure

DWD:mjs