
After Action Review Survey

Findings and Recommendations

Wedge Canyon and Robert Fires
Glacier National Park, Montana
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Introduction

The After Action Review (AAR) outlines a process firefighters and overhead can use to evaluate their performance. The AAR process asks users to consider four separate questions about their activity: What was planned? What actually happened? Why did it happen, and what can we do next time? This process has been formalized and is presented in the Incident Response Pocket Guide (2002). This survey was conducted to assess the extent to which the process has been integrated in the fire fighting community.

Method

An 11-item survey was created to assess firefighter's knowledge and practice of AARs. The survey requested information concerning the familiarity with AARs, prior use and liked and disliked aspects. An example of the survey can be found in Appendix A. The survey was administered at two Type 1 fires in the Northern Rockies.

Participants

The AAR survey was completed by 407 individuals. Eight of the respondents failed to provide sufficient data and were excluded from the data set. Fifty-nine percent of the surveys (n = 236) were completed on the Wedge Canyon Fire in northern Montana and the remaining were completed at the Robert Fire (n = 163) also in northern Montana. Surveys were completed during the first week of August 2003.

Results

Position Descriptions

Firefighters represented the largest subgroup among respondents, 73 percent (n = 293). The second largest subgroup were members of the overhead teams, 12 percent (n = 46). A detailed breakdown of positions completing the survey is shown in Table 1. Table 1 also shows the number of reported fire assignments this year. A detailed breakdown of the firefighters is shown in Table 2. Data concerning the crew name was somewhat unreliable, particularly for contract crew with the same name but different numbers, (e.g. SRV #20). Examination of the crew names suggest that one or more members from 15 different engine crews and 41 different hand crews completed the survey. The latter number might over estimate the number because of the crew naming problem. Table 3 provides an estimate of the number of agency or contract hand crewmembers completing the survey. Of the hand crews, 60 percent (n = 149) of respondents were from contract crews while the remaining 40 percent (n = 98) were from agency crews.

Table 1. Position Descriptions and Mean Number of Fire Assignments this Year. Standard Deviations are also provided.

Position Description	Number	Percent	Mean Fire Assignments	Standard Deviations
Firefighters	293	73.43%	6.08	6.06
Overhead	46	11.53%	7.67	17.70
Camp Staff	15	3.76%	2.07	3.69
Unspecified	13	3.26%	3.69	4.37
Ground Support	12	3.01%	2.5	2.58
Medical	9	2.26%	1.78	0.97
Law Enforcement	4	1.00%	1.25	0.96
Sawyer/Swamper	3	0.75%	4.00	5.20
Helicopter Crew	2	0.50%	1.50	0.71
Agency Representative	1	0.25%	10.00	0.00
Crew Representative	1	0.25%	6.00	0.00
Total	399	100%	5.74	8.06

Table 2. Types of Firefighters

Firefighter Type	Number	Percent
Hand Crew	247	84.30%
Engine Crew	31	10.58%
Unspecified	10	3.41%
Helitack	4	1.37%
Dozer	1	0.34%
Total	293	100%

Table 3. Engine and Hand Crews by Agency and Contract

Crew Type	Agency Resource	Contract Resource	Unknown*
Engine Crew	0	5	10
Hand Crew	16	25	0
Total	16	30	10

* Many respondents provided numbers but it was not possible to determine if they worked for a federal agency, state, municipality, or contractor.

After Action Review Utilization

Of all respondents 60.6 percent had not participated in an AAR. For firefighters and overhead these percentages were 56.8 and 60.9, respectively. Table 4 details the participation in AARs by position description. Of the engine, hand, and helitack crews, participation in AARs varied dramatically. Of agency hand crews 81.4 percent (n = 79) reported participating in AARs. In contrast, only 16.6 percent (n = 24) of contract crews had participated. Participation rates are shown in Table 5 below.

Table 4. Participation in AARs by Position Description.

Position Description	Ever Participated in AAR		Totals
	No	Yes	
Firefighters	163	124	287
Overhead	28	18	46
Camp Staff	14	1	15
Unspecified	8	5	13
Ground Support	11	1	12
Medical	6	2	8
Law Enforcement	4	0	4
Helicopter Crew	1	1	2
Sawyer/Swamper	2	0	2
Agency Representative	0	1	1
Crew Representative	0	1	1
Not Reported			8
Total	237	154	399

Table 5 Participation in AARs by Position Description and Resource Origin.

Position Description	Resource Origin	Ever Participated in AAR		
		No	Yes	Totals
Engine Crew	Agency	0	0	0
	Contract	6	2	8
	Unknown	13	9	22
Total		19	11	30
Hand Crew	Agency	18	79	97
	Contract	121	24	145
	Unknown	0	0	0
Total		139	103	242
Helitack	Agency	0	4	4
	Contract	0	0	0
	Unknown	0	0	0
Total		0	4	4

AAR Reporting Methods, Benefits, and Shortcomings

Of the firefighters and overhead staff that participated in AARs, approximately half recorded them in writing (firefighter mean = 4.25, S = 3.45, overhead mean = 6.47, S = 3.97). As for sharing the results, firefighters reported rarely sharing the results with others (mean = 2.88, S = 2.91) while overhead reported sharing the results some of the time (mean = 5.17 S = 3.03). Finally, firefighters (mean = 8.33, S = 2.29) and overhead staff (mean = 7.28, S = 3.23) indicated that the AAR process was beneficial. Figure 1 depicts the average responses by both groups for these three

items. Data from other position descriptions were not analyzed because of the low sample size.

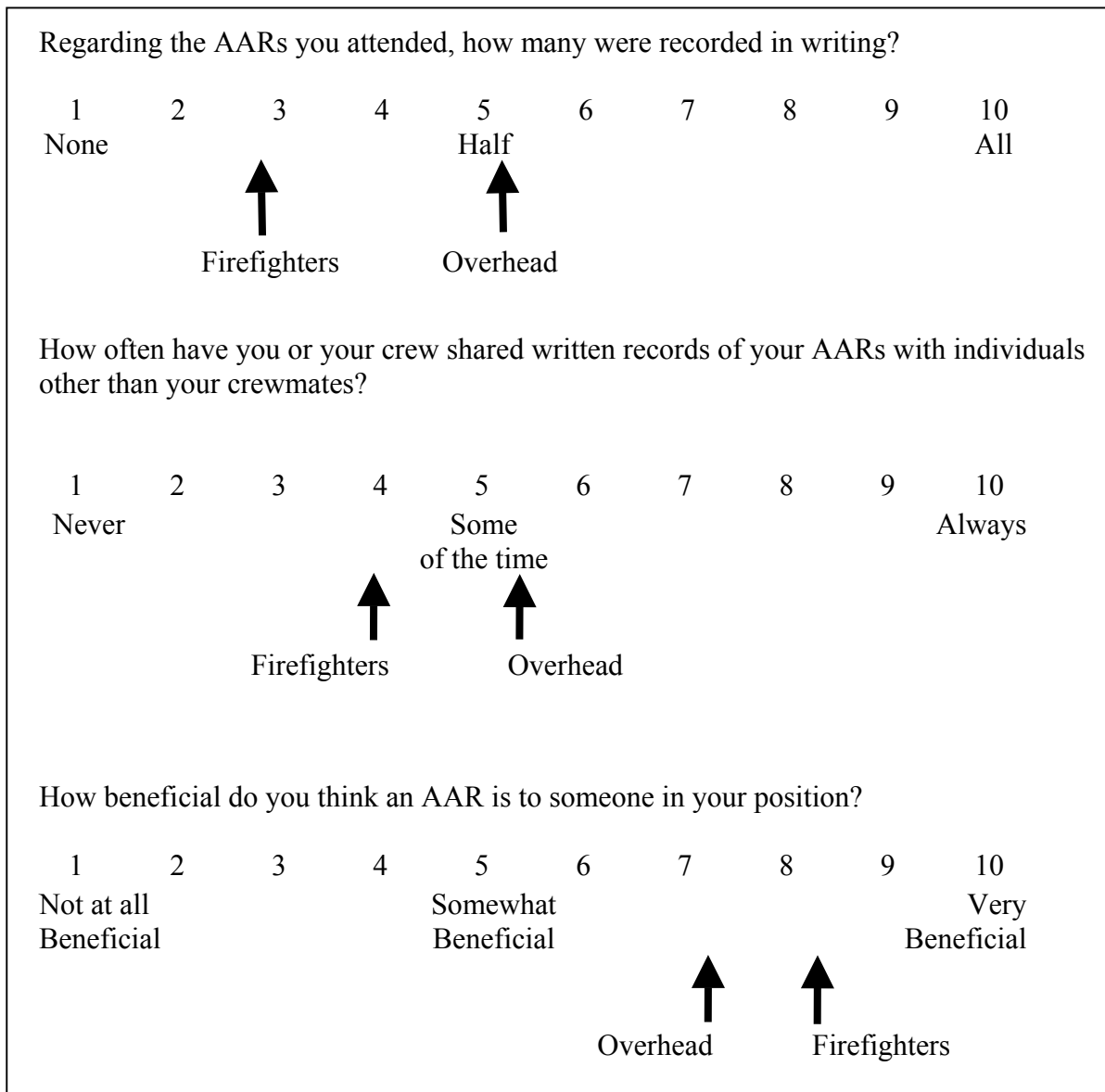


Figure 1 Mean ratings by overhead and firefighters.

One-hundred thirty-five individuals responded to the open ended question, “Please give an example of one (or more) thing(s) you like about the AAR process.” Responses to this item were categorized into seven prominent themes concerning the function of the AAR. The themes that described the responses included:

Evaluations of past actions or crew member performance or review of daily activities. Respondents indicated that the AAR process served as a mechanism to review, evaluate, or highlight past activities and performance of the crew, the fire, or the overhead.

Planning of future or corrective actions to enhance performance. Respondents indicated that the AAR process provided the opportunity to identify and plan changes in future actions to enhance performance or promote safety.

Promoting communications. Respondents described that the AAR process encouraged communications within the crew. The AAR process served to give subordinates an opportunity to speak so as to give praise, ask questions, provide feedback, express concerns, comments, and opinions, and update their understanding of the situation.

Explain, educate, and reduce uncertainty and confusion. Responses showed that individuals used the AAR process to explain prior actions and educate crew members on topics such as tactics and supervision. In a related process, respondents also reported using this process as a means of reducing confusion and uncertainty about actions.

Learning experience. Many respondents indicated that the AAR was a learning experience but did not directly indicate how.

All of the responses were reviewed by the author and categorized into one or more themes. Table 6 details the frequencies of these statements.

Table 6. Frequency of Themes in Response to “Features Liked” in the AAR Process.

Frequency	Response Theme
57	Evaluations of past actions or crew member performance or review of daily activities
44	Planning of future or corrective actions to enhance performance
44	Promoting communications
22	Explain, education, and reduce uncertainty and confusion
17	Learning experience

Eighty-four individuals provided responses to the item, “Please give an example of one (or more) thing(s) you dislike about the AAR process.” Responses were categorized into five themes that included:

Unintended / undesirable effects. Respondents conveyed a variety of outcomes that appeared to be unintended or undesirable. These outcomes included: reductions in morale, blaming, creation of personal conflicts, misunderstandings, fatigue, discussion of personal matters, and matters unrelated to the incident.

Time and timing issues. Several time related issues were reported by respondents. These issues included: inadequate time for AARs, AARs performed at inconvenient times (e.g., before sleep or meal time), AARs performed at

inappropriate times (e.g., reviews were performed too late after an incident), or difficulty gathering the people needed to participate in a timely manner.

Inappropriate AAR Facilitation. Respondents described shortcomings in the facilitation of AARs. Poor facilitators and poor group management were two examples.

Redundancy. Two types of redundancy were suggested. First, it was suggested that the AAR process was redundant with other crew activities. Second, it was suggested that the process encourages redundant comments from participants.

Process modifications. Several respondents indicated that changes in the questions in the AAR process might promote its utility.

Statements with the first two themes were the most prevalent. Table 7 provides a frequency count of themes portrayed in the responses.

Table 7. Frequency of Themes in Response to “Features disliked” in the AAR Process.

Frequency	Response Theme
26	Unintended effects
24	Time / Timing Issues
4	Inappropriate AAR Facilitation,
4	Redundancy
4	Process modifications

Discussion

The data show that AARs have become common among a subset of firefighters, those employed by federal agencies to be exact. Contract firefighting crews were often unaware of the process. In retrospect, references to the Incident Response Pocket Guide were received by some respondents with some confusion. On several occasions contract crewmembers would ask the surveyors to describe the pocket guide because they had no experience with it.

Of the firefighters completing the process, the self-report data suggest that about a third recorded the answers to the four AAR questions. About half of the survey overhead reported that written records of the process were kept. Firefighters and overhead reported that they share the results of the AAR process “some of the time.” With whom these findings are shared, however, is unclear. Further inquiry in this area is needed to clarify how AAR results are used by crewmembers and individuals outside the crew.

On average the AAR process was perceived to be beneficial by respondents who participated in them. Common themes in written response about what they liked about the process indicate that the process promotes communications, evaluations, and the planning of future actions that can enhance performance. Themes in response to what

respondents did not like centered on the presences of unintended or undesirable results and issues of time requirements and timeliness.

Overall two aspects of the process require further attention. First, it is likely the process has not been implemented among contract resources. Further investigations are needed to determine why. Second, consideration must be given to identifying sources and effects of undesirable effects and intervening to minimize them.

Appendix B – Response to Open-ended items

Note – the responses below were recorded exactly how they appeared on the completed survey cards.

Please give an example of one (or more) thing(s) you like about the AAR process:

-Clarifies what happened and how they day went - you learn a lot -opens up communication amongst crew

-Provides Lessons learned, so mistakes/ Near misses are not repeated -Allows opportunity to RG work thru a situation to come up with different "means to the end"

-to fix any or potential problems before they become major -answer any quesitons -accountability to the people you lead

A Review of the day gives folks the oppurtunity to ask questions, explain reasoning of tactics, and express any concerns with the operation

AAR make the rest of assignment more beneficial

Actual Critique of incident

Allows for crew members to inform other of progress/problems (squawks) more complete communication of goals / objectives

Allows things that could have gone better to be delt with so they are better in future fires.

Allows us to go over and correct things

Any form of communication is a good thing this is what helps keep all of us "SAFE"

brings up concerns or things done well in an open and informal way, there's always room to improve

brings up problems/breaks them down with input and solution

Chance to learn from your mistakes

Clears up confusion if there was any in the shift. People can discuss what was learned.

Communicating amongst one another

communication

Communication from firefighter up to sup.

Confirmation / clarification of days events and tomorrows needs - people are a 6 to talk about the day

Confusion about communications.

Crew interaction, up the good thing. Improve the bad

Crew Members that performed very well that day + crew members that need to step up

Critiquing

Critiquing the day helps me remember mistakes and not repeat them

Debriefing is an important part of the learning process. It enables people to talk and share about what works and what doesn't. It's important for safety and efficiency

determining what went as planned and what didn't

Different tactics and strategies

Discussion of fire behavior and a chance to correct/learn how to improve

Enlightenment

Everone participates during the AAR and by this process we are able to discuss things that need to be improved and attaboys for thing weve done well.

everyone has a chance to have input

Feedback

feedback and learn

Feedback from crew - everyone has a chance and a voice

Feedback, different perspectives, innovative ideas

feedback, questions, comments

Find out what went write and what went wrong.

Finding out what we did during the day and why what the big picture is

get stuff out, positives + negatives

get to have ideas about things I might have missed

give people (persons) diff opinions about fire fighting

Gives all a chance to voice opinions on success + failures of the days event

Gives crewmembers a chance to voice opinions and questions - promotes learning process

gives individuals the chance to learn and possibly improve tactics and strategies and identify safety issues which other folks may not have recognized (helps with fire reports)

gives me a chance to figure out why I just did whatever it was I just did

gives the crews more opportunities to learn something they don't know, and to use this knowledge later

Gives vital information on how crew is performing on the line and progress in crew production levels

Go over all actions on the fire

Go over anything that can be improved on.

good comments

Good learning opportunity, hear what others know in different areas or the larger picture

good tool for better ourselves

Good way to remind folks about debriefing formalized process makes it constructive

Great communication, keeps people in there feet and heads up

group improvement through open communication

head hunters; knee jerk reaction; place blame; needs to be an open platform

Helps reflect on past actions and gives insights as to areas that need work

I allows me to share my inner feelings with those I love the most; inmate crews

I can instantly chastize the individual in front of his/her peers. Shaming them into never repeating the act

I like several things, for example, we save the forest and happy to work with my co-workers

I think the AAR give new people the chance to talk "Improving it"

Ideas to improve

Identifying good and bad + what happened talking about your feelings, and what to do better next time

Identifies strengths (things that worked) and areas needing improvement in incident response actions

If it wasn't for the pussification of this job in the pas few years we could have worked all night last night and secured the burn and the fire. Instead we had to come in to meet our "2:1" "work:rest"; and today the burn went to shit on us, trapped 10 of our guys above it and almost got the other 10 on their way out in the other direction. We had an AAR afterwards.

If we do something wrong on the job, you will be shown or explain the matter

If you're not reviewing your actions, tactics, and strategy, how will you receive advice from peers who may have missed critical moments?

improve w/ feedback

Informs the crew of things that happened that they may not know about

input to use, mistakes to learn from

It ... the whole crew no what going on.

it brings in different points

It gives each crewmember the chance to express their opinions, perceptions and expectation and experiences. It allows the group as a whole to better understand & come to terms w/ stressful incidents

It gives everyone a chance to say what they saw and thought was suppose to happen and gets all rumors and assumptions squashed quickly

It gives you a chance to talk about what happens, and work out problems that might acure for future fires

It is meant for constructive ideas, not a session to complain or point fingers; it is a chance to solve problems while they're small

It let's you know what you are doing wrong and lets you know where to better yourself as crew and crew member

It's a great idea about the AAR Process. First, I think it's good to talk about what you did that day and also what went smoothly or not so smoothly. Also whether or not you would change anything for that work day.

It's a chance to review and improve upon mistakes

It's an opportunity to learn

It's good to review what went good and or bad and learn from it

Keeps every body heads up on the day's activity

knowledge of fire behavior

Learn from mistakes and accomplishments

Learn from the past

Learn from your mistakes, and/or learn new ways.

learning from the events of the day, and how you could improve

learning process, we can always improve

lessons learned, increase in gained knowledge

let's dialogue occur

Lets everyone knows what went on for the day- reminds you, you are part of the big picture

Lets people talk

Makes you think about what happened -provides opportunities to develop skills

more info

No comment

Open air ideas

open communication

Open process - chance to review and make things better

Opens the air

Opportunity to see how to improve

problems are put on the forefront

Provides opportunity to look at what worked well along with things that could be improved. Also can identify the "links" in a chain of events

quick

Recap anything that could have gone better

Recap of daily events, opportunity to learn from experience

recap of the day's events

Review daily ops + How to unprove objectives

Review lessons learned

Review to make better for the next shift. Safety!

reviewed incident

Reviewing the action

Reviews the days events learn weather patterns/ trigger points

safety record

Sand box recalling

So you can analyze what happened and apply what was learned

Standing around long enough to smoke a ciggarett

tactical success or failure, any problem and corrections used, ideas from all personnel and any difficulties they had. Close calls or hazards, ideas and corrective actions

talk about stuff after it happens

Talking with the crew. Finding a better way to complete our mission!

Tell you how good a worker you are

The AAR Brings up things that went well and what could have been done better so we can work more safety and efficiently

The Chance to discuss pro/cons of the days/Fires operation and to discuss new options

The idea or philosophy of allowing crew members to speak within a safe environment, no (self)consciousness of saying what you feel. Allows supervisors to hear how the crew feels about their choices and decisions

the review highlights the changes that need to be implemented if something doesn't or does go right

Things we should have done better

Things that I forget about throughout the day are brought back to my attention

Things that perhaps were not clear ... learn why our overhead made the decisions they did during the shift

things to improve on in similar situations

Thinking things through afterwards helps us learn. Writing things down helps us remember what we learn.

to find out if others saw a situation as I saw it

to reassess and evaluate strategies + tactics taken on an incident by own + adjoining crews

Things + -'s of crew ops

Unify and lesson learned

Ways for majority of federal land management individuals to better use / trust non land managers in their positions

Ways to be more productive + Efficient

You learn, review mistakes check Wx Trending

Note – the responses below were recorded exactly how they appeared on the completed survey cards.

Please give an example of one (or more) thing(s) you dislike about the AAR process:

- Im 100% for AARs - but when you get in and your tired and hungry you just want it to be over so you can eat and go to bed

1-AARS must be done as soon after stressful events as possible, 2-anyone whose actions during incident may be questioned during AAR (including leadership) should NOT facilitate the AAR

a little time consuming

Bad como

bickering & defensiveness

Brought morale down, by presenters / Facilitator

Can be "superficial" or shallow reviews; Potential for "abuse" (negative input for irrelevant reasons)

Can be a time of "Finger-Pointing"

can be redundant

Can take a long if busy day - can be difficult for some people to focus on what not who when they are angry, etc. (Emotion)

comment are not always what people really want to say

cuts into sleeping eating time

different people interpret different events

Disagreements between mods or individuals

Disagreements can cause tension

Discontinuous at times

everybody trying to talk at once

everything

finding time to do it

for the most part, nothing. Sometimes when not much needs to be said people go grasping for things

Head hunting, someone to place blame on

Head hunting; knee-jerk decisions which often don't fit the ground. Looking for someone to blame

I dislike being on the receiving end of a sathing Instant After Action Review

I don't think that they are bad

I have no problems with the AAR process

I think verbal AARs are more beneficial on a daily basis because they allow people to be more comfortable with their debriefing and make them their own

I want to go home/sleep

If a situation goes bad, it should not be an AAR process (depending on personalities) it could get defensive attitudes within the crew

if it's way past the incident

If not facilitated correctly, it can turn into a negative experience

Inmates spread STD's

it becomes repetitious

It can break down into personal battles

It can get old; pretty soon people (myself included) become less involved... I think a question or two during the day would be helpful... while things are happening.

it happens when you are tired and don't want to stand around discussing it

It's all good

Its not the aar I don't like but the fact that with some teams, are we on our ideas really listened to or do they go on deaf ears

It's sometimes a moral downer

lack of criticism of overhead (defensiveness, ownership, blaming others)

Length of time it takes and showed very little benefit

More paperwork

need to review all complaints with the audience

never any time

No Follow up

Not all feel free to be honest. Blame tends to be shifted to "one" when things go wrong or bad

Not always conducted w/ openness to admitting short comings or mistakes. Can be used punitively - or can be useless if done as opportunity to pat ourselves on the back when not appropriate

Not as good as discussions at bar (seriously)

not enough feedback, no participation from the crew

Not everyone participates

Not having a chance to tell a good fire story related to the incident

nothing personal should be talked about at AAR

often difficult to gather resources who were present if AAR is not done on site of incident

opens discussion

people get defensive when discussing what happened

People sugar coat possible mistakes they may have made, with fear to be criticized personally

putting crew down

Questions

Questions need to be reworded

Repetition + Complacence During the talk

should ask: Were we lucky

should be done after shift or next morning. | It can be a bad trade off if sleep is more important

Singling out a person can cause conflict.

some folks don't learn from them; some head hunting; inappropriate decisions at times

Some items very irrelevant to lower level positions

some times just for the sake of saying we had one

sometimes not enough input given by everyone

Sometimes redundant + time wasting

sometimes they are involving folks without a clue of events

Sometimes they can be too monotonous everyone saying the same things everytime

Sometimes they occur a few shifts later, allowing some details to be left

Sometimes too long of discussion of things that don't pertain to the incident

Takes up time.

the format = p 16 of pocket guide

The put in writing thing that they shouldn't

the time it takes

The verbal path much more beneficial than the paperwork. Difficult to complete during periods with frequent multiple IA's

They are usually beneficial

Time consuming

Time consuming, hard to fit in a day after shift.

time to do AARs is done outside of 2:1 work rest during go fires! Keep AAR, remove 2:1 & PAY PEOPLE FOR WHAT THEY WORK!

Time!

took time out of day, slowed things down

waiting around instead of eating

Written AARs are not very realistic for everyday (shift) use