

HEAVY EQUIPMENT BOSS (HEQB) SPAN OF CONTROL

October 30, 2019 (Updated: January 16th, 2020)

TO: Thomas Hayes, Chair, Incident and Position Standards Committee

FROM: Ben Oakleaf, Chair, Incident Operations Subcommittee

SUBJECT: Evaluation of the Span of Control for Heavy Equipment Boss, Single Resource and Strike Team Leader Heavy Equipment.

BACKGROUND:

The Incident Operations Subcommittee (IOSC) was tasked with evaluating a request from the Coordinating Group Advisory Board (CGAC) regarding the span of control for a Heavy Equipment Boss (HEQB). The specific tasking:

Please convene a task group of stakeholders to evaluate the Heavy Equipment Boss, Single Resource (HEQB) and Strike Team Leader Heavy Equipment (STEQ) position as requested by the Coordinating Group Advisory Board (CGAC).... The request states:

"In an effort to help alleviate the impacts of the national HEQB shortage, the Northern Rockies Coordinating Group, with support through CGAC, has proposed that a HEQB have the latitude to manage multiple pieces of heavy equipment (up to 3) during suppression operations. Equipment they are managing should be working in a proximate location, in order to maintain communications and operational control. Appropriate risk management needs to be employed based on the current and expected fire environment to ensure the level of supervision is appropriated for the environmental conditions."

The NWCG Tasking Memo TM-19-005 is attached.

A task group was formed that was comprised of three members from the Incident Operations Subcommittee, two members from the Equipment Technology Committee, and one member from the Risk Management Committee. Below are the initial findings of the task group.

FINDINGS:

1. No specified number regarding span of control for HEQB or Strike Team Equipment (STEQ) exists.

However, there does exist several "suggestions" and "rules of thumb" that are ambiguous at best. These are listed below:

- S336 – Heavy Equipment Boss Course states: *Heavy equipment that will be used together as a package, without significant geographical separation, will often be managed by one HEQB; if you feel you are being asked to supervise too much equipment, or if it is often separated, consider asking your supervisor for a strike team or task force leader (STEQ, TFLD).*
- S330 –Strike Team / Taskforce Leader states *"...a strike team configuration is TWO dozers or TWO tractor plows."* This implies that the span of control for a HEQB is therefore one.
- PMS 210 Page 62. *A Single Resource Boss is responsible for supervising and directing a fire suppression module, such as a hand crew, engine, helicopter, heavy equipment, firing team, or one or more fallers."* For this definition "a" would assumed to be equivalent to one.
- NWCG Definitions:
 - Span of Control – The supervisory ratio from three-to-seven individuals, with five-to-one being established as optimum.
 - Single Resource – An individual, a piece of equipment and its personnel complement, or a crew or team of individuals with an identified work supervisor that can be used on an incident.
- Interagency Standards for Fire and Fire Aviation Operations, Chapter 14 Page 305. *"Agency and contract dozer/tractor plows will have agency supplied supervision when assigned to any suppression operations.*

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- As evident by the CGAC request, there may be a cultural assumption that the current span of control for HEQB is two or less. *“The standard practice is to pair each piece of heavy equipment with a qualified HEQB.”*

2. Several Lessons Learned have occurred relating to heavy equipment and inadequate supervision.

Below are some of the findings/recommendations for two incidents that are associated with inadequate fireline supervision and heavy equipment.

- Sheep Gap Fire Findings (2017) – Lolo Nation Forest, MT:
While the heavy equipment task force is an efficient and effective model, this incident brought to light a potential pitfall regarding the number of fireline personnel (HEQB, TFLD) required to provide adequate supervision and safety of the task force. The contract requiring a minimum of one HEQB working directly with the task force is likely adequate in most situations. However, in situations such as the events of September 12 when multiple pieces of equipment become separated and utilized different escape routes, fireline supervision may become inadequate. This issue may also occur in other situations, simply due to the nature of the different pieces of equipment, which operate at different speeds, have different limitations and capabilities.
- Pothole Fire (2019) – Twin Falls District BLM, ID:
Current policy does not require cooperator equipment to operate with support personnel (such as a swamper). In this instance, the dozer operator met the qualification standard identified in the RFPA agreement and had communication with the IC and RFPA Director, but no other resources were working directly with him. It is recommended that whenever possible experienced personnel be assigned to support heavy equipment, act as a lookout/scout, watch for slop overs, and advise on tactics.
- Other incidents of note that were related to lack of supervision by HEQB:
 - Pleasant Fire (2017) – Cal Fire
 - Liberty Fire (2017) – Montana DNR
 - Lumpkin Fire (2015) – Cal Fire
 - Trailhead Fire (2016) – Eldorado NF, CA.

The overarching and consistent finding of these incidents seems to be that the negative events occurred when there was a lack of direct supervision for the piece of equipment. The lack of supervision led to poor decision by the operator, late or untimely decisions, and a general chaos in trying to organize large pieces of equipment in a short time frame.

REASONING & RECOMMENDATIONS:

As the specific request stands, increasing the span of control for HEQB to three, the task group does not support this request. The general consensus was that three pieces of equipment is too much responsibility for someone at the single resource level. The basis for this decision is as follows:

1. Current practices would not permit other single resource level qualifications to supervisor more than one, let alone three. For example, it would not be acceptable to allow a Crew Boss (CRWB) to supervise two crews, a Helicopter Manager (HEMB) to supervise two helicopters, or and Engine Boss (ENGB) to supervise two engines; even if they are in close proximity. As documented earlier, even though no specific definition for HEQB span of control exists; none of the statements found suggest that three would be appropriate.
2. Increasing the number to three would create a slippery slope. As stated in the request, there would be several parameters defined when this number would be used. But as is often seen in Lessons Learned, we do not always follow those parameters. Those parameters are also subjective, and what is simple fire behavior or “proximate location” for some, will not be the same for others.
3. This request does not stem from an issue with HEQB performance, it originated because of a resource shortage. By accepting a span of control of three, we would be effectively taking a problem that is occurring

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at the management and organizational level and pushing it down to some of our least experienced firefighters.

The group does recognize the desire for flexibility as it relates to incidents, situations and personnel ability. However, we felt that this request does not specifically provide for that flexibility without adding too much risk.

In rejecting this proposal and acknowledging the lack of policy regarding a defined span of control, it is important to note that this recommendations should NOT be used as an endorsement for a span of control of two. The primary guidance regarding the span of control of a *Single Resource Boss* is the term “*Single*”, meaning one. We also recognize that this interpretation may be too restrictive for the current environment where most HEQBs are used. Options such as increasing secondary supervision under a HEQB, or creating a specific qualification that could handle a larger span of control were discussed. However, any option related to the span of control for a HEQB should be evaluated independent of this request, and be put through a more robust and thorough process that includes more stakeholders.