

## **Wisdom in the Lessons Learned Library: Work Ethics and Firefighter Identities in the Fire Orders**

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### **Abstract**

This paper analyzes historic and contemporary documents about the Ten Standard Fire Orders in the Lessons Learned Center Library and elsewhere, to examine how justifications for these traditional safety rules have changed over time. Using ethical theory as a lens for analysis, the paper shows how the original Fire Orders attempted to codify an individual “virtue ethic” for firefighter safety traditionally managed through narrative write-ups. However, their introduction simultaneously ushered in an individual “duty ethic” that would come to eclipse the virtue ethic over time. The findings from the South Canyon fire accident investigation reflect an organization at odds with whether it manages safety as a virtue or safety as a duty. The 2002 revision of the Fire Orders is said to be a return to basics. Whereas the early Fire Orders were intended to harness individual loyalty to the group as a way to repair defects in individual thinking, the analysis shows how the new Fire Orders are intended to function as a resource for individuals to repair defects in group reasoning. Therefore, while the new Fire Orders may indeed attempt to recover a virtue ethic, it is a distinctly *organizational* one. However, this is at odds with investigations that attribute accidents to violations, which a view that is more compatible with an individual duty ethic.

### **Introduction**

The Lessons Learned Center Library at [wildfirelessons.net](http://wildfirelessons.net) (NAFRI 2004) is a depository of historic texts and case studies for reflection and deliberation by fire managers and their crews. However, with so many resources available it can be easy to experience information overload. It can also be challenging to understand the historic contexts in which particular documents were written. And, it can also be confusing to sort out different texts that seem to disagree with one another. Using ethical theory as an analytic lens, this paper charts one route through over a dozen historic and contemporary documents about the Fire Orders by focusing on different “work ethics” that have justified them at different points in time, including the operative work ethic in the Fire Orders of today.

### **Methods**

In contrast to a traditional scientific approach, this paper employs a qualitative analysis that seeks to recover underlying rationales in historic and contemporary documents. The analysis acknowledges that texts require interpretation, but that those interpretations also give rise to further interpretations, in a continual *hermeneutic* process of meaning making.

A humanistic theoretical frame can offer a consistent lens for the analysis of a group of related texts. This paper uses ethical theory as theoretical lens for interpretation of texts about safety from the 1930s to the 2000s, with a particular focus on justifications for the Ten Standard Fire Orders from the 1950s to the present. Data collection for this paper was primarily archival, and includes letters, reports, and case studies gleaned from the Lessons Learned Center Library, along with other publicly available sources such as recent accident investigation reports.

While the word “ethics” often suggests situated evaluations of “right” and “wrong” (i.e., “ethical” and “unethical”), ethical theories are actually broader in scope. Specifically, different ethical systems highlight different elements of a decision (the act, the decision

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maker, and the consequences) in order to discover and specify the “right” thing to do in a given situation. Duty ethics, for example, highlights the act itself (e.g., Kant 1959). An ethic of duty says that it is possible to determine objectively what is right and what is wrong before the fact. Therefore, one should always determine, and do, the “right” thing in every circumstance.

An ethic of virtue, on the other hand, says that it is impossible to program people to deploy objectively rational decisions moment by moment. Rather, what is possible is to cultivate virtues in people so that right decisions become a matter of habit (e.g., Aristotle 1954/n.d, MacIntyre 1984). Therefore, a virtue ethic, in contrast to a duty ethic, highlights the character of the decision maker. Whereas an ethic of duty is an ethic of doing (i.e., I am good because of what I do), an ethic of virtue is an ethic of being (i.e., I do good because of who I am) (Pojman 2002).

The third kind of ethic is utilitarian ethics, which highlights the consequences of an act (e.g., Bentham 1948/1789, Mill 1998/1863). In this view, an action is only good or bad if its outcome resulted in something good or something bad.

These very simplistic thumbnail sketches belie centuries of philosophical debates about ethics and ethical systems. Nevertheless, they provide a starting point for reading in the lessons learned library because different ethical systems also specify how “principles” (a.k.a., lists of rules) should be involved in decision making. Conversely, any set of rules already carries with it a coherent ethical system within which those behavioral prescriptions make sense. The goal here is to uncover the operative ethics that have justified the Fire Orders at different points in time.

This is important for two reasons. First, any reading of an historic document that invokes the Fire Orders should acknowledge the contextual ethical system that was in place at the time it was written. Second, a contemporary reader must compare that historic context to contemporary conditions, organizational structures, and processes to determine what assumptions still reasonably apply today, and which do not. Third, any statement about how a set of rules is supposed to work necessarily implies a certain relationship between the individual and the group, including how rules mediate the process of influence of one over the other. Therefore, in addition to rationalizing forms of control, justifications given for Fire Orders also say something about firefighter identity.

### **Discussion**

In the interest of space, this discussion highlights one or two key texts that exemplify the operative work ethic in each era.

#### 1930s (Pre-Fire Orders)

A recent compendium of historic case studies available in *Fire Management Today* (USFS 2003a) shows that before the Fire Orders were ever developed, early *Fire Control Notes* published annual write-ups of near-miss and tragedy fires. These write-ups explicitly evaluated individual firefighter judgments made on the fireline, and therefore can be understood as managing safety through an individual virtue ethic.

For example, after the 1937 Blackwater Fire in Idaho, the Director of Fire Control published a quote from ranger Urban Post who was recuperating in the hospital (USFS 1937). Post recalled that he and two other rangers had noticed spot fires below the fireline, and “almost at once it was clearly evident that further attempts at line construction in that area [were] out of the question. I sent out a call for all men to abandon their work and [to] proceed” upward to a nearby ridge (in USFS 1937, 306).

In an accompanying editorial the Director noted that he published the account as “an authentic case record of the process of judgment in such situations where a man must think

first and think clearly about the safety of men in his crew” (USFS 1937, 305). The editorial also told “all experienced men” what they should recognize in Post’s statement: a sense of urgency to “get the line ahead and the fire mopped up before something happened,” which referred to the need to keep the fire small, “but always with a running accompaniment of a plan (sometimes unconscious) for the best way to safety for the crew if something went wrong” (305).

The inclusion of Post’s statement, and these editorial commentaries, can be read as the management of safety through a virtue ethic. Recall that a virtue ethic attempts to locate exemplary models in the community that others can emulate. Not only was this particular example intended to provide newer firefighters with a role model, but it was also intended to clarify for “experienced” firefighters what counted as virtue. As Pojman (2002) explains, in a virtue ethic “the primary focus is not on abstract reason but on ideal types of persons or on actual ideal persons. Discovering the proper moral example and imitating that person or ideal type” leads to a system of apprenticeship training that results in “a virtuous person who spontaneously does what is good” (165).

One drawback to managing safety by way of a virtue ethic is that failures in judgment are also fair game for public scrutiny. In another write-up in 1939, an Ocala district ranger disagreed that the large Pleasant Flat Fire of 1938 should be blamed on outdated equipment. Instead, he redirected the blame to another ranger who had been unable to “make efficient use of the manpower and equipment that was available at the time of the fire,” adding that “matters of new and better equipment are secondary” (in Headley 1939/2003a, 21).

Despite such ego-leveling judgments, there is always the possibility for “redemption” in a virtue ethic as one can always learn to embody the proper virtues. Headley added sympathetically that the wayward ranger “may take comfort from the fact that many others, including big shots in fire control, suffer from the same inability. But this should not deter him from seeking to be mentally prepared for efficient management of the next fire. – *Ed.*” (Headley 1939/2003a, 21).

In short, narratives like these show that well before the Fire Orders were developed, safety was managed by way of an individual virtue ethic, where exemplary community members were held up as ideals for other individual firefighters to follow. Specifically, these exemplars embodied the ideal of the good firefighter as someone who kept fires small but always with a “running accompaniment” of a plan for the safety of the crew.

#### Late 1950s: Fire Orders as Virtues

Later *Fire Control Notes* reveal that some viewed these public judgments of praise and blame as capricious. A Bienville Forest district manager was taken to task for the 1939 Ludlow Fire in Mississippi, which had grown to an unmanageable size because it had been thought to be on private land. In his report, he complained that “very often, certain action which has merited commendation because of its practical application in hundreds of previous cases, falls down in a particular case, and the cry ‘poor judgment’ is raised” (in Headley 1940/2003b, 24). The ranger then proposed a rule that when in doubt, tower lookouts should investigate all questionable boundary fires (24).

According to duGay (2000), the impulse to adopt principles is viewed in many bureaucratic organizations “as a price worth paying to ensure probity and reliability in the treatment of cases” (86). Over the next two decades, the alarming growth in multiple fatality fires also compelled the agency to look for a tool that would foster the development of a virtue ethic but also inject a sense of urgency into the development process.

Forest Service Chief McArdle convened a special task force in 1956 to study 16 fatal fires from 1937 to 1956, including the Blackwater, Hauser Creek, Mann Gulch, Rattlesnake, and Inaja fires (Putnam 2001, USFS 1957). Consistent with the operative virtue ethic of the time,

the task force also praised “near miss” fires whose rescues had been successful “because someone did not fail in one of these critical categories” (USFS 1957, 4). The discussion of successful near miss fires especially showcased the ability of a firefighter to recognize emergency conditions and to make a quick judgment, or where “some coolhead sized up a local change in fire behavior and figured out what would happen in time to get men to safety” (4). However, for the multiple fatality fires, the task force identified 11 common factors, which they labeled “sins of omission which our trained men recognize as sins” (5).

The use of the religious metaphor of “sin” does more than evaluate work performance; it conveys a sense of *moral judgment* by labeling these as acts of transgression. According to Williams and Murphy (1992), a virtue based culture trains its members “through an ingrained set of habits...to see things in a certain way” in order to “predispose them toward ethical behavior” (14; see also Johannesen 2002). While the “coolheads” had apparently demonstrated this ability, the task force expressed frustration that “on some of the fires we reviewed, men who know better just did not pay adequate attention to the good fire fighting practices that seem like small details but could become the critical item in an emergency” (USFS 1957, 8).

As a result, the task force turned to military organizations for inspiration, where “one device by which such discipline is achieved is that of ‘General Orders’ which all men of a unit are required to memorize” (8). The task force developed the analogous Ten Standard Fire Orders for the Forest Service, concluding that “the use of a form of standard orders starting immediately would be a long step in the direction of assuring attention to the fundamentals” (8).

While the Fire Orders are often compared to the biblical Ten Commandments (Pyne and others 1996, the early Fire Orders were not expressed as temptations to avoid (i.e., “thou-shalt-nots”). Rather, they represented a list of good habits demonstrated by exemplary community members. Just like the “sinners” could be redeemed into “coolheads,” the thinking was that any firefighter could learn to embody the principles contained in the original list. As such, the early Fire Orders can be understood as “pure aretaic” principles (MacIntyre 1984; Pojman 2002), or principles that specify virtues that one can learn to embody. They were not wholly a list of bureaucratic principles because that would have required specification of penalties for poor performance, as well as rewards for adequate performance (Edwards 1978/1994).

However, one assumption that was imported with the military analogy was that a list of rules could harness individual loyalty to the group as a way to correct defects in individual thinking. As a result, the introduction of the Fire Orders simultaneously ushered in duty ethic that would come to eclipse the virtue ethic over time.

#### *Standard Fire Fighting Orders (ca. 1957)*

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1. FIRE WEATHER. Keep informed of fire weather conditions and predictions.
2. INSTRUCTIONS. Know exactly what my instructions are and to follow them at all times.
3. RIGHT THINGS FIRST. Identify the key points of my assignment and take action in order of priority.
4. ESCAPE PLAN. Have an escape plan in mind and direct subordinates in event of blow-up.
5. SCOUTING. Thoroughly scout the fire areas for which I am responsible.
6. COMMUNICATION. Establish and maintain regular communication with adjoining forces, subordinates, and superior officers.
7. ALERTNESS. Quickly recognize changed conditions and immediately revise plans to handle.

8. LOOKOUT. Post a lookout for every possibly dangerous situation.
9. DISCIPLINE. Establish and maintain control of all men under my supervision and at all times know where they are and what they are doing.
10. SUPERVISION. Be sure men I commit to any fire job have clear instructions and adequate overhead.

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Table 1. From USFS, 1957, Appendix 6.

#### 1980s-1990s: Fire Orders as Duties

After the mid 1950s, the average number of deaths by burnover went down from four per year to approximately one per year (NWCG 2004). Discussion of the Idaho Butte fire is a good example of how this success rate is often attributed to the development of the Ten Standard Fire Orders (e.g., Rothermel and Brown 2000).

However, the Fire Orders that were in effect in the 1980s and 1990s were slightly different from those developed by the 1956 task force. They had been shorted, reorganized to spell the mnemonic Fire Orders, making them easy to memorize and chant. Beyond these surface level changes, however, the work ethic that undergirded the Fire Orders had also shifted from a virtue ethic to a duty ethic, as evident in the direct commands (Fight, Initiate, Recognize, etc.). In other words, each emphasized direct actions to take (verbs) as opposed to virtues to embody (nouns).

#### *Ten Standard Fire Orders (ca. 1994)*

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1. Fight fire aggressively but provide for safety first.
  2. Initiate all action based on current and expected fire behavior.
  3. Recognize current weather conditions and obtain forecasts.
  4. Ensure that instructions are given and understood.
  5. Obtain current information on fire status.
  6. Remain in communication with crewmembers, your supervisor, and adjoining forces.
  7. Determine safety zones and escape routes.
  8. Establish lookouts in potentially hazardous situations.
  9. Retain control at all times.
  10. Stay alert, keep calm, think clearly, and act decisively.
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Table 2. From USFS, 1994, p. 36.

Two other examples reveal this shift from virtue ethic to duty ethic. First, the process of judgment that Headley had written about in the 1930s was now codified into an explicit duty that one could violate: “Fight fire aggressively but provide for safety first.” Second, whereas the 1956 task force had noted that many of their 11 common denominator elements appeared “time and time again in the summaries of fire boards of review on non-tragedy fires” (USFS 1957, 5), the South Canyon accident investigation report noted in a that “time and time again fatalities can be attributed to one or more *violations* [italics added] of the 10 Standard Fire Orders” (USFS 1994, 34). This emphasis on compliance with duties per se typifies a bureaucratic form of control (Edwards 1978/1994, 112) (although imperfectly because to this day, the Fire Orders are not tied to specific sanctions for breaking them).

Despite this migration to a duty ethic, the findings of the South Canyon accident investigation report also conveyed a sense of moral judgment that would have seemed out of place in a strict duty ethic. Indeed, the finding from the fire that captured headlines actually evaluated both virtue and duty. An evaluation of attitudes and dispositions is an evaluation of virtue because it evaluates character; as such “the ‘can do’ attitude of supervisors and firefighters” is an evaluation of virtue. Second, an evaluation of compliance with rules is

evaluation of duty; therefore “led to a compromising of [eight of the ten] Standard Firefighting Orders and a lack of recognition of the 18 Watchout Situations” (USFS 1994, 36) is an evaluation of duty (Thackaberry in press).

The effect of these two potentially competing ethics is further evident in the 1998 Tri-Data report, which found that firefighters were fairly evenly split on the nature and authority of the Fire Orders. According to the report, some firefighters felt that the Fire Orders were “hard and fast rules never to be broken” while others insisted that they were simply guidelines for flexible decision making in the field (Thackaberry 2004; Tri-Data 1998). The former reflects a duty ethic because it specifies that Fire Orders are duties to be followed in every circumstance. The latter reflects a virtue ethic because it foregrounds the character of the decision maker who has the authority to determine what principle should be applied, and when.

Later, however, the Thirtymile Fire accident investigation found that not eight but “all 10 of the Fire Orders” had been violated on that fire (USFS 2001). Subsequent teaching tools stemming from that fire reinforced the duty ethic with reminders that the Fire Orders were “rules of engagement” (USFS 2002).

### 2000s: Recovery of Virtue

The Tri-Data Report had recommended that the precise authority of the Fire Orders be clarified, and that the list be revised and even pared down (Tri-Data 1998). However, the NWCG finally revised the Fire Orders in 2002, after being inspired by a letter from veteran firefighter and trainer John Krebs (1999; NWCG 2002). The 2002 revision is more visual than aural, resembling more of a PowerPoint slide than a memory mnemonic. Most notably, the Fire Orders have been regrouped into three sections, Fire Behavior, Fireline Safety, and Organizational Control, and the first Fire Order of the 1980s and 90s is now the last Fire Order, reworded to “Fight fire aggressively *having provided for safety first.*”

#### *Ten Standard Fire Orders (rev. 2002)*

##### Fire Behavior

1. Keep informed on fire weather conditions and forecasts.
2. Know what your fire is doing at all times.
3. Base all actions on current and expected behavior of the fire.

##### Fireline Safety

4. Identify escape routes and safety zones, and make them known.
5. Post lookouts when there is possible danger.
6. Be alert. Keep calm. Think clearly. Act decisively.

##### Organizational Control

7. Maintain prompt communication with your forces, your supervisor, adjoining forces.
8. Give clear instructions and insure they are understood.
9. Maintain control of your forces at all times.

If 1-9 are considered, then

10. Fight fire aggressively, having provided for safety first.

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Table 3. From National Interagency Fire Center, <http://www.nifc.gov>.

Whereas discussion of past Fire Orders had emphasized discrete items, under Krebs’ influence, discussions about the new Fire Orders tend to emphasize their specific sequencing and cumulative effect (e.g., NWCG 2002). For example, Krebs (1999) argued that the original Fire Orders had been “developed in a very special order of importance,” and had been “logically grouped” in such a way that would have made them easy to remember (1).

Indeed, the deployment of the new rules to the different agencies tends to reflect the importance of “ordering” and the Fire Orders as a “program” (Holtrop 2003).

Krebs may have provided the NWCG and the firefighting community with a way to transcend the virtue vs. duty conflict evident in the South Canyon report, and to once again reclaim an ethic of virtue. Despite his “back to basics” approach, however, this is not an individual virtue ethic like before, but a specifically organizational virtue ethic, which represents something new.

First, rather than preoccupying firefighters with the threat of moral judgment or duty violation, his discussion of the Fire Orders emphasized the sequence of empirical tasks: taking spot weather forecasts, mapping out safety zones, and taking other steps that would allow safety to emerge “naturally.” By the time firefighters were to think about “fighting the fire aggressively,” in his view, they have already “provided for safety first.” Krebs recrafted the Fire Orders in a virtue ethic that entails applying a technique habitually and linearly, much like a pilot’s checklist, although as a group effort. Indeed, he argued in a later training tool that in order for the new Orders to be useful, “we must teach firefighters to apply the analysis process “*habitually* [italics added]” (Krebs 2003, 2).

Second, Krebs’ vision also entails a *transformative* view of the Fire Orders. This is similar to how the early individual virtue ethic intended to *transform* individual firefighters by providing them with role models who exemplified firefighter virtues (or with negative examples who failed to do so), and with the early Fire Orders that were intended to “hurry up” that process of individual virtuous transformation by harnessing individual loyalty to the group.

However, by specifying different levels of organization (empirical conditions, fireline, management), and by emphasizing the sequence, Krebs presented the Fire Orders as a recipe to transform a firefighting given situation into a safely organized fire suppression operation in the moment. Not only does this attempt to thwart the cumulative effect of many small errors (e.g., Weick 1995), but it also introduces a uniquely *organizational* virtue ethic that should be recognized as such, despite the popular “back to basics” rationale.

That the new Fire Orders represent a uniquely organizational virtue ethic is further evident in contemporary descriptions of how they are supposed to work. In the accident investigation for Cramer Fire, the Fire Orders were found to have been “violated or compromised,” which is consistent with the lingering duty ethic; however, this finding was relegated to an appendix (USFS 2003b, 68). Even more illuminating, however, the Fire Orders are described in the appendix not only as “a checklist for supervisory personnel on the fire,” but also as “a source for other fireline personnel to pose questions to supervisory personnel whenever they have concerns about their personal safety” (68).

Whereas the early Fire Orders had intended to harness individual loyalty to the group to correct defects in individual thinking, now the Fire Orders are intended to function as a resource for individuals to correct errors in group reasoning. They are no longer a resource for individual firefighter transformation, but rather they are a resource for transformation of a given fire situation into a virtuous fire suppression organization for the moment. Furthermore, the exemplar does not exist in a remote example learned through narrative, but rather the ideal model is contained in the list itself. (However, it should be noted that the “rule breaking” frame that continues in accident investigation and the move toward OIG oversight stems from a duty ethic, and are thus at odds with this uniquely organizational vision of virtue.)

### Conclusion

The creation of a lessons learned library provides organizational members with easy access historic texts for deliberation and discussion. But lessons learned libraries do not just

contain charts, graphs, and numbers; they also contain texts that carry a moral force, and potentially contradictory ones at that. Therefore, they also carry with them the dangers of information overload as it may be unclear how to navigate one's way through the library. Furthermore, historic texts require interpretation in light of the contexts in which they were written before they can be applied to present day circumstances. As such, the creation of a lessons learned library also carries with it a need for skills in humanistic analysis and interpretation.

This paper has presented ethical theory as one such lens for recovering work ethics that have historically justified the Fire Orders. When browsing the Lessons Learned Center Library, particularly documents about the Fire Orders, readers should consider the underlying ethic implied in the discussion, including the implied relationship between the individual and the group, and the intended role of the rules in the process of influence of one over the other.

The 2002 revision of the Fire Orders may indeed represent a "back to basics" approach because it attempts to recover virtue through habit and apprenticeship. However, it should also be acknowledged as introducing something new. Unlike the operative individual virtue ethic of the 30s-50s, today's Fire Orders represent a distinctly *organizational* virtue ethic that can help to transform a given firefighting situation into a safe fire suppression organization in the moment. The revision of the Fire Orders over time might serve as an exemplar for how other high reliability organizations might retool historic texts in useful ways while still honoring tradition.

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