2005 SAFENET REVIEW

INTRODUCTION

The SAFENET system was created and established during the 2000 fire season in response to a recommendation from Phase III of the Wildland Fire Safety Awareness Study. It serves as a method for reporting and resolving safety concerns encountered in wildland fire (wildfire, wildland fire use, and prescribed fire) and all hazard incidents. It is a tool that allows front line wildland firefighters an avenue to pursue unresolved issues relating to safety.

The following is a review of the use of the SAFENET database for the FY 2005 fire season.

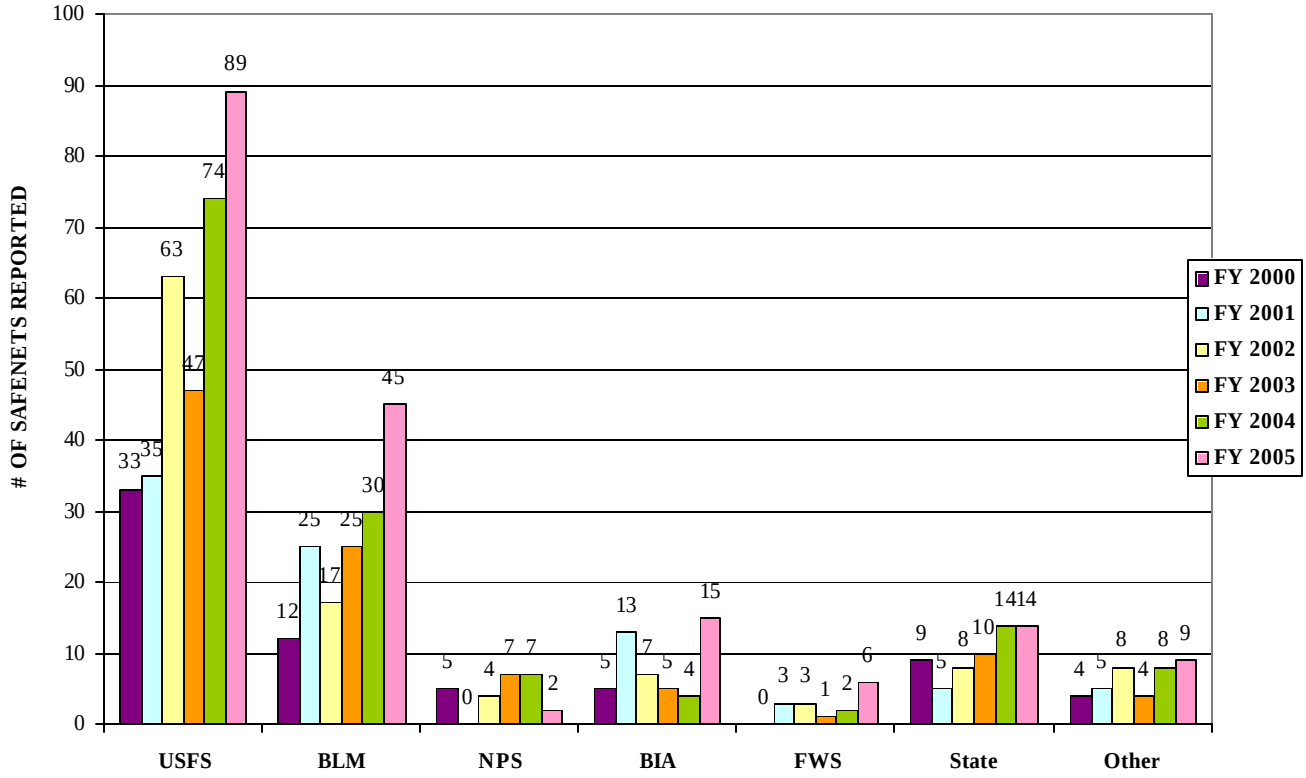
FY 2005 marked the sixth year of the SAFENET database operation and received the highest volume of submissions to date, with 180 SAFENETs filed between October 1, 2004 and September 30, 2005. The following table shows the comparison of submissions to the previous five years.

Total SAFENETs Filed	
FY 2000	68
FY 2001	93
FY 2002	110
FY 2003	99
FY 2004	139
FY 2005	180

This report is intended to serve as an analysis of SAFENET submissions in order for managers to recognize problem areas and determine patterns and trends in safety related issues, as seen by the field.

When a SAFENET is submitted it is forwarded to the jurisdictional agency responsible for the incident or event in question. This allows the jurisdictional agency to research the submission and take corrective action as necessary. Below is a graph showing the number of SAFENETs received by jurisdictional agency. The graph is cumulative from the inception of SAFENET in 2000 through the current season.

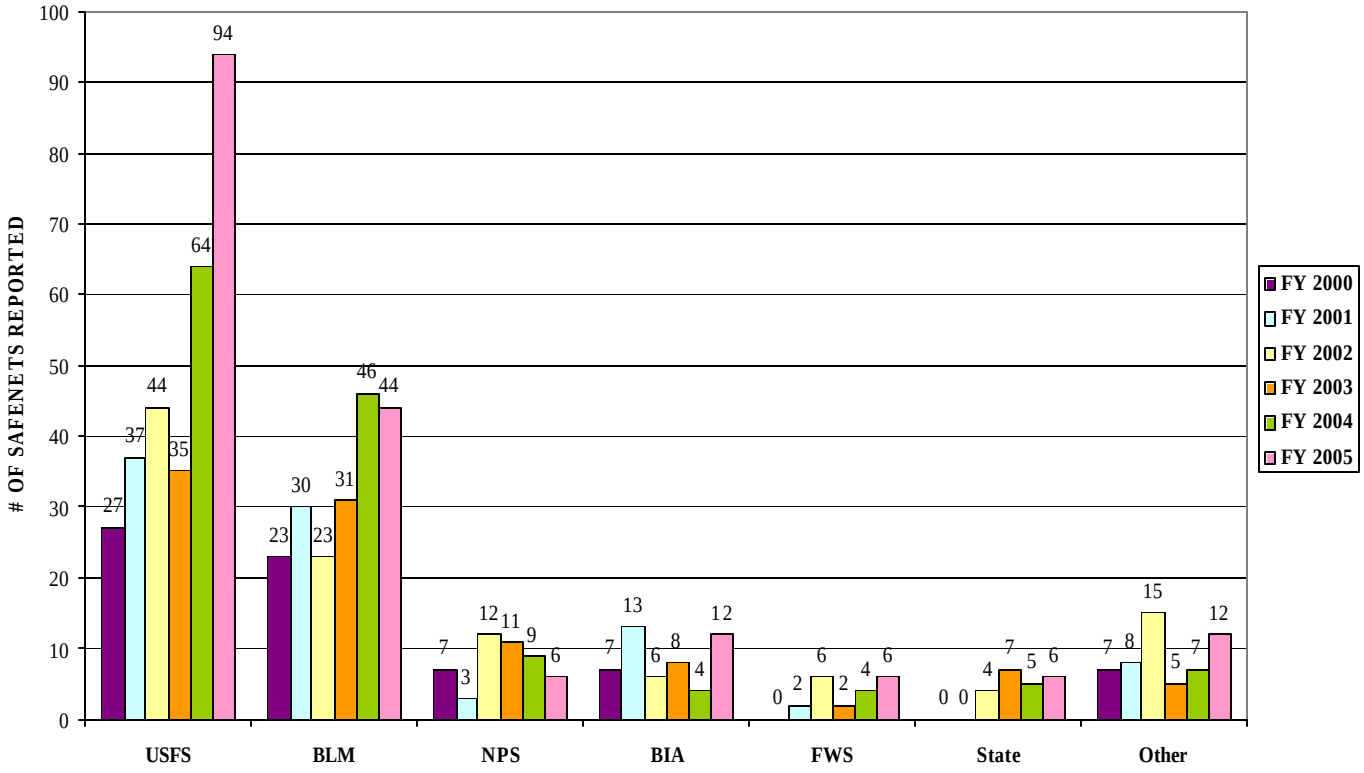
JURISDICTIONAL AGENCY YEARLY COMPARISON



The USFS received the highest number of SAFENET submissions, with 49% pertaining to issues within their jurisdictional boundary. The BLM received half the amount of the USFS, at 25%. The remaining agencies made up the balance with BIA at 9%, FWS at 3%, NPS at 1%, State at 8%, and Other at 5%. The Other category includes FEMA, counties, cities, rural fire departments, and dispatch centers.

In comparison, the next graph shows the number of SAFENETs reported based on the submitter's agency.

REPORTING AGENCY YEARLY COMPARISON

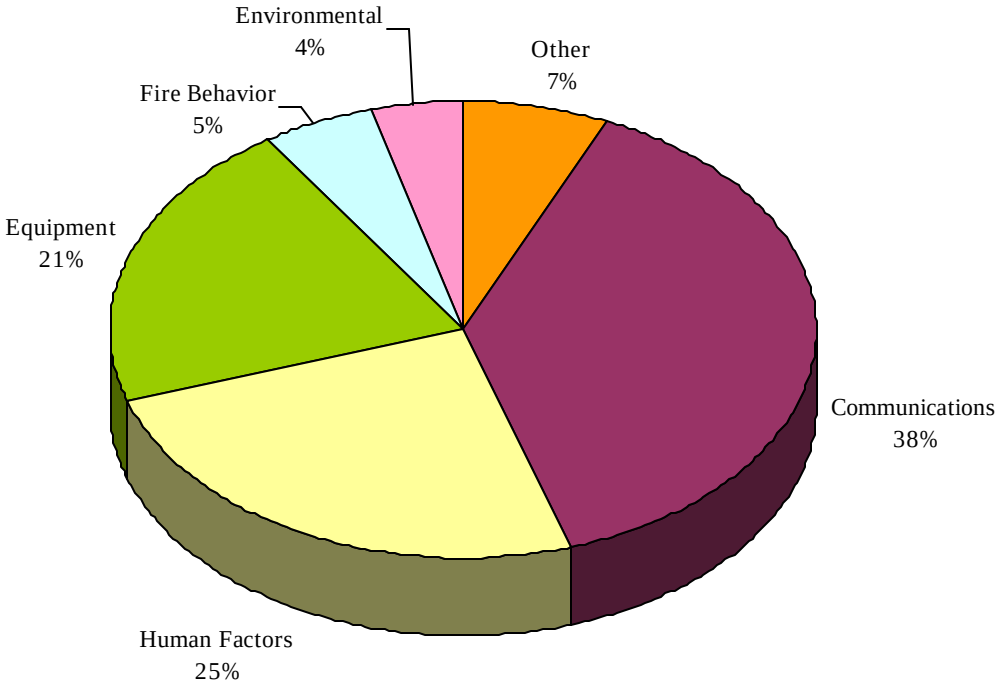


For the sixth year, Forest Service employees filed the highest number of SAFENETs followed by BLM employees. The category of "Other" represents city and county fire departments, federal retirees and AD hired personnel.

CONTRIBUTING FACTORS

The SAFENET system offers six elements that may be chosen as a contributing factor to any incident. These include Communications, Human Factors, Environment, Fire Behavior, Equipment, and Other. Many submissions note multiple contributing factors. Below is a chart that exhibits the percentage of each contributing factor element for FY 2005.

2005 SAFENET - CONTRIBUTING FACTORS



Communications – 38%

For the fifth time in six seasons, Communications has been a contributing factor in the largest majority of SAFENETs filed. (In 2003, Human Factors had a 3% higher percentage of submissions.) The majority of these submissions are based on equipment failures or ineffectiveness. The remainder are based on personal communications between individuals.

Communications Equipment:

- Several SAFENETs were received relating to the switch to narrowband radios and those failures or lack of capability.
  - Vertex radios – 17 submissions
  - Racal radios – 12 submissions
  - EF Johnson radios – 5 submissions
- 48 submissions cited general radio issues such as radios or repeaters not functioning properly and inability of dispatch centers to communicate with the field due to equipment failures.

Personal Communications:

- This category mostly represents negative communications based on perceived lack of support by dispatch centers to the field, as well as perceived lack of support to dispatch centers by the Forest Service End User Support Center (EUSC) to remedy

non-functioning computer and radio systems. (All submission citing lack of support by EUSC were forwarded to the Wildland Fire Customer Service Representative for the Forest Service computer support organization, as well as normal agency protocols.)

Human Factors – 25%

Human factors were cited as a contributing factor in a quarter of all SAFENETs filed. This category is broken down into several underlying elements including Decision Making, Leadership, Situational Awareness, Risk Assessment, Performance, and Fatigue. Many of these elements are interchangeable as all authors have a different interpretation of their definition. Below are a few examples of submissions that fall into each category.

Decision Making – 59

- Leaders choosing to use known unqualified personnel.
- Poor choice in assignment of personnel on an incident.
- Disregard of Incident Commander's (IC) instructions re: tactical operations.
- Disregard for safety during administration of the Work Capacity Test.
- Decision to NOT use the Incident Command System (ICS) structure for fire operations – leading to poor communications and lack of a plan.

Leadership – 53

- Lack of a fire briefing.
- Local fire management personnel interfering with established ICS fire operations while not following proper safety protocols.
- District fire management personnel unavailable and not providing backup leadership or command structure.
- Management assigning IC Trainee on a 5 day fire without a qualified IC to serve as a trainer.
- Inappropriate and unnecessary use of vehicle emergency lighting in traffic by a crew superintendent.

Situational Awareness – 48

- Not providing for all aspects of LCES.
- Fire managers not reacting to hazards present in burn area.
- Dozer operator on fireline unaware of tactical operations plan and lacking communication capability.
- Poor driving behavior.
- Driving off road over heavy fuels and igniting debris on fire, resulting in total vehicle loss.

Risk Assessment – 40

- Placing resources in unsafe environment.
- Personnel falling trees too close in proximity to other firefighting personnel.
- Failure of Air Tactical Group Supervisor (ATGS) to recognize risks in an area to which firefighting personnel were being directed.

Performance – 32

- Helicopter pilot "cowboy" flying with firefighting personnel on board.
- Dispatch center personnel being rude, unprofessional, and unwilling to assist resources in the field.
- Staging area not staffed appropriately to provide adequate supplies to crews and personnel.
- Helicopter pilot dropping load of water on crew.
- Failure of parachute rigger to properly rig a parachute. (Resulted in non-incident.)
- Not properly inspecting equipment to ensure compliance with Emergency Equipment Rental Agreement.

Fatigue – 17

- Bus Driver driving erratically and unsafely.
- Failure to meet 2:1 work/rest guidelines.

Equipment – 21%

Equipment issues or failure are always of great concern to the firefighting community. This category continues to receive a fair amount of submissions as firefighters use this as a tool to warn of faulty equipment.

- New generation fire shelter failures – tears, etc. during training exercises.
- Cracked mounting bracket for a crew carrier.
- Inability to switch to scan mode on radio and locking into a mode that is not correctable without a laptop computer.
- Radio channels overriding each other – no option to select second priority channel.
- Vehicle rolling forward even though parked and in gear with emergency brake set.
- Burns/scalds to a firefighter while top filling an engine from a water tender.

Fire Behavior – 5%

- Not responding to changing fire conditions.

Environmental – 4%

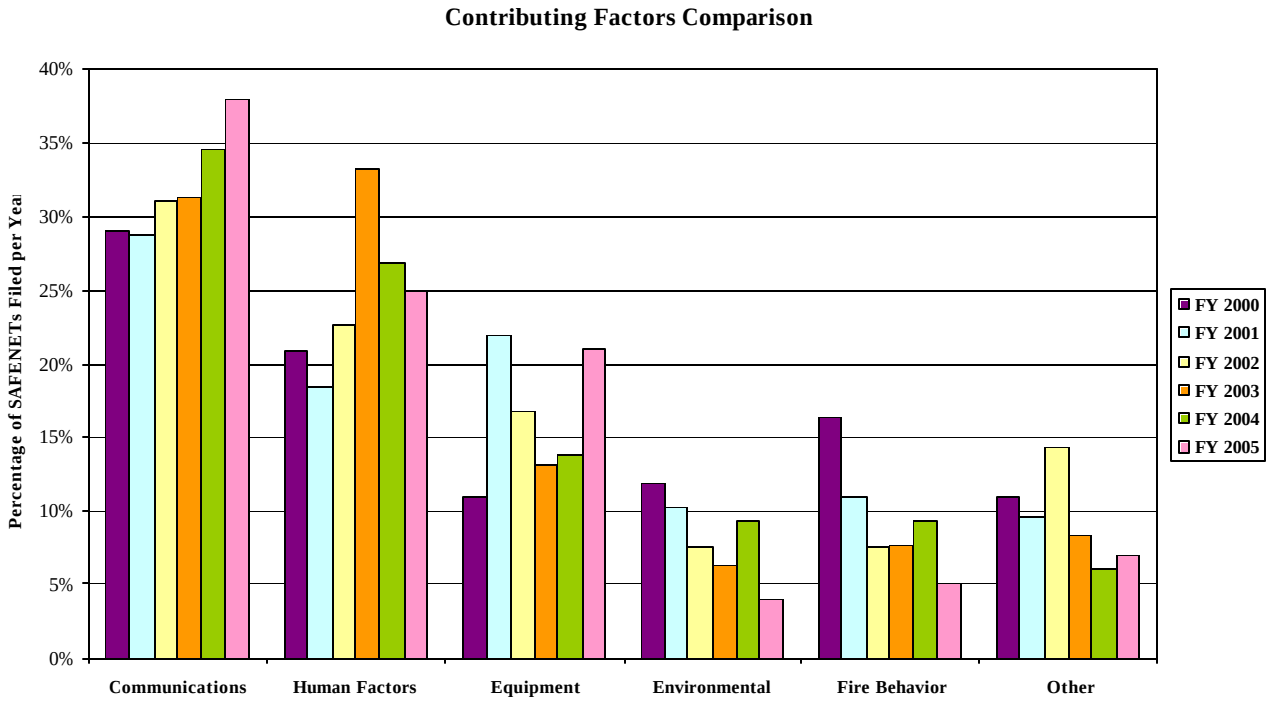
- Helicopters allegedly dipping out of sewage ponds.

Other – 7%

- Lack of funding for budget to support staffing helicopters with EMTs.
- Nausea & difficulty breathing after working with bleach/ammonia phosphate blend at recommended ratios.

TRENDS

One useful tool provided by the SAFENET database is the capability to analyze trends, allowing managers to address specific areas that continuously seem to have issues or be of concern. Below is a chart comparing the Contributing Factors of SAFENETs for the past six seasons.

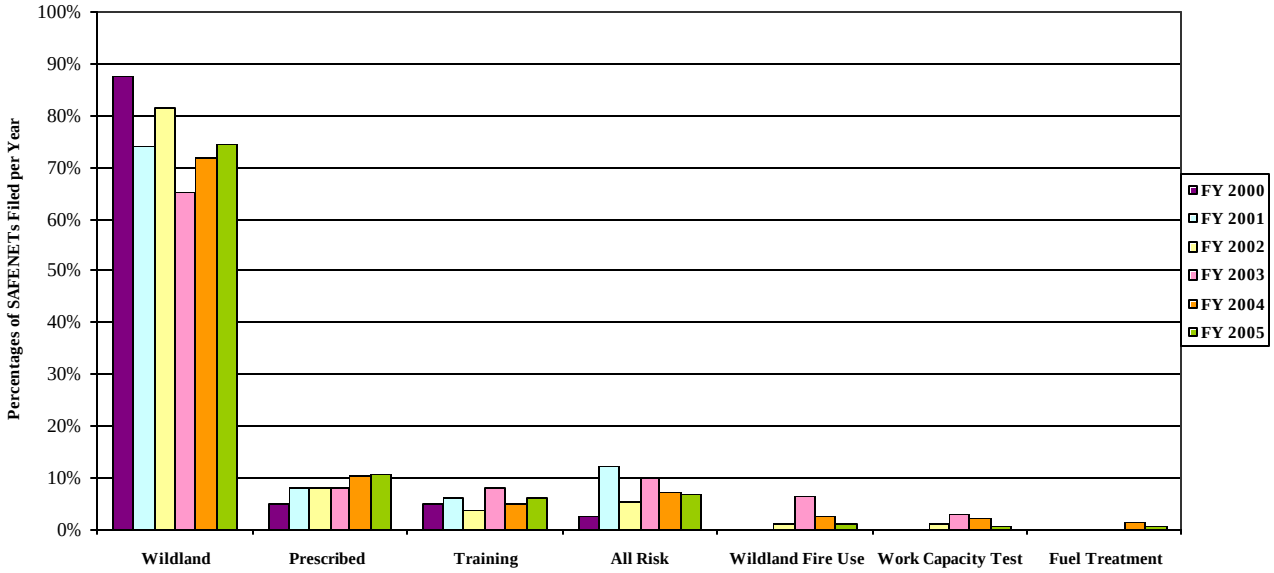


As shown, the trends throughout the seasons seem to repeat themselves with a few exceptions. Communications has been a leading contributing factor in all six seasons of SAFENET operation. FY 2005 showed a rise in Equipment submissions, directly linked to the high level of Communication submissions primarily due to the continued shift to narrow banding radios and associated issues. Lack of training or awareness on these new radios leads to increased frustration by field personnel and a perception that the equipment does function properly.

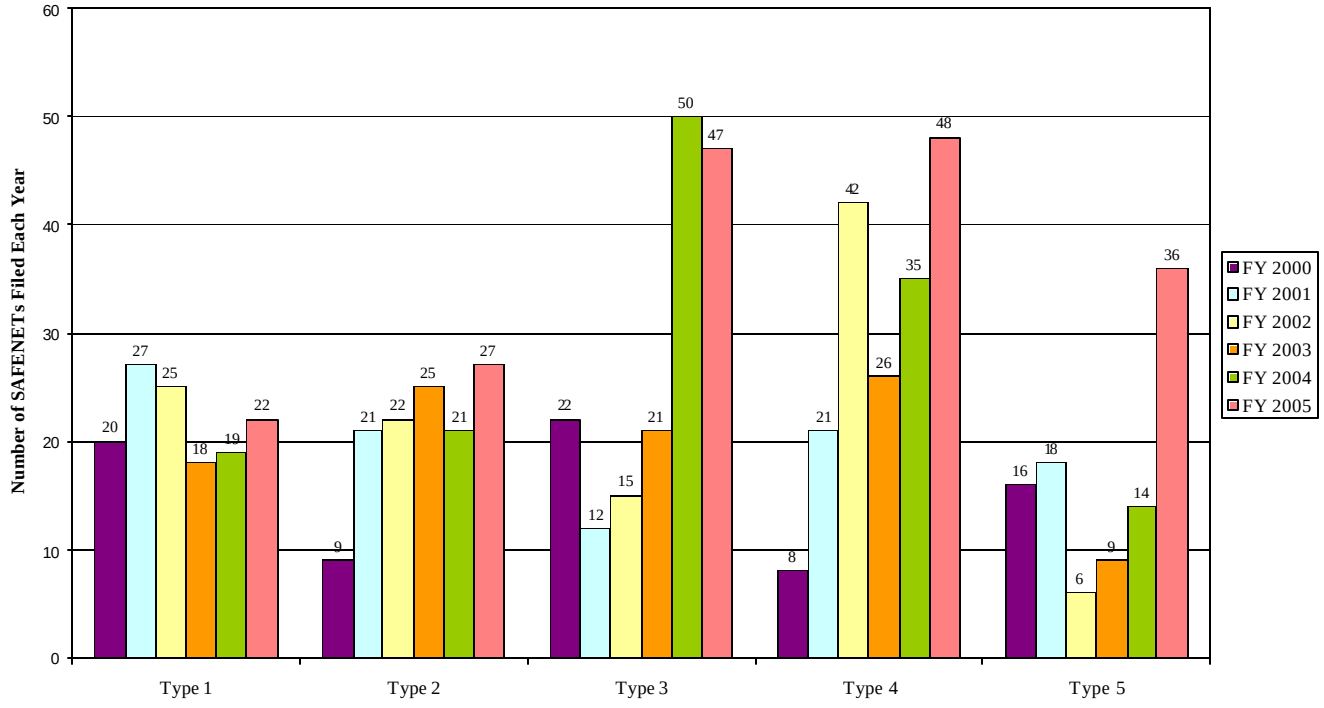
The Human Factors category continues to be the second highest contributing factor category. This category is comprised of many different elements and is based primarily on the author's perception of another individual's behavior. While difficult to assess the reasons for it, there is an overall downward trend in submissions within this category.

Additional trends to review throughout the lifespan of the database are those found by comparing the type of activity in which the issue took place and the management level of those incidents for which a submission is made. The graphs below exhibit the comparison of these elements for the past six seasons.

Incident Type Comparison

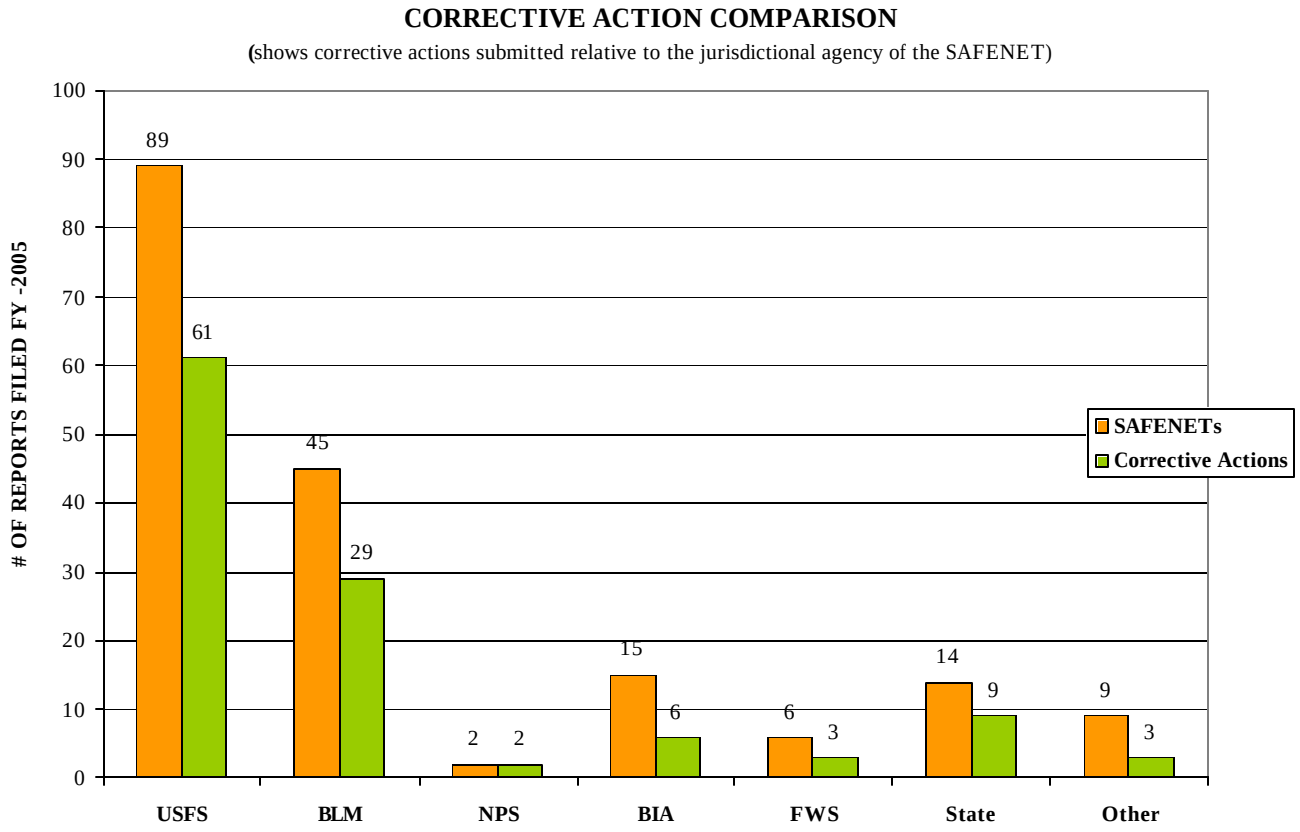


Management Level Comparison



CORRECTIVE ACTIONS

All agencies, as well as private individuals, have an opportunity to provide a corrective action to any submission. When a SAFENET is received it is forwarded to the designated representative for the jurisdictional agency. This allows the jurisdictional agency to respond as needed and makes the agency aware of field issues during one of their host unit incidents. Below is a graph that shows how many SAFENETs received follow-up corrective action for FY 2005.



As the graph above indicates, NPS provided corrective action to 100% of their submissions, USFS – 69%, BLM – 64%, State – 64%, FWS – 50%, BIA – 40%, and Other – 33%. Corrective actions are encouraged for every submission. It is most meaningful when provided at the field office or fire level. However, it is not always possible for every SAFENET to receive a corrective action.

Break Down of Corrective Action Responses		Reason for Corrective Action	
Action Taken	93	Action Based on Submission	84
Unfounded	20	Action Taken Prior to Submission	29

These statistics show that action was taken on 82% of SAFENETs filed. Those issues where field personnel were proactive and made the issue known prior to a SAFENET submission had already been addressed. In 74% of the corrective actions managers were unaware of an issue in the field until a SAFENET had been filed.

The SAFENET reporting system continues to provide a valuable link between upper level management and the firefighters on the ground. With continued usage and constructive feedback, every resource can strive to make wildland firefighting a safer environment.

APPENDIX A

For reference purposes, below is a list of incidents on which SAFENETs were filed for the FY 2005 season.

Wildland Fires

468	17 Fire
75th/Carver Fire	ABC Misc
Aspen	Baseline
Bear	Benjamin Lake Complex
Blossom Complex (2)	Bosque
Boundary	Broken Bow
Buck Fire	Camel
Campfire	Cave Creek Complex
Chapman Fire	Clover (2)
COIDC #470	Color Country Staging & Support (2)
Contact	Cottonwood
Cowboy Camp	Dammeron
Divide, Gibson, & 58 Fire	Elbot
Elliott	Esmeralda (2)
Falls Creek	Fish Creek
False Alarm	Fork
Freds	Garrett
Geary (2)	Getting
Globe	Goldfield
Homestead	Horse Pasture
Horse Range	Junetta (2)
Knox (2)	Lick Creek
Local Operations (2)	Loosum
Maiden (2)	Martin
Mason	McLane
Meadow	Middlefork
Miracle	Misc. ABC (4)
Mile Marker 181	Mile Post 368
Motorcycle	Mt. Powell
Mule Peak (3)	Muskeg (6)
Neck	No Name
Oatman Flats	Ongoing
Peachville (2)	Pinyon Complex/Hogback
Radio Communications	Rattlesnake Springs
Recon of District	Rest Area
Ricco	Saddle
Schoolie West	Second HUD
Silver Creek & Perkins Complex	Sim
Spring Fresh	Static
Stump	Cobra
Tank	Teapot
Three	Troy

Tuolumne	Tweedy Point
Various IA	Vekol (2)
Waterfall	Whitewater
Whitten Creek	Windy

Wildland Fire Use

BAM Preparedness	Selway-Salmon Complex

Prescribed Fire

Crystal Cave Rx	Edson
French Creek/Haystack Butte Rx	Horse Pasture
Lion Den Rx (2)	Monte Cristo Rx
Pahranagat Rx	Park Creek Rx (2)
Red Rock/Liscom Rx	Salmon/Challis Rx
Soldier Butte Rx	Taylor Rx
Warner Wetlands Rx (3)	

Fuel Treatment

Saw Work	

All Risk, Training, & Other Incidents

ASNF Radio Problems	District Training
Fire Extinguisher Discharge	Fireshool
Home Unit	Hurricane Support (Ivan)
NMSF Capitan	Parkview Repeater
Plumas ECC	Printer
Radio Communication	Severity
St. Ignace	Terra Torch Training (3)
Work Capacity Tests	