Using the Defense Organizational Climate Survey (DEOCS) to Assess Command Climate over Time

DEFENSE EQUAL OPPORTUNITY MANAGEMENT INSTITUTE
DIRECTORATE OF RESEARCH DEVELOPMENT AND STRATEGIC INITIATIVES

Dr. Richard Oliver Hope Human Relations Research Center
Directed by Dr. Daniel P. McDonald, Executive Director
366 Tuskegee Airmen Drive Patrick AFB, FL 32925
321-494-2747

Prepared by
Hope Research Center
DEOMI R&D
Dr. Daniel P. McDonald

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EXECUTIVE SUMMARY

Organizational assessment is an integral component of promoting positive behaviors, preventing unwanted behaviors, and managing command climate overall. The Defense Equal Opportunity Management Institute (DEOMI) provides a suite of tools for commanders to manage climate as well as to support them in leveraging their Defense Organizational Climate Survey (DEOCS) results. To enhance commander tools and support, DEOMI partnered with Sexual Assault Prevention and Response Office (SAPRO) to develop a methodology for examining and assessing change in climates between commanders' first and second administrations of the DEOCS. This effort focused on two main areas: (1) combining and summarizing unit DEOCS climate change results to quantify the amount of improving or declining sexual assault-related climates (within each service component) and (2) developing tools to educate commanders on change management and interpret progress in this process. Specific progress was made by identifying best methods for analyzing and reporting this data, vetting its utility to the Services, and initiating a product for commander use. This product is valuable to a commander for early detection and prevention of problematic behaviors. DEOMI established a strong foundation in this domain by completing the necessary research that will enable the field's multiple constituents to benefit from this rich data that provides another perspective of command climate.

USING THE DEFENSE ORGANIZATIONAL CLIMATE SURVEY (DEOCS) TO ASSESS COMMAND CLIMATE OVER TIME

Organizational assessment is a key primary prevention strategy that equal opportunity (EO) professionals and commanders rely on to detect issues before they arise to a level of more egregious behavior. In addition to preventing negative behavior, organizational assessments can be harnessed to promote positive behaviors. This is because command climate is an important driver of Service member's attitudes, behavior, and, ultimately, mission effectiveness. In order to leverage and maximize the positive influence of command climate, leadership must set and maintain the *right* climate. The DEOCS is a commander's management tool that provides insight into the positive and negative attributes of the command climate. This knowledge can be used to identify potential areas of concerns and organizational strengths.

Current wisdom in the Department of Defense (DoD) suggests that incoming commanders inherit the command climate of the previous leader; therefore, their first organizational assessment can be used as a baseline to quantify change in future assessments. DEOMI recognizes the value of empowering commanders to view climate management as an ongoing process. DEOMI collaborated with SAPRO from 2015 to 2018 to assess unit command climate change using the DEOCS. Specifically, the focus was on command climate change within the *same units* with the *same commanders*. The goal of assessing change is to evaluate climate patterns that could add value and information to an absolute threshold or scale provided by the Likert-scale scores. This effort focused on two main areas: (1) combining and summarizing unit DEOCS climate change results to quantify the amount of improving or declining sexual assault-related climates (within each service component) and (2) developing tools to educate commanders on change management and interpret progress in this process. This report will detail the research completed by DEOMI and SAPRO between 2015 and 2018. As of 1 October

2018, the Office of People Analytics (OPA) became the office of primary responsibility for this work effort and on 24 September 2019 determined to no longer pursue this project.

1. Feasibility and utility of combining and summarizing unit-level command climate over time

DEOMI, in collaboration with SAPRO, began research to establish a process for combining and summarizing unit-level command climate change using the DEOCS. Specifically, the focus was on command climate change within the *same units* with the *same commanders*. This effort spanned two phases: (1) initial research into best methods for analyzing this data and (2) introducing the Services to this capability to assess utility.

1.1 Phase 1: Initial research into using the DEOCS to assess command climate over time

This section discusses progress made during Phase 1 of this project. The overall objective was to identify the best approach to measure and summarize meaningful change in unit command climate over time across units.

	Phase 1: Actions	Status
1)	DEOMI presented various analysis options and visuals displays to SAPRO depicting command climate change from FY14 to FY15.	Complete January 2016
2)	DEOMI provided SAPRO counts of units experiencing improving and declining command climates from FY15 to FY16.	Complete December 2016

SAPRO requested metrics of command climate change (improvement or decline) that could be included in their annual report to congress. SAPRO requested a way to count the number of units in each Service that had meaningful improvement or decline in climate within the span of a commander's leadership. SAPRO was also interested in identifying (counting) units who declined in more than one area of climate.

In order to conduct this research, DEOMI developed a method to identify DEOCS results with the same commander and catalogue completed DEOCS administrations into a sequential variable. For this project, SAPRO was interested both in units' annual change and change over time. To create this dataset, certain business rules were observed. First, units had at least 16 respondents in each occurrence. Second, units (identified by the UIC) had the same Commander during both administrations of the DEOCS. Third, for inclusion into the analysis, units' first administration of the DEOCS occurred within FY14 and their second administration occurred within FY15. Fourth, units were only included when there were more than three months between occurrences of the DEOCS. Additionally, if a requestor/administrator solicited greater than 16 breakout reports, then they were assigned two DEOCS identification codes and subsequently filtered out of this analysis due to the false appearance of multiple occurrences within three months. Units with sample sizes that varied from occurrence 1 to occurrence 2 by larger than 50% were removed. Finally, DEOMI tracked unit means (statistical averages) of three metrics from DoD SAPR Progress Report Metrics from DEOCS 4.0. The metrics included: Metric 4 (Command Climate Index – Continuum of Harm), Metric 9 (Victim Retaliation: Command Climate Perspective), and Metric 11 (Service Members' Perceptions of Leadership

Support for SAPR). This general process was repeated again in FY16 to make comparisons between units in FY15 to FY16.

DEOMI and SAPRO collaborated to identify the best assessment of "change" between DEOCS administrations as well as the most interpretable presentation of this information to the services. This discussion included consideration of three different characteristics of change: (1) direction, (2) magnitude, and (3) favorability. Direction of change can be defined as the increase or decrease of the climate mean from time 1 to time 2. This is informative, but it does not provide any guidance about whether this increase or decrease is simply a typical fluctuation of the metric or if it can be considered important or meaningful. Magnitude of change can be defined by an effect size statistic. Here, Hedges' "g" is an effect size statistic that uses the mean, standard deviation (a measure of the distribution), and changes between administration to evaluate practical importance of change. This statistic was selected due to its ability to effectively calculate magnitude of change for both small units and large units. SAPRO selected the threshold of .50 and above for an effect size to be considered "large" (see Table 1 for the effect size criteria). Taken together, these two aspects of change were all incorporated to communicate a picture of unit climate change over time.

Table 1.
SAPRO's Preferred Effect Size Criteria

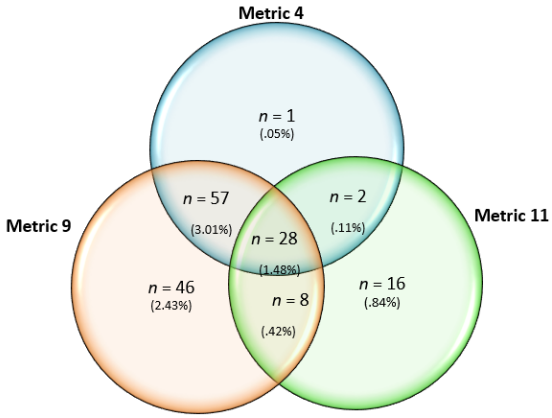
Effect Size Value	Magnitude of Change
Less than .10	No Change
.10 – .29	Small Change
.30 – .49	Medium Change
.50 and Above	Large Change

Next, DEOMI provided these results to SAPRO for all units within the DoD as well as by service. The results contained tables that displayed counts and percentages of units that experienced *no change*, *small negative change*, *small positive change*, *medium negative change*, *medium positive change*, *large negative change*, and *large positive change* (Table 2). Additionally, DEOMI provided Venn Diagrams displaying units that experienced negative changes across one or more metrics (of the three metrics examined) from first administration to second administration. Here, the results only included units that had large-effect changes (Figure 1). Venn diagrams were also provided, across the metrics, for large *positive* changes from first administration to second administration. The display of these results was finalized through an iterative feedback process between DEOMI and SAPRO to ensure the most interpretable communication of unit command climate change.

Table 2.
Example of Metric 4 Mean Differences

	n Units	% of total DoD Units
No Change	562	29.7%
Small Negative Change	394	20.8%
Small Positive Change	418	22.1%
Medium Negative Change	161	8.5%
Medium Positive Change	186	9.8%
Large Negative Change	88	4.6%
Large Positive Change	86	4.5%

Figure 1.
Example of Matched DoD units with Negative Changes from Occurrence 1 to Occurrence 2 and Large Effect Sizes (.50+) across SAPR Metrics



SAPRO received results for FY15 and FY16. In addition to developing a baseline understanding of what unit command climate change is occurring in the DoD, these results were also examined for stability over time. Encouraging initial results led SAPRO to recommend presenting this data to the Services to vet interest in this type of data and assess whether the field would find this valuable (Phase 2).

1.2 Phase 2: Assessing the utility of command climate change metrics for the Services

This section discusses progress made during Phase 2 of this project. The overall objective was to assess the utility of command climate change metrics for the Services.

Phase 2: Actions	Status
1) Introduce concept of climate change metrics to each Service at SAPRO's IPT.	Complete November 2017
2) Provide each Service their respective report identifying units (by UIC) that experienced meaningful change in command climate from FY15 to FY16.	Complete November 2017

SAPRO requested DEOMI provide a comparison of unit climate under the leadership of the same commander from FY15 to FY16 that could formally be presented to the Services. Like the previous research phase, SAPRO requested that these results provide counts of units with meaningful improving or declining climates and units with improvement or decline across multiple metrics.

In order to meet this request, DEOMI created a bounded dataset that only included commanders who administrated their first DEOCS in FY15 and their second, with the same unit, in FY16. This provided a conservative sample of the DoD but provided control that increased confidence that the climate comparisons were appropriate. Two primary data caveats were provided that impacted (1) the amount of data that could be tracked, and (2) the interpretation of the results.

First, occurrences were identified using the unit's UIC, commander's email address, and the date the DEOCS report was generated. There is the possibility of input errors as these pieces of information are entered manually by the survey requestor/administrator. For example, if an email address was entered incorrectly, the DEOCS results would not be properly matched to previous or future occurrences. To address this error, the data preparation only included units that could confidently be paired by administration; thus erring on the side of caution and limiting the amount of units that could be included. The resulting dataset may underestimate the prevalence of unit growth or units experiencing issues in the Force.

Similarly, the UIC that the requestor/administrator provides must be at the same level of analysis for the DEOCS administrations to be matched. For instance, if a DEOCS is requested at the battalion level in the first administration, but then at the second administration the commander's email is paired with multiple company level UICs instead, the administrations will not successfully be paired. Additionally, if a requestor/administrator solicited greater than 16 breakout reports, the surveys were divided into two administrations, and subsequently filtered out of this analysis due to the false appearance of multiple occurrences within three months. A similar concern was that survey administrators may erroneously skip the feature enabling smaller "breakout" reports, and instead request multiple DEOCS with the same UIC. This provides the appearance of multiple occurrences of DEOCS administrations at one time. Based on the filtering mechanism discussed previously, these units were excluded from analysis. The resulting caveat is that the data provided is a conservative estimate of units with occurrence 1 in FY15 and occurrence 2 in FY16.

Second, interpretation of the results is not robust to ceiling effects. Hedges' "g" measurement of effect size was used to evaluate the magnitude of change. Effect size is derived from differences in mean scores from the first DEOCS administration to the second administration. As such, units with very high scores at the first administration have limited potential to achieve substantial improvements at the second administration—this is commonly referred to as a "ceiling effect." Due to these ceiling effects, metric means may still be considered *favorable* even if they decreased with a large effect at the second administration.

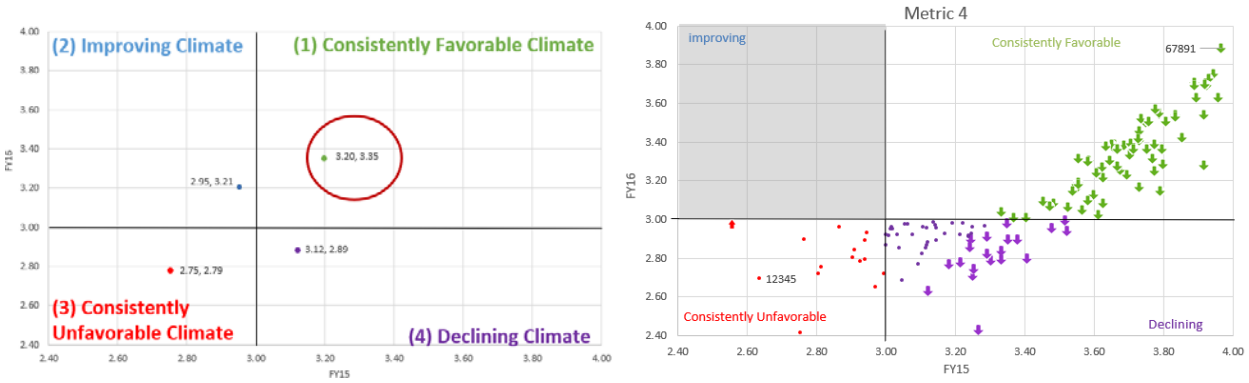
DEOMI utilized the analysis and display that were agreed upon by DEOMI and SAPRO in the research phase with one additional enhancement. In addition to considering change in terms of

(1) direction and (2) magnitude, a third way to discuss change was included when presenting results to the services—favorability. Favorability is a standard or criteria DEOMI set to determine if a unit's mean is healthy (independent of any change that the unit may have experienced). Unit climate means exceeding 3.00 are considered "favorable" for a couple of reasons. First, the response anchors of DEOCS 4.0 range from 1 (*not at all* or *not at all likely*) to 4 (*great extent* or *very likely*). Optimal means should correspond with the favorable side of the response scale. Second, using 3.00 also fits the distribution of the data nicely. Survey respondents within units generally respond more favorably than not; therefore, setting the threshold lower would include a larger proportion of units resulting in a less sensitive (read: less useful) criteria.

An additional display was added to incorporate all three aspects of change as features that would quickly allow services to highlight top performing units and units that need additional support (Figure 2). A scatterplot was developed that displays four quadrants by graphing unit means of the first administration by the same unit's means at the second administration. This is displayed for one metric at a time (compared to the Venn diagram that compares three metrics at a time). Quadrants are defined by an axis placed on the scatterplot at the 3.00 mark for both the x- and y-axes. This represents a threshold of "favorability" (as previously defined). In this display, every single unit is plotted on the graph. Units marked in green and plotted in quadrant 1 (upper right quadrant) would be considered to have *consistently favorable* means on this particular climate factor. This indicates a unit had a favorable mean at both the first DEOCS administration and the second DEOCS administration. If a unit had an unfavorable mean at both the first and second administrations, they would be indicated in red and plotted in quadrant 3 (bottom left). These units are considered to have *consistently unfavorable climates*. If a unit had an unfavorable mean at the first administration, but by the second administration, the mean was favorable, then they would be indicated in blue and plotted in quadrant 2 (upper left). These units have *improving climates*. Finally, if a unit had a favorable mean at the first DEOCS administration then the mean dropped below the threshold for the second administration, they would be indicated in purple and plotted in quadrant 4 (bottom right). These units have *declining climates*.

In addition to change in favorability in these quadrants, different markers indicate whether or not the change the units experienced was large-effect change or not. Points represent changes that are not large effect, whereas up arrows indicate large positive changes and down arrows indicate large negative changes. This provides helpful information even in the *consistently favorable* quadrant, where a few units that may be trending downward with a large effect and may want to consider some preventative interventions before they cross the threshold into *declining climate*. This allows one display to communicate direction, magnitude and favorability, enabling a full picture of change.

Figure 2.
Example Unit Means at Occurrence 1 (FY15) by Occurrence 2 (FY16)



Results were presented at SAPRO's quarterly Integrated Product Team (IPT) meeting in November 2017 and each Service was provided with their respective report. ODMEO followed with a similar request for DEOCS data on Organizational Effectiveness and Equal Opportunity related climate factors. The response was overwhelmingly positive from the services and several are awaiting this methodology to use. Overall interest in this data was established within the Services and DEOMI determined that this information should be provided directly to commanders prior to providing it to the Services.

In August 2017, DEOMI released DEOCS 4.1. Based on growing interest and opportunity to begin tracking climate changes with the new survey, DEOMI initiated efforts to automate an indexing variable that formally captures DEOCS administrations, or occurrences, within the data. DEOMI and SAPRO both found value in providing commanders with change metrics in DEOCS Commander Reports. By extension, this would aid SAPRO in continuing their effort to quantify command climate change in their annual reports (i.e. providing counts of unit commanders that were informed of their declining or improving climates). Thus, DEOMI established a plan to develop and launch a commander tool.

2. Providing command climate change metrics to commanders

In 2017, SAPRO requested development of products to support commander efforts for climate enhancement over time. To support this request, DEOMI initiated two projects: (1) a video trailer teasing the release of a new commander tool to provide commanders with climate change information and (2) an automated brief report that can be appended to the DEOCS commander report upon completion of a second DEOCS within a unit.

2.1 Project 1: Commander Comparison video trailer

This section discusses the first command climate change project intended for the unit commander. The overall objective was to introduce commanders to the concept of command climate change.

Project 1: Actions	Status
1) Build a video to introduce commanders to the concept of command climate change and get them engaged as change agents.	Complete July 2017

DEOMI developed a video product to post on the DEOCS Assessment to Solutions website. The goal was to get commanders to begin thinking about climate management as an ongoing process and the climate survey as a snapshot that can capture commander efforts to impact change throughout the year, between assessments.

This video incorporated ideas for the commander to consider in their management of command climate. In particular the video incorporated (1) explanation of the Assessment to Solutions process, (2) discussion about the importance of monitoring progress between DEOCS results within the climate management process, and (3) a brief overview of the new DEOCS commander comparison tool[1] for identifying and monitoring progress toward climate goals.

The DEOCS Commander Comparison Tool Video Trailer was completed and posted to Assessment to Solutions website in October 2017. Upon posting, DEOMI received immediate response and engagement from the field. Due to organizational changes in responsibility for this work effort to OPA and pending approvals, the video was removed from the Assessment to Solutions website awaiting further development of the commander comparison tool. The completed video may be revisited to ensure relevance to the continued effort before posting to Assessment to Solutions.

2.2 Project 2: Designing the commander comparison tool

This section discusses the second command climate change project intended for the unit commander. The overall objective of this phase was to provide commanders with change metrics upon completion of their second administration of the DEOCS within a unit.

Project 2: Actions	Status
1) Design a commander comparison tool to be appended to DEOCS report for commanders upon completion of second DEOCS within a unit.	Project terminated, 24 September 2019
2) Automate (program) the commander comparison tool.	Project terminated, 24 September 2019

DEOMI initiated development of a tool that commanders can use to better understand progress toward command climate goals. This is part of a larger initiative to assist commanders in understanding that command climate management is an ongoing process, rather than a once a year effort.

In order to develop this tool, DEOMI established a project plan with SAPRO. On 1 October, 2018, this project plan was provided to OPA when they replaced DEOMI as the responsible party for the DEOCS commander tool. The project involved (1) finalizing quality checks of the automated variable that indexes administration of the DEOCS under a single commander with the same unit, (2) developing a commander comparison tool that would be appended to the

[1] The 'command comparison tool" has not been officially named; within this document, it will be referred to as commander comparison tool.

existing DEOCS report, (3) programming an area to the administrator survey request page to confirm the previous DEOCS administration for comparison, and (4) initiating programming of report and quality checking.

DEOMI completed the quality check of the automated indexing variable. While the indexing variable has known limitations, additional steps may be taken to add verification from the survey administrator upon requesting the DEOCS. At the time of the change in responsibility to OPA, DEOMI was working on developing the commander comparison tool. In particular, DEOMI completed an initial visual display of the report and established potential statistics that are appropriate for small samples. Within this phase, business rules need to be established, boiler plate text needs to be developed and programming still needs to occur before commanders can receive their results.

Prior to OPA inheriting responsibility for this project, DEOMI conceptualized the commander comparison tool to include four main components. First the demographic results and response rates were displayed along with instruction to pay close attention to response rates and changes in response rates as a boundary condition for the utility of the remaining report. Second, an annotated scatterplot would be displayed (Figure 3) to compare unit favorability scores for each administration. This display contained unit favorabilities for each factor and administration as well as thresholds for different levels of favorability and arrows to indicate the effect size. The arrows are a quick way for commanders to determine if the change is practically important. Third, a table of DEOCS content areas at each administration by subgroup was presented. This table showed the favorability code (consistent with the typical DEOCS commander report – red, yellow, blue, and green), as well as an arrow indicating the direction and importance of the change (Figure 4). Dashes replace arrows in comparisons that did not cross the threshold for practical importance (using effect size). A final table provided ranking of the three most favorable and least favorable changes in content areas by subgroup (Figure 5).

Figure 3.
Commander Comparison Tool Scatterplot Concept

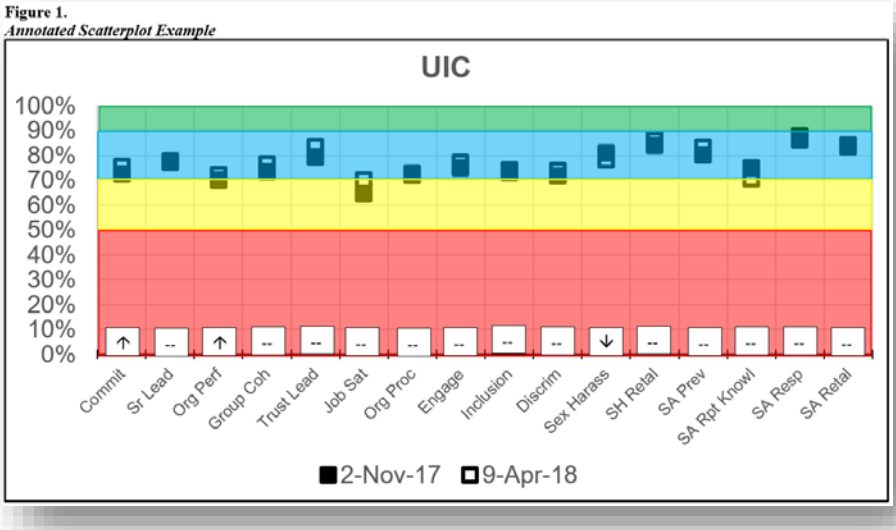


Figure 4.
Commander Comparison Tool Content area by Subgroup Concept

Table 2.
DEOCS Content Areas at DEOCS 1 (DATE) and DEOCS 2 (DATE) by Subgroup

	Women			Men			Junior Enlisted (E1 – E3)			Senior Enlisted (E7 – E9)			Junior Officer (O1 – O3)			Senior Officer (O4 and above)			Junior Federal Civilian (GS1 – 12			Senior Federal Civilian (GS13 – SES)		
	1	2	Δ	1	2	Δ	1	2	Δ	1	2	Δ	1	2	Δ	1	2	Δ	1	2	Δ	1	2	Δ
N	15	17		14	15		11	12		18	13		25	33		5	5		0	0		2	1	
Commitment			–			–			–			↓			–			–						
Sr. Leadership			–			–			–			–			–			↓						
Org Performance			–			–			–			↓			–			–						
Group Cohesion			–			–			–			↓			–			↑						
Trust in Leadership			–			–			–			–			–			–						
Job Satisfaction			–			–			↑			–			–			–						
Org Processes			–			–			–			↓			–			–						
Engagement			↓			–			–			–			–			–						
Inclusion at Work			↓			–			–			↓			↓			↑						
Discrimination			–			–			–			–			–			↑						
Sexual Harassment			–			–			–			↓			–			↓						
SH Retaliation			↑			–			–			↓			↓			–						
SAPR			–			–			–			↑			–			–						
SAPR Knowledge			↓			–			↓			↑			↑			↑						
SAPR Response			–			–			–			–			↓			–						
SAPR Retaliation			–			–			–			↓			↓			↑						

Figure 5.
Commander Comparison Tool Top 3 / Bottom 3 Concept

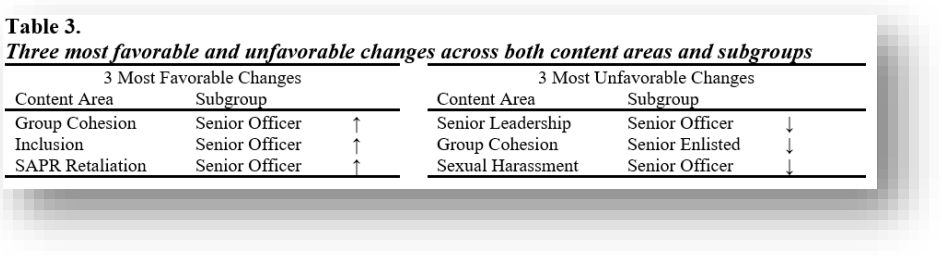


Table 3.
Three most favorable and unfavorable changes across both content areas and subgroups

3 Most Favorable Changes			3 Most Unfavorable Changes		
Content Area	Subgroup		Content Area	Subgroup	
Group Cohesion	Senior Officer	↑	Senior Leadership	Senior Officer	↓
Inclusion	Senior Officer	↑	Group Cohesion	Senior Enlisted	↓
SAPR Retaliation	Senior Officer	↑	Sexual Harassment	Senior Officer	↓

During the transition of the DEOCS program from DEOMI to OPA (October 2018), the current state of the work effort and specifically, the visuals for the commander comparison tool were provided to OPA for review/approval in January 2019. On 24 September, 2019, OPA made the decision to terminate efforts toward this project.

3. Conclusion

Managing command climate is a process that involves assessing organizational areas, interpreting results and developing solutions, and, ultimately, executing and evaluating progress toward improvement. SAPRO and DEOMI acknowledge the benefit of the DEOCS for establishing baseline data of unit climate and determining the impact of the commander's leadership on command climate between organizational assessments. As important as the current state of organization climate is examining the change in command climate. To fully realize this benefit, SAPRO and DEOMI collaborated to develop an understanding of change data and utility in its applications to the field at multiple levels. Specific progress was made by identifying best methods for analyzing and reporting this data, vetting its utility to the services, and initiating a product for the commander use. This product is valuable for a commander for early detection and prevention of problematic behaviors. DEOMI established a strong foundation in this domain by completing the necessary research that will enable the field's multiple constituents to benefit from this rich data that provides another perspective of command climate.