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## **Beyond the AAR: The Action Review Cycle (ARC)**

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### **Abstract:**

The authors describe the Action Review Cycle (ARC) as a logical next step from the current use of After Action Reviews (AAR) in the wildland fire service. The change described offers significant positive implications for wildland firefighter safety, builds on the solid foundation provided by the current approach, and extends existing practices into more robust ones. A shift to the ARC would place the AAR into an integrated cycle, magnify its contribution, and focus its conduct. In everyday practice the ARC strengthens the integration of multi-unit efforts and infuses learning into the conduct of work. Accomplishing a shift to ARC involves introducing Before Action Reviews (BAR), and interlinking leader's intent, planning, preparing, acting and reviewing as a cycle—a cycle that wildland fire personnel already intuitively understand. ARC makes the integration explicit, and keeps learning through AARs worthwhile to those taking the time to do it. The authors suggest that a shift to ARC might not be difficult for wildland fire agencies as most of the elements are already in place, and that by making this strategic shift the agencies will create valuable benefits that AARs alone will not produce.

**Additional Keywords:** After-Action Review (AAR), Action Review Cycle (ARC), Before-Action Review (BAR), Leader's Intent, firefighter safety, organizational learning

### **Introduction**

A learning organization is "...skilled at creating, acquiring, interpreting, transferring, and retaining knowledge, and at purposefully modifying its behavior to reflect new knowledge and insights" (Garvin 2000 p. 11). As a tool supporting organizational learning, the After-Action Review (AAR) has drawn much interest because it provides a simple structure enabling teams to learn from their daily experiences and improve the results they achieve. Yet, beyond being a field-level technique for performance improvement, AAR processes also hold the potential to move organizations toward greater agility in facing dynamic situations, by building a learning culture that continually strengthens the organization's ability to achieve its mission. Peter Senge, a prominent figure in formulating the learning organization as a concept, said "The Army's After Action Review (AAR) is arguably one of the most successful organizational learning methods yet devised" (Senge, pers. comm.. with Darling and Parry, December 2000).

### *Origins of the AAR*

The story of AARs as an organizational learning tool, now in its 4<sup>th</sup> decade, begins with its origin at the U.S. Army's National Training Center (NTC) in the 1970's. The NTC was created to transform the way the Army built unit readiness and developed its leaders—by engaging them in intense, extremely realistic battles against a highly capable enemy force convincingly played by another Army unit (referred to as OPFOR). During these battles, the opposing units interspersed frequent reviews throughout the action. The approach proved highly effective, and After-Action Reviews became a well-established part of both Army culture and standard procedure in both training and operations. As generations of soldiers rotated through the NTC, the methodology evolved, and AARs eventually escaped the bounds of the NTC.

### *AARs in the Wildland Fire Service*

Successful fire management organizations share many of the dynamics the military faces on the battlefield. For example, both confront fast changing, complex situations in which lives are at risk, and for both, inter-unit coordination and communication prove critical. So it seems quite reasonable to expect that methods that the military find effective in improving performance would translate quite well to the world of fire management.

The impetus to adopt the AAR from the military first came to U.S. wildland fire agencies in the late 1990s within the context of a grassroots effort. That effort came both in the wake of the South Canyon Fire and in response to exposure to ideas advanced at the first Human Factors Workshop. Much of that effort grew out of the initiative of (recent International Association of Wildland Fire Safety Award recipient) Jim Cook, Training Projects Coordinator for the U.S. Forest Service's Fire and Aviation Management program. According to Cook, he and his collaborators were acquiring potential solutions with promise from many sources, rapidly prototyping them, and seeing what worked. At the time, their intent was to quickly find solutions to pressing organizational needs through trial and error, not necessarily to achieve optimal design and performance. A group of Interagency Hotshot Crew (IHC) Superintendents gained exposure to the AAR through this budding human factors and leadership training effort, then modeled and pioneered the concept in their agencies. This body of practices would later become the training curriculum of the National Wildfire Coordinating Group (NWCG) Wildland Fire Leadership Development Program (WFLDP) (Cook, pers. comm. with DeGrosky, October 25 & 26, 2004).

As the NWCG leadership training initiative evolved and eventually gained full management support, what is now the WFLDP introduced thousands of emerging leaders to the AAR process. AAR implementation in NWCG agencies accelerated rapidly in 2002 when guidance for the conduct of AARs appeared in the NWCG Incident Response Pocket Guide (IRPG) and the Wildland Fire Lessons Learned Center conducted a series of AAR train-the-trainer workshops. Owing to the success of these initiatives, a significant part of the wildland fire workforce now knows the purpose and intent of the AAR, and many crews, modules, teams, and organizations conduct some type of AAR process.

Research into current AAR practices in wildland fire agencies is limited. However, while little hard data exists, available data collected both anecdotally and through a single quasi-experimental study, suggest that, as a tool of organizational learning, AARs may not be

influencing wildland fire operations as thoroughly as might be hoped (DeGrosky 2005). That is not to suggest that the agencies have underachieved in their effort to adopt the AAR as a technique for reviewing experience with the intent of improving performance. Indeed, the AAR concept also evolved slowly (over 20 years) in the U.S. Army, who created the process. (Garvin, 2000; Parry and Darling 2001). The research that has been done suggests that perceptions exist that an AAR represents an administrative requirement, something to be endured, or a one-off, stand-alone event (DeGrosky 2005).

Darling and Parry (2000) found that many organizations that had attempted to import the AAR to use it within their operations as a path to becoming learning organizations had fallen short, and few had succeeded in making AARs part of their culture. Though Darling and Parry's study did not include wildland fire agencies, their findings provide some insights about causes and solutions that may apply, so an excerpt of those findings follows.

*The Struggle to Transport AARs to Civilian Organizations*

Darling and Parry (2000) found that most early AAR adopters simply did not transport enough of the way the Army used AARs to make it a living practice. The most common error was holding AARs infrequently as ad-hoc responses to an event or problem—often a post-mortem of a failure. This removed AARs from the normal context of, and mechanisms for, planning and taking action. According to Darling and Parry, AARs conducted outside of a regular context very rarely enhance future performance. In workplaces where AARs were not a regular part of how leaders lead, AARs happened infrequently or (if they were mandated) people often treated them as a check-the-box exercise. By way of contrast, the Army considers leading AARs a critical part of leadership behavior (Shinseki and Hesselbein 2004, p. 138).

Parry and Darling (2001) also found that a knowledge-management mindset led some organizations to introduce AARs to generate comprehensive understanding about a past event or to capture knowledge—rather than to generate actionable insights. Though initially successful, in some cases, over time this practice diminished the level of candor and the willingness to take the time to do AARs. In some settings AAR participants were expected to produce a set of recommendations for unspecified others to implement. When this happened, no one was accountable for action, so recommendations gathered dust. By contrast, Army AARs are strongly focused on producing action items that the team itself will take. In the course of Darling and Parry's (2000) research, several Army leaders underlined this point by saying that, in practice, the AAR meeting represents only the middle third of a successful AAR, with the first third being preparation, and the all-important last third being active follow through. Failing to generate actionable improvements for AAR participants becomes a critical point of AAR failure, because the energy that fuels the sustained use of any tool comes when people see better outcomes from the time they invested in using that tool.

According to Parry, Darling and Robbins (1997), well-intended efforts to transfer best practices to a different context often fail, and such disappointments typically begin when practitioners miss interdependencies between the practice and other tools, structures and norms in the original setting. Every practice has what can be called an “inside” (the process steps, skills and behaviors) and an “outside” (the connecting points into its context - the critical elements of its

ecosystem). The outside can often prove fairly invisible, complex, and difficult to untangle, yet is part and parcel of the success of the practice. So for propagation of a practice to succeed, one must discover which of these outside connecting points were critical to its success in the original setting, and then find or build equivalents of these connections in the new setting.

In their efforts to transplant AARs from their Army context, most early adopter organizations took the inside—the AAR meeting (the four questions, ground rules, etc.) out of the Army’s rich web of interlaced practices (the AAR’s outside) and tried to grow the AAR in their own settings—as a stand-alone practice. Consequently, they failed to bring along critical elements of context that AARs need to thrive (Parry and Darling 2000). Peter Senge broke it down this way, “. . . most every corporate effort to graft this truly innovative practice into their culture has failed because, again and again, people reduce the living practice to a sterile technique . . . the crucial difference lies in the synergy between culture and method” (Senge, pers. comm.. with Darling and Parry, December, 2000)

### **Beyond the AAR: The Action Review Cycle (ARC)**

In looking at examples of strong success in applying AARs outside the Army context, Parry and Darling (2001) found that the most successful adopters had used AARs as an iterative, forward-focused regular practice that became part of how the team’s own work was accomplished. This orientation worked because it paved the way for the team to make improvements through the team’s own local action. This in turn fueled participation because people saw the time they had spent in AARs producing a tangible impact. Darling and Parry (2000) posited that over time, local success with improving results, through AARs, increases the interest in seeking out applicable improvements developed by other teams, which sets a positive cycle in motion serving as a key ingredient in shaping a culture of learning in the overall organization.

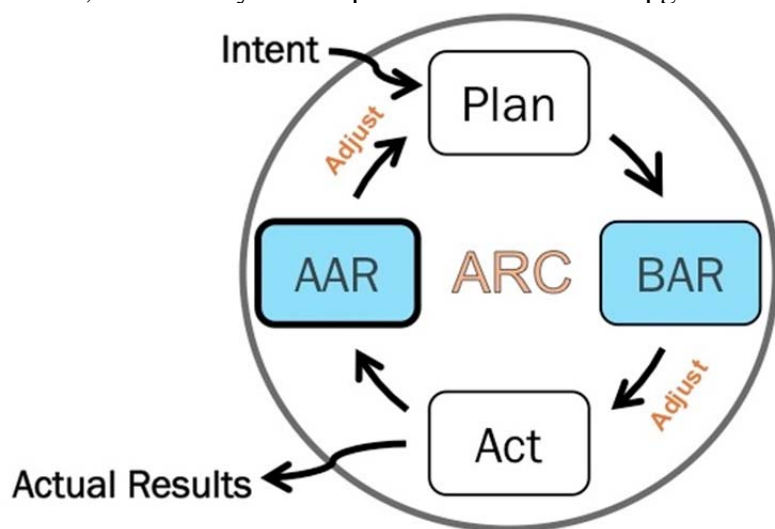
Subsequent research by Darling, Parry and Moore (2005), led them to a gold-standard AAR practitioner that strongly shaped their thinking about how to upgrade the concept and practice of AARs. That gold standard practitioner was the OPFOR at the U.S. Army’s NTC. OPFOR’s purpose is to be a worthy adversary on the battlefield so that every brigade deployed to the NTC for training improves its performance. That means that the OPFOR must be capable of humbling any unit that comes up against them throughout ever-changing scenarios. Consequently, the OPFOR must learn and adapt very quickly as a unit, during mission execution, and every day. In addressing why they were publishing an in-depth article about a military organization in a premier business publication, Harvard Business Review’s Executive Editor described the NTC’s OPFOR as very likely the world’s premier learning organization – quite an accolade (personal communication with Darling and Parry, 2004).

Darling and Parry were drawn to studying OPFOR for two pragmatic reasons; demonstrated strategic impact and the sustainability of its use of AARs. This organization had taken the AAR out of its original application as a training technique and applied it to shape an agile learning organization – with impressive results. Second, by building an AAR cycle into their everyday work without the benefit of extra specialized staffing (such as observers or facilitators), OPFOR had demonstrated that an mid-sized organization without a lot of supplemental resources could

make AARs a sustainable practice, and make it an every-day part of the way the organization operated (Darling, Parry and Moore 2005).

Finally, Darling, Parry and Moore (2005) established that, at its origins and at the hands of its best practitioners, the AAR was only one element in a complete organizational learning cycle, and that this fact proved essential to its potency and efficiency. This cycle included communicating intent, planning, preparation, action, review, and follow-through that informed future intent and planning, and so on.

In 2006, Parry, Pires and Sparkes-Guber (2007) presented a concept that would return the AAR to its proper function as a part of an integrated cycle, prove portable to other contexts, and re-establish the AAR as a potential toolset for building a culture of organizational learning. They chose the name Action Review Cycle (ARC) to differentiate the integrated cycle from its well-known element (the AAR meeting) and to escape the problematic bias created by the term “after-action.” Note that, while an AAR meeting does occur after a unit of action, as used by its most successful practitioners, it is used regularly and iteratively enough that it could be as accurately described as occurring *between* units of action. By 2008, Parry et al. had applied the ARC model in a wide range of settings, refining it along the way. Through application in the energy, consumer products, manufacturing, mining, finance, philanthropy, IT, education, and insurance sectors, the ARC cycle had proven itself a useful upgrade to AAR-only approaches.



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ARC consists of three elements (Leader's Intent, BAR, and AAR) that fit into the flow of existing work processes (such as planning and action). The three ARC elements all reference one another and, over time, reinforce one another in team processes. When embedded in existing cycles of work, they also act to keep a clear shared picture of intent in the front of everyone's mind, and over time refine the quality of thinking and accountability that goes into formulating intent, plans, preparation and communication.

### **Applying ARC in wildland fire agencies**

Learning about the AAR technique outside of the context of a complete cycle of intent, planning, preparation, action, review and follow-through appears to limit its utility in wildland fire

agencies, just as it has in other civilian settings. While wildland fire personnel intuitively understand the complete cycle of leader's intent, BAR, and AAR within the flow of planning and action; they typically have not learned about the AAR in this context.

ARC repositions AARs as one of the elements of the complete cycle. The current WFLDP curriculum incorporates concepts that align well with the ARC. The WFLDP already includes leader's intent and planning as key concepts, strives to prepare participants with effective briefing skills, and teaches developing leaders to conduct AARs as standard procedure. Consequently, wildland fire agencies could adopt the ARC concept with relative ease. It is the authors' contention that a few steps would achieve this:

1. Enhance the existing approach to leader's intent, focused on building and verifying a more robust, shared understanding of the intent;
2. Modify and expand existing briefing approaches to include the four elements of a Before Action Review (BAR);
3. Present the concepts of leader's intent, planning, BAR and AAR as a holistic cycle that integrates leading, learning and execution.
4. Consider whether the cycle is being practiced in the places where it will provide greatest value in improved performance and in the shaping of a learning organization;
5. Strive to make it a norm that part of leading is leading learning, and that this is done by participation in learning both before and after firefighting engagements.

#### *The first element of ARC: Leader's Intent*

Wildland fire personnel currently learn a conventional, military inspired approach to leader's intent in which task, purpose, and end-state form its three essential parts. Shattuck (2000) made a clear case for the importance of clarity and communication of intent in the military, while also documenting a widespread lack of consistency in its formulation and in its practice. Parry had observed this inconsistency as widespread in the civilian world as well—clarity was often assumed to exist even when in fact it did not, and, when intent was unclear (or had changed over the course of an extended piece of work), confusing, unfocused and unproductive AARs resulted.

The authors suggest that improvements can and should be made to the way that agencies in the wildland fire services develop and communicate intent. For example, historical perspectives on Commander's Intent (the military origin of leader's intent), and a contemporary perspective on leadership both suggest that leader's intent should develop interactively and collaboratively between leaders and their constituents. In Army operations the standard follow-up to a leader stating their Commander's Intent is subordinates reporting back their understanding of the intent along with a sketch of how they plan to operationalize it. This interaction has the effect of providing feedback to the leader on the clarity of their own and the team's communication and thinking, and provides an opportunity for revision, clarification and collaborative thinking. As each of the units involved in the mission brief back their understanding it becomes apparent whether an overall plan is emerging that makes sense.

Similarly, in their exploration of leader's intent in the wildland fire service, Ziegler and DeGrosky (2008) recommended that the NWCG cultivate a discussion of leader's intent that

takes the concept beyond the conduit model of communication and traditional leader-centric approaches to leadership that privilege an appointed leader's meanings without acknowledging the important role followers play in constructing intent by interacting with the leader. Plans in complex situations (such as battle with an enemy unit or a wildland fire) succeed or fail in execution in large part by how the parts fit together—and by how well the constituent units can adapt to emerging changes and make sound decisions that keep efforts integrated. Without a strong, shared understanding of well-articulated intent, units within any large operation default to optimizing their decisions locally, and that can be a disaster to the overall effort.

*The second element of ARC: Before Action Review (BAR)*

The BAR is a short disciplined conversation that efficiently provides a foundation for rigorous, meaningful learning by the same people engaged in the action. It is about being prepared before launching into action; preparing to achieve the desired results together, and preparing to learn together effectively.

A BAR consists of a team addressing four items together:

What is our intent (situation, task, purpose, end state, guidance) and high-level plan?

What specific challenges do we predict that we may face?

What lessons have we (or others) identified that we should apply in this situation?

What do we think will be our key to success THIS time? (This is to focus the team effort and articulate the key hypothesis behind the plan).

By assuring a shared understanding of intent, BARs also set the stage for a rigorous and focused AAR. BARs leverage past AARs by providing a trigger by which participants remember to apply insights gained from previous AARs to upcoming actions. The AAR question about causality provides an opportunity for the team to check its thinking against what they said in the BAR. This feedback loop in turn improves the care and precision that go into subsequent BARs.

As shared understanding of intent plays a foundational role in both effective, efficient AARs and in successful operations—the first step in any BAR is to verify (and often further refine) a shared understanding of leader's intent. The BAR also provides a final opportunity to clarify any fuzziness in plans, situational awareness, assumptions, or choice-points before jumping into action.

Wildland fire personnel currently learn and practice briefing techniques and protocols, and using them represents an accepted part of the wildland fire culture. To implement the ARC, wildland fire agencies could incorporate their existing briefing concept into the more robust BAR practice. Also, when the level of complexity and/or critical interdependencies justified it, and time and resources allowed, the organization could conduct a more elaborate BAR using a walkthrough or rehearsal of the planned action on either maps or terrain models, applying BAR questions to the individual elements of the plan in order to take readiness, alignment, coordination and situational awareness to a higher level.

An effective BAR improves situational awareness and helps build humility as a strength. By asking one's team to anticipate challenges and articulate their keys to success, leaders acknowledge uncertainty and establish up-front that no plan has a 100% probability of success,



which creates an opening for teams to talk about that uncertainty and prepare to handle it as best they can.

*The third element of ARC: After Action Review (AAR)*

An AAR consists of a team having a disciplined conversation, framed in the comparison of intended vs. actual results; a process that uses reflection on the past unit of shared work to shape the team members' future actions.

**Conclusion: A Strategic Shift**

The AAR has proven itself as an effective innovation for U.S. wildland fire agencies and their personnel. Yet in optimal practice the AAR represents just one part of a complete cycle—a cycle of intent, planning, preparation, action, and review. While wildland fire personnel intuitively understand this cycle, they typically have not learned about the AAR in this context, and that is limiting the AAR's utility. The authors suggest the Action Review Cycle (ARC) as a logical next step to build on the solid foundation provided by the current AAR approach in U.S. wildland fire agencies. Shifting to the ARC model offers a practical pathway to extend an existing practice widely adopted by the wildland fire service into an even more robust tool, with significant implications for improved wildland fire safety.

To move to this critical next step, the authors recommend that wildland fire agencies:

- Move quickly, firmly, and comprehensively from the AAR meeting as a stand-alone process to the ARC. The key early action is to add the BAR as a standard part of preparation for important actions.
- Engage in an intense effort to integrate ARC into operations as a fundamental and continuous organizational learning process that becomes routine, consistent, rigorous and important.
- Systematically prepare people to facilitate BARs and AARs, both as an element of the WFLDP and by employing a systematic train-the-trainer strategy.
- Consider shifting the AAR to a new set of questions, somewhat different than the four questions most wildland fire personnel have been taught.
  1. Look Forward and Focus: What situations are on the horizon where we are most likely to want or need lessons from this fire? What is our focus for this AAR (a key issue or framing question)
  2. Intent: What was our leader's intent – and what were the important gaps (plus and minus) in the intended vs. actual results?
  3. Causes: What happened that is relevant to how we got those results, what are the root causes, and did we anticipate and prepare for the challenges we faced?
  4. Lessons: What hypotheses do we have about what to take forward – what to sustain or improve and how– individually and as a team?
  5. Actions: What will each of us do as a result of this AAR conversation?

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