

AFTER-ACTION REVIEWS— WHO CONDUCTS THEM?



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Reflecting on the links between intentions and outcomes is a key practice of a learning organization (Garvin 2000). The After-Action Review (AAR) is a formal reflection process intended to assist groups in capturing lessons learned from a task. AARs typically ask four questions regarding fire-response operations: (1) what did we set out to do, (2) what actually happened, (3) why is there a difference between the first two, and (4) what should we continue/what should we change? Since the Wildland Fire Lessons Learned Center sponsored training workshops on AARs for the fire community in 2002, the practice seems to have been widely adopted. You can hear the term almost every where you go these days, from engine bays to incident command posts. But just how widely has the practice been implemented? Are all levels and all functions in the fire organization conducting AARs? How good are AARs as currently practiced at get-

ting at root causes of discrepancies, and is the practice having a positive impact on performance?

We asked 668 randomly selected survey participants from across the country about their AAR practices, as part of a larger study of high reliability behaviors among permanent fire staff in the Forest Service,

their AAR (after each shift, assignment, incident, or season).

We also asked respondents about their perception of their group's performance. We are still in the process of analyzing the full dataset but want to share answers to the first of these questions: who is conducting AARs and at what point?

AARs typically ask four questions regarding fire-response operations: what did we set out to do; what actually happened; why is there a difference between the first two; and what should we continue, and what should we change?

U.S. Department of Agriculture, and the Bureau of Land Management and National Park Service, U.S. Department of the Interior (see: "A Multidisciplinary Approach to Fire Management Strategy, Suppression Costs, Community Interaction, and Organizational Performance," in this issue). We asked each of them whether their group (the unit with which they worked most closely) had conducted an AAR in association with the last fire they were on and, if so, at what point the AAR was conducted. To help understand current practices, we also asked them what general type of fire this was (suppression, prescribed, or wildland fire use); the class of that event (initial attack, extended attack, home unit, or project-complex); the role they played during this incident (or the role they spent the most time in on that event); and at what point they conducted

Data Classification

Because there were far more suppression events (373) than prescribed fires (59) or wildland fire use (54) events, we grouped the respondents' roles first by basic organizational unit: agency (e.g., agency representative, line officer, fire management officer, duty officer, resource advisor); dispatch (including dispatch function and Geographic Area Coordination Center level); or team (for anyone assigned to the incident).

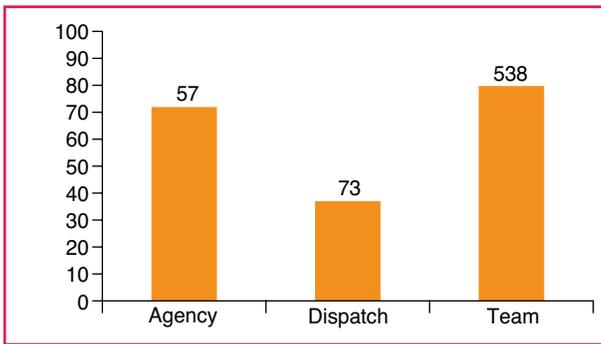
Because there were significantly more team (538) than dispatch (73) or agency (57) respondents (fig. 1a), we broke team respondents down into their functional roles: aviation (helicopter managers, helitack, etc.); Incident Command (type 5–1, area command); and others according to their Incident Command

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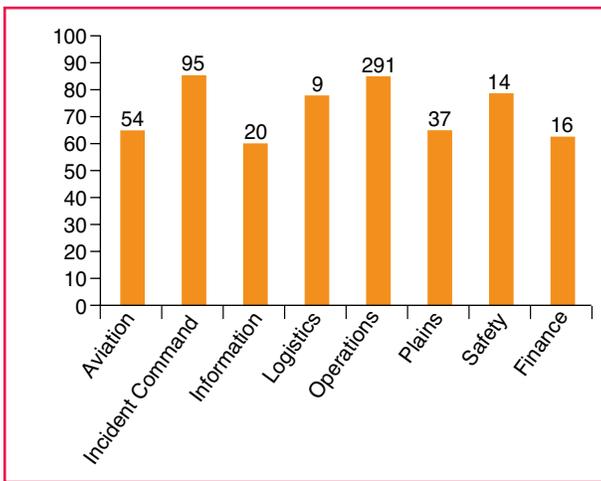
NOTE: Policy terminology and guidance have changed since this article was prepared. "Wildland fire use" is no longer considered a category of fire management but describes one potential management strategy for dealing with natural-ignition wildfires. The term has been retained here to reflect the structure of the study.

Figure 1—Percentage of permanent Federal fire staff reporting that their group conducted an After-Action Review on their last assignment in 2007, with total number of responses per class shown at top of bar,

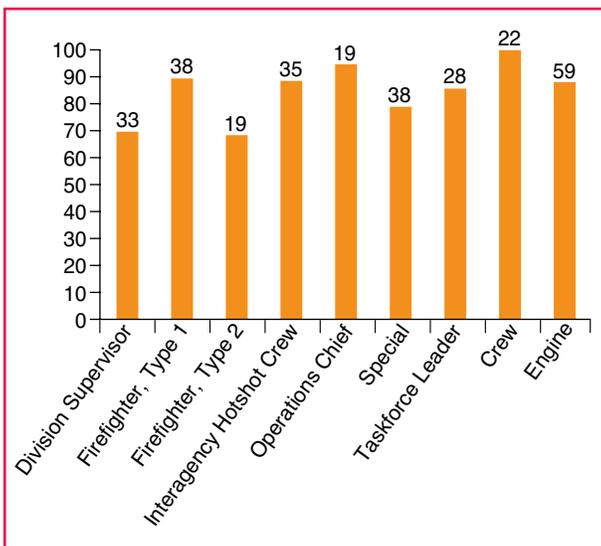
(a) by basic organizational unit



(b) by Incident Command System function on suppression events, and



(b) by basic organizational unit, (b) (c) by operations role.



System (ICS) function (information, finance, logistics, operations, planning, or safety) (fig. 1b).

Finally, because operations numbers outnumbered the responses from other ICS functions by an order of magnitude, we broke out the operations function into general resource type or level: division supervisor, firefighter 1, firefighter 2, interagency hotshot crew, operations section chief, task force/strike team leader, crew, engine, and a category that includes specialized roles (e.g., sawyers, bulldozer operators, firing bosses, and fire use module members) (fig. 1c).

While these queries and subsequent analysis cannot tell us about the quality of the AARs, they do indicate some significant differences in current practices. Subsequent analysis will help us associate learning practices with perceptions of performance.

Results

According to this study, staff on prescribed fire, fire suppression, and wildland fire use events use AARs in similar proportions: about 74 percent of the time. There are, however, significant differences in AARs use by basic organizational unit, class of fire, team function, and operational role (table 1, fig. 2). Frequency of AARs conducted by groups involved in initial attack (64 percent) is significantly different than on those on project-complex fires.

Only 37 percent of respondents in dispatch units reported their group held an AAR, whereas 86 percent of team-based respondents said their group had done so. Perhaps surprisingly, respondents working in aviation reported that their group conducted AARs less frequently than all but those in an information function. At an overall 79-percent rate, those in safety reported the group they associated with lagged significantly behind those in operations functions (85 percent). Among the operations functions, division supervisors reported their group held AARs less frequently than any other category (although not statistically so), while all of those participating in a crew reported conducting AARs.

Most of these AARs are conducted after each shift and/or after the incident—at least for prescribed fire and suppression operations (fig. 3). Respondents who last worked on a wildland fire use incident reported that their AARs were generally conducted after an assignment. This timing may reflect the different tempo of action on different

Table 1. Statistical results for assessing differences in after-action review (AAR) practices on wildland fires.

Categories Compared	Pearson Chi-Sq test results
Type of fire (suppression, prescription, wildland fire use)	$(\chi^2 (2, N = 653) = 2.71, p = .258)$
Organizational unit for all classes	$(\chi^2 (2, N = 668) = 63.08, p = .000^*)$
Class of fire (initial assessment, extended assessment, home, or project/complex)	$(\chi^2 (3, N = 499) = 11.15, p = .011)$
Team function for suppression events	$(\chi^2 (8, N = 541) = 27.57, p = .001)$
Operational role on suppression events	$(\chi^2 (8, N = 291) = 16.63, p = .034)$

* Significant results (bold) are those with p-values less than 0.05. Models indicate whether or not there are significant differences among the categories, but not which ones are significantly different.

Figure 2—Percentage of respondents on different types of suppression events reporting that their group conducted an AAR, with total number of responses from each type at top of bar.

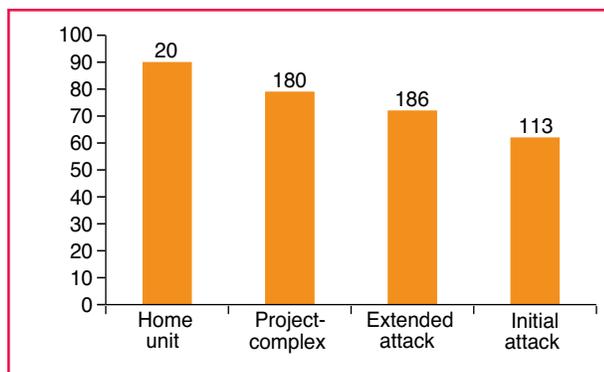
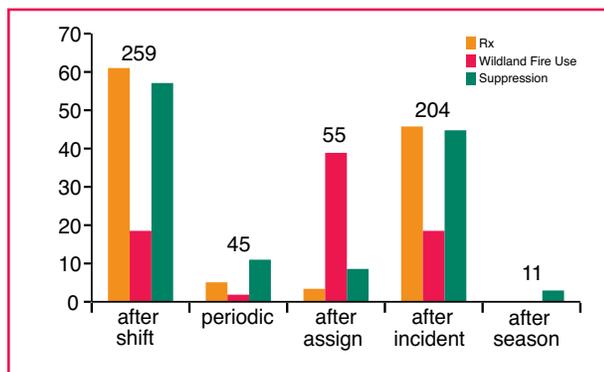


Figure 3—Percentage of AARs conducted by strategy and timing, with total number of responses summed for each time period.



types of incidents: “boots-in-the-black” forces conducted AARs by operational shift; prescribed fire and host units, after the incident; and wildland fire use, after an assignment or in place of a close-out. Quite a few respondents noted that they conducted several types of AARs—after shifts, after assignments, and after the fire season.

More information on AARs, including background information and training materials, as well as fire-related AARs and details on how to share your own AAR, may be found at the Wildland Fire Lessons Learned Web site: <<http://www.wildfirelessons.net/AAR.aspx>>. More information on this project can be found at <<http://leopold.wilderness.net/research/fprojects/F017.htm>>.

Reference

Garvin, D.A. 2000. Learning in action: a guide to putting the learning organization to work. Cambridge, MA: Harvard Business Press. 256 p. ■