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JTF-CS' tasking and roles and responsibilities for CBRN and DSCA

HOW TO SUCCESSFULLY ACHIEVE THE TRANSITION TO DSCA ALL HAZARDS, WHILE MAINTAINING CBRN NO-FAIL MISSION AND READINESS.

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Abstract

Joint Task Force Civil Support (JTF-CS) is the nation's only standing JTF to respond to chemical, biological, radiological, and nuclear (CBRN) events. JTF-CS was established in 1999 as a subordinate command to United States Northern Command (NORTHCOM). In 2020, NORTHCOM expanded JTF-CS' mission set from an exclusive focus on CRBN events to include all hazards Defense Support to Civil Authorities (DSCA) response operations in a future homeland defense operating environment. In response, JTF-CS revised their mission statement, reorganized their staff ad-hoc, and developed a new organizational employment model—the Headquarters Echelon Concept (HEC). The new mission statement was approved by NORTHCOM in 2022. This report summarizes our analysis of JTF-CS' tasking and roles and responsibilities for CBRN and DSCA. We examine how the expansion of DSCA all hazards as an additional mission set has impacted JTF-CS' missions, functions, and tasks (MFT), and staffing requirements. We also review the HEC organizational structure and how the command transformation aligns with the new MFT to optimize staff structure and efficiencies. We conclude with an overall assessment of the HEC and how the command can successfully achieve the transition to DSCA all hazards, while maintaining its CBRN no-fail mission and readiness.

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Cover image: JTF-CS.

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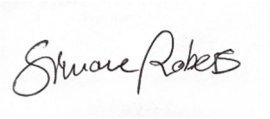

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Executive Summary

Joint Task Force Civil Support (JTF-CS) is the nation's only standing JTF to respond to chemical, biological, radiological, and nuclear (CBRN) events. JTF-CS was established in 1999 as a subordinate command to United States Northern Command (NORTHCOM). In 2020, NORTHCOM expanded JTF-CS' mission set from an exclusive focus on CRBN events to include all hazards Defense Support to Civil Authorities (DSCA) response operations in a future homeland defense operating environment. In response, JTF-CS revised their mission statement, reorganized their staff ad-hoc, and developed a new organizational employment model—the Headquarters Echelon Concept (HEC). JTF-CS also used real-world operations during COVID-19 to test and refine its organizational constructs.

The new mission statement was approved by NORTHCOM in 2022. However, JTF-CS' new structure, as of writing, has not been independently evaluated to determine its feasibility, acceptability, suitability, and completeness for the execution of the new and expanded mission set. As a result, JTF-CS asked CNA to provide an external, independent review of the JTF-CS–developed organizational structure and an overview of relevant constraints and restraints, as well as evaluate how well the new organizational structure is aligned to execute assigned roles and responsibilities (RRs), and mission, functions, and tasks (MFT).

This report summarizes our analysis of JTF-CS' tasking and roles and responsibilities for CBRN and DSCA. We examine how the expansion of DSCA all hazards as an additional mission set has impacted JTF-CS' MFT and staffing requirements. We also review the HEC organizational structure and how the command transformation aligns with the new MFT to optimize staff structure and efficiencies. We conclude with an overall assessment of the HEC and how the command can successfully achieve the transition to DSCA all hazards, while maintaining its CBRN no-fail mission and readiness.

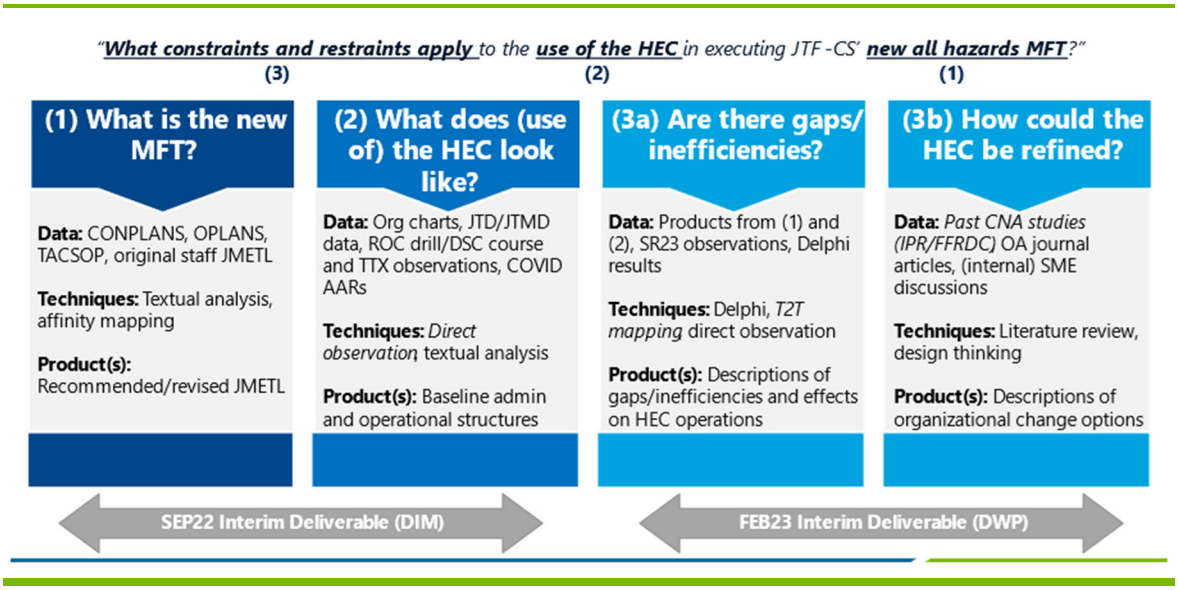
Study approach

As presented in Figure 1, we executed this study in two phases. In phase 1, executed between June and September 2022, we examined the new MFT and the use of the HEC.[1] In phase 2 of

[1] We provided an in-person command briefing and an interim report, the content of which will be discussed later in this compiled report.

our study, we built on phase 1 analysis findings and addressed gaps and inefficiencies and refinements or improvements to the HEC construct.[2]

Figure 1. Chart using CNA primary green for border lines



Source: CNA.

[a] Terms: Concept of operations plans (CONPLANS), operations plans (OPLANS), tactical standard operating procedures (TACSOP), Joint Mission Essential Task List (JMETL), Joint Table of Distribution (JTD), Joint Table of Mobilization Distribution (JTMD), Rehearsal of Concept (ROC), Dual Status Commander (DSC), tabletop exercises (TTX), after action reports (AARs), Sudden response (SR), troop-to-task (T2T), Institute for Public Research (IPR), Federally Funded Research and Development Center (FFRDC), organizational analysis (OA), subject matter expert (SME).

The primary research questions guiding the study were: "What does the new MFT for JTF-CS look like?" "Does the HEC allow JTF-CS to efficiently fulfill its MFT? If not, what organizational changes can be made to address any gaps or inefficiencies?" To answer these questions, we adopted a four-step analytic approach:

1. Review mission statement, TACSOP, concept of operations plans (CONPLANS), and operations plans (OPLANS) to develop a current and complete MFT and Joint Mission Essential Task List (JMETL) for JTF-CS.

[2] Again, we provided an in-person command briefing and a draft working paper in February of 2022.

2. Review current org charts, manpower data, exercise after-action reports (AARs), and exercise observations to baseline both the HEC and the underlying organizational structure (i.e., staff sections) available to execute the MFT and JMETL laid out in (1).
3. Using a Delphi data call and exercise AARs/observations, match the JMETL from (1) to the available structure and HEC elements from (2) and identify any gaps and/or inefficiencies.
4. Identify and evaluate additional or alternative manning and/or structural options for addressing the gaps/inefficiencies identified in (3), given command-defined constraints and restraints.

In each step, we leveraged a combination of command and higher headquarters (HHQ) generated products, Department of Defense (DOD) and Department of Homeland Security (DHS) guidance and plans, subject matter expert (SME) discussions and responses to Delphi[3] questions, and exercise products and observations to inform our work. Wherever possible, we sought to overlay our textual and thematic analysis of these source materials to mitigate subjectivity and bias and better ensure completeness and consensus in our findings.

Study findings

JTF-CS is a two-star command with a T/O of 150, at roughly 135 manned. JTF-CS plans and executes CBRN and DSCA response to save lives and provide temporary critical support to enable recovery. The command prepares to conduct all-hazards domestic response (e.g., hurricane, earthquake, pandemic) and habitually trains and exercises with the Federal Emergency Management Agency (FEMA), interagency partners, the National Guard, and other state and local partners. JTF-CS's mission set is summarized in their documentation as follows:

"On order, JTF-CS conducts CBRN response and All Hazards DSCA operations in support of the lead federal agency in order to save lives, mitigate human suffering and prevent further injury."

Roles and responsibilities

To baseline the roles and responsibilities of Joint Task Force-Civil Support (JTF-CS), we began by reviewing plans and orders.[4] Our analysis under phase 1 of the study concluded that, except

[3] See Appendix C for more detail.

[4] JTF-CS TACSOP, Branch Plan 3510 to CONPLAN 3500-21, OPLAN 3500-19 (CBRN Response), Branch Plan 3600 to OPLAN 3500 (NCR CBRN + All-Hazards Response), Caribbean All-Hazards Plan: Annex J (Earthquake/Tsunami Response), Branch Plan 3512 to OPLAN 3500 (Earthquake Response), Branch Plan 3512 to CONPLAN 3500-21 (Earthquake Response), USNORTHCOM CONPLAN 3500-14: Annex C, Appendix 1, Tab H (Hurricane Response). [1-8]

for the JTF-CS TACSOP and Branch Plan 3510, most of the plans and orders were mission agnostic. That is, each described the general roles and responsibilities of JTF-CS (among others) in the context of a specific event. The general structure of the resultant mission statements was something akin to:

> *On order, conduct **[CBRN response or DSCA]** operations in support of the **[Lead Federal Agency (LFA) or Primary Actor (PA)]** in response to **[mission name (e.g., "an earthquake")]** within the domestic portion of the USNORTHCOM AOR to save lives, prevent further injury, and provide temporary critical support to enable community recovery.*

This is consistent with the National Response Framework (NRF) definition of a "response" mission, which include "actions to save lives, stabilize community lifelines, protect property and the environment, and meet basic human needs after an incident has occurred." [2]

We similarly found that the function of JTF-CS was likewise largely the same across source documents. Specifically, JTF-CS was repeatedly called on to "provide command and control (C2) for Department of Defense (DOD) Chemical, Biological, Radiological and Nuclear (CBRN) response forces in the event of CBRN event or all-hazards defense support of civil authorities (DSCA) operations.[9]

Overall, JTF-CS is responsible for a total of 34 operational-level tasks (OPs), either in the course of its day-to-day operations or in the course of CBRN or DSCA response operations. In fact, nearly all of the OPs associated with CBRN and DSCA are the same as the OPs required of JTF-CS during steady-state, non-response operations. Exceptions include four OPs specific to CBRN operations and two OPs specific to certain types of all-hazards DSCA operations. Otherwise, we found that JTF-CS is consistently responsible for 19 tasks related to logistics/personnel support and command and control. We also found that the J4 and J3 staff sections were explicitly associated with the greatest number of OPs overall (18 and 16, respectively). In contrast, the J1 and J6 were only sparingly mentioned (3 and 8, respectively).

In sum, we found that JTF-CS has roles and responsibilities aligned with CBRN and all-hazards DSCA missions, and in particular with earthquake and hurricane response operations. Their **common function across these missions is to provide C2 of DOD response forces**. Despite varying descriptions of the tasks required to fulfill this function, a **common set of 19 OPs does exist across general (i.e., non-response), CBRN, and all-hazards operations and there are relatively few tasks specific to a singular type of event**. This suggests that **adding the all-hazards mission set did not dramatically increase the number or diversity of JTF-CS' tasks. Instead, it increased likelihood that JTF-CS would be required to execute these tasks across multiple response operations with consecutive, overlapping, or event concurrent timelines.** Thus, while the vast majority of the requirements we uncovered are ones that JTF-CS must be prepared to satisfy only in the event of a CBRN or DSCA incident, the

added frequency of DSCA incident response could lead to greater confluence between "enduring" and "on-order" roles and responsibilities.

Organizational structure

We baselined the organizational structure of JTF-CS by reviewing the following source materials: JTF-CS TACSOP, JTF-CS Master Organizational Chart, JTF-CS JTD and JTMD Monthly Rosters (for the last 2 years or Jun 2020-Jul 2022), JTF-CS C2 Concept and MA _MATO Mission Processing Brief, JTF-CS Org Review Brief, 2022 ROC Drill Slides (Turns 1-3B), Vibrant Response 2022 (VR22) Final Exercise Report and Enclosures. We took note of both administrative and organizational structures delineated in these documents and summarize our findings below.

JTF-CS consists of the command group (i.e., Commander, Chaplain, SEL, etc.), special staff (e.g., SJA, PAO, SG), and six Napoleonic staff sections. According to its JTD, JTF-CS **is authorized 156 billets for steady-state operations**.[5] An additional 36 billets are authorized in the JTMD for activation and use in the event of crisis or contingency operations. Of course, not all these billets are filled at any given time. In fact, according to JTF-CS staff estimates, **typical fill for JTF-CS steady-state billets is 80 percent**.[6] Calculations on both organizational charts and the JTD suggest that the J1, J4, and SG staff sections have some of the highest fill relative to others in the organization. In contrast, the J3 and J5 staff sections, despite having extensive roles and responsibilities (RRs), are often closer to 80 percent using org chart estimates and at 76 percent and 71 percent, respectively, using the JTD.

Under the HEC construct, if dictated by operational requirements, the command would retain the capability to split into **forward and rear elements to accomplish its missions, functions, and tasks, as explained in the TACSOP**. In sum, based on our reading of all available documentation, modifications to forward elements—not just which are employed or how, but their actual composition and capabilities—are the norm, making it difficult to ascertain whether the baseline echelon concept is, in fact, sufficient for all hurricane, pandemic response, and no-notice DSCA incidents.

We found the rear elements of JTF-CS's echelon concept to be far less defined than the forward elements, which were the focus of most of the source documentation we reviewed. Only two source documents discussed the rear elements in any detail, and the only point of consensus across them was that the MCP should consist of several boards, cells, centers, and working groups (BC2WGs). Yet, which BC2WGs, exactly, should be contained within the MCP

[5] By "steady-state billets," we mean those included in the JTD vice the JTMD.

[6] JTMD billets, according to our calculations, have a much lower fill rate of roughly 56 percent.

as well as the composition of said BC2WGs was either unclear or largely inconsistent across these two documents.

Our interim report provides an in-depth analysis of the MFT/JMETL and organizational construct. Appendix E also provides supplemental findings beyond what is included in the summary or main body of this report. Below we present key analysis findings from Phase 2 of study execution. Again, in this section, we provide a summary overview of key highlights.

Unclear task ownership across HEC elements

Task ownership across HEC elements is unclear. **We identified several tasks for which there is not a single "lead" operational element and/or where the "lead" element(s) are not consistently identified across source materials.** We note several inefficiencies related to this. First, **overlapping task ownership within the MCP could result in multiple BC2WGs completing the same or very similar tasks in parallel**. Second, in the absence of unambiguously assigned responsibilities, SME discussions and Delphi commentary suggest that tasks default to the JOC, even if they are "doctrinally" owned by another BC2WG. This kind of **mission creep within the JOC may result in reduced effectiveness** (i.e., since the best-suited personnel for the tasks may or may not reside in the JOC) **and/or reduced efficiency** (e.g., as JOC personnel struggle to keep pace with excess tasking). Third, in some cases task ownership appears to be tied more to specific personnel (e.g., J4, commander) than their operational location and/or configuration. Such **overly individualized task ownership could result in inefficiencies as information is lost and/or decisions delayed by transitions in and out of different operational configurations**. Finally, we noted several instances where exercise observations and/or Delphi responses indicated that forward elements (e.g., IST-S, FCE) should be the lead for an OP, while more formal source documents indicated rear element (i.e., MCP) ownership. The **absence of formally codified guidance and/or consistently practiced processes for transitioning these tasks from the MCP to forward elements, once established, risks information being lost and/or decisions being delayed as informal transitions take place**.

MCP (may) not (always be) right sized

Most of the OPs overwhelmingly rely on the MCP—including the JOC and other BC2WGs. The ISTs, in contrast, appear to act as extensions of the MCP, providing real-time situational awareness (SA), overseeing key operations, and/or coordinating with critical partners. The **MCP retains most JTF-CS personnel in steady-state, limited dispersion, and/or duration conditions.** However, fielding additional ISTs could disrupt this relative sizing. For example, surge or sustained (90+ days) operations could require additional MCP personnel to staff IST rotations. Alternatively, greater geographic dispersal could require greater numbers of ISTs or

less formal liaison officers (LNOs), to integrate into federal and state response structures, both of which would draw from the MCP personnel pool. In either case, a reduction in the number of MCP personnel could affect the MCPs ability to complete both its on-order and enduring tasks. We find the current manning of the MCP to be short and not sufficient to support 24-hour operations of the MCP and Forward Elements.

Relative section sizes do not reflect task loads

Our analysis identified an **uneven distribution of tasks across JTF-CS staff sections**, with the J3 and J4 responsible for more than double the tasks of most other staff sections. Moreover, the J3 is the unequivocal "lead" staff section for three overarching OPs, while all other staff sections "lead" one or no OPs. Based on this task distribution, we would expect the J3 to be the largest staff section with the best fit/fill. Yet, the J3—while the largest staff section by size—has the second-lowest fill rate (tied with the J1). And while the J3 is authorized to receive the second largest number of JTMD augments (after the J6), at 53% average fill, they effectively receive fewer than three additional personnel, less than both the J6 and J4. Similarly, the J2 is both undersized and underfilled when compared to other staff sections (J1) with fewer tasks but more personnel (both authorized and filled). These disparities suggest that **available resources (e.g., billets, time/capitol spent filling billets and/or civilian positions) may not be spread efficiently across the command. Uneven resource distribution relative to task loading could lead to task saturation and/or burnout, making it challenging for affected staff sections to satisfy all their responsibilities** (i.e., could create gaps).

Critical tasks not (appropriately) assigned

We found that **not all CBRN-related tasks are clearly assigned to JTF-CS operational elements and/or staff sections.** For example, OP 1.6 (see Appendix E) lacks a "lead" staff section specified in either the JMETL or other source documents.[7] In addition, OP 7.9 lacks any consensus-based "lead" staff section and/or operational element; that is, different source materials identify different leads for this task (e.g., staff generated JMETL and exercise observations suggest J3 as the lead; Delphi respondents suggest CMD, J6, and MCP). **Absent clearly assigned roles and responsibilities for these OPs, JTF-CS risks failing its "no fail" mission of CBRN response.**

[7] Limited exercise observations suggest that the J4 may informally fill this role, but this is not captured in any other source documentation. Without formally assigned ownership of this task, JTF-CS cannot ensure patient evacuation resources are available and/or administrative requirements are met (e.g., Patient Evacuation Coordination Center (PECC) concept of employment (CONEMP) written and maintained). Further, SMEs suggest that the absence of a clear "point person" (or section) for this task could complicate necessary coordination with US Transportation Command (TRANSCOM), the Air Force, and other critical enablers.

We similarly found that several enduring tasks have multiple task owners. For example, according to source documents, the J2, J3, J4, and J5 share responsibility for the execution of OP 1.3. Adding complexity, we also found variation across source materials regarding the exact combination of staff sections responsible for certain OPs. This **lack of clarity regarding critical task assignments could result in gaps (i.e., incomplete tasks)** if associated roles and responsibilities are unknown to the respective staff sections. Likewise, insufficient deconfliction of shared roles and responsibilities, even if clearly assigned and acknowledged by staff sections, could reduce JTF-CS' ability to efficiently complete these tasks.

Lastly, **two enduring tasks are assigned exclusively to forward elements of the HEC**.[8] Specifically, according to source documents and exercise observations, OP 4.1 is assigned to IST-S and OP 5.8 is assigned to the FCE (PAO). However, since these are enduring tasks, they require a task owner whether response operations—and, thus, forward element employment—are ongoing are not. Without a designated MCP "owner" for these tasks in the event HEC forward elements are not employed, JTF-CS cannot ensure continuity in their execution.

Critical task owners lack sufficient manning

Staff sections responding to the Delphi generally disagreed with the premise that "The number of billets allocated…would be sufficient to sustain HQ operations and complete all assigned tasks as part of JTF-CS' HQ echelon concept." The extent of disagreement (i.e., from "slightly disagree" to "disagree" to "strongly disagree") increased commensurate with the duration of the event, suggesting that **sustaining any kind of operations beyond 30 days would be problematic under the HEC model**. Similarly, there appeared to be **greater confidence in the staff's ability to "make it work" for a single response operation than for any kind of concurrent or overlapping events**. Given the fact that all of the OPs in Table 3 are critical (according to our analysis in Table 6, this means that critical task owners do not believe they have sufficient manning to complete their assigned tasks in the event of prolonged and/or contemporaneous operations. One consequence of this common across JTF-CS staff sections is reduced task efficiency and effectiveness upon commencement of response operations that worsens as time goes on. In other words, **to cope with the stresses of sustained and/or concurrent operations, the staff either curtails or suspends work on a variety of more "administrative" tasks, which then accrete over time and increase risk to other aspects of JTF-CS' mission**.

[8] In addition, based on exercise observations, one multi-mission task (OP 1.2) appears to be conducted exclusively by forward HEC elements, despite source document descriptions of combined forward (IST-S) and rear (MCP-O) execution.

According to Delphi respondents, correcting this situation would require, at a minimum, that all JTD billets be 100% filled. Relatedly, Delphi responses and exercise materials suggested that augmentation above/beyond the JTD would likely be required to sustain HEC operations and/or to execute concurrent operations. Yet, on average, **no staff section meets the 100% threshold for JTF fill and JTMD billets are likewise not consistently filled to high levels.** Delphi respondents attributed these persistent fill issues to a number of causal factors, and we observed and discussed several others during command exercises, including augments belong to a separate component and sub-command of NORTHCOM; funding and scheduling of augments often requires planning outside of operational windows (6+ months); and prioritization can vary by mission set. In the absence of changes designed to address these underlying issues and improve relationships with augmenting and enabling organizations, critical task owners will likely continue to experience substantial stress during prolonged and/or coincidental response operations and introduce undetermined risk to JTF-CS' overall mission set as they struggle to complete their tasking.

Change options

Our analysis identified gaps and inefficiencies challenging the organizational structure of JTF-CS. While we deem the HEC feasible and acceptable overall, the gaps and inefficiencies must be addressed to (1) successfully achieve full transition to DSCA all hazards and be able to (over the long-term) support the DSCA mission, and (2) maintain the CBRN no-fail mission. To overcome the gaps and alleviate the inefficiencies we identified in our analysis; we propose a set of change options for consideration. Table 1 presents a number of organizational change options that—based on past CNA and industry research—have the potential to mitigate if not eliminate the challenges that JTF-CS faces. In each row we present a change option that is mapped against the primary challenges (shown in the columns) the change option would address if implemented.

Table 1. Mapping Options to Gaps/Inefficiencies

Change Option	Unclear task ownership	MCP not (always) right sized	Section sizes ≠ task loads	Critical tasks not assigned	Task owners lack sufficient manning
1. Develop/apply task assignment criteria				X	
2. Employ a responsibility assignment matrix (e.g., RACI)	X		X	X	
3. Enforce *de jure* responsibilities	X			X	
4. Update written guidance to reflect *de facto* responsibilities	X			X	
5. Identify "portable" tasks and develop associated processes		X		X	
6. Detailed COOP planning	X	X			
7. OT3 gaming	X	X	X	X	X
8. Capture actual demand for manpower (e.g., time-use analysis)		X	X		X
9. Compare/contrast JTF-CS with corollary organizations		X	X		X

Source: CNA.

The feasibility and ease of implementation of these options is critical to consider. Thus, we vetted the change options with the command to identify: (1) which change options are within the control of JTF-CS to implement on its own (without involvement, beyond situational awareness, of HHQ); (2) how hard the change option is to implement (required resources, chains of approval etc.), and (3) whether support from HHQ is required to implement the change option. In Table 2, we summarize the output of the feasibility mapping for the change options. The rightest column identifies specific actions to be taken by JTF-CS.

Table 2. Feasibility and Ease of Implementation for Change Options

Change Option	Within JTF-CS control[a]	Ease of implementation[b]	Requires HHQ support	JTF-CS required action
1. Develop/apply task assignment criteria	F	L	NO	(1) update functional tasks done in 2019 manpower study (2) reorganize tasks functionally (critical, non-critical, exercise only etc.) (3) develop and enforce RACI matrix
2. Employ a responsibility assignment matrix (e.g., RACI)	F	M	NO	
3. Enforce *de jure* responsibilities	F	L	NO	(1) review/update TACSOP, CONPLANS, and OPLANS (2) disseminate and enforce the written roles and responsibilities
4. Update written guidance to reflect *de facto* responsibilities	F	L	NO	
5. Identify "portable" tasks and develop associated processes	F	M	NO	(1) identify tasks that can be performed at any location
6. Detailed COOP planning	F	L	NO	(1) identify the minimum levels of equipment and manpower necessary for each JMETL task
7. OT3 gaming	N	H	YES ($)	(1) request financial support for organizational troop-to-task (OT3) wargame
8. Capture actual demand for manpower (e.g., time-use analysis)	N	H	YES ($)	(1) request financial support for in-depth manpower and time-use analysis
9. Compare/contrast JTF-CS with corollary organizations	P	M	YES ($)	(1) request financial and top-cover support to coordinate with other JTFs or CIV units (JTF-N, JTF-NCR, FEMA, NGB, etc.)

Source: CNA.
[a] F = within full control of JTF-CS; N = not within control of JTF-CS; P = Partially within control of JTF-CS but collaboration or support from HHQ is needed.

[b] L = low level of effort to implement; M = medium level of effort to implement (requires more resources/time or some form of chain of approval); H = high level of effort to implement.

In sum, at minimum, we recommend that JTF-CS implement change options 1-5 (rows 1-5). Change options 1-5 are related; that is, they focus on roles and responsibilities and task assignments. Implementing these change options will clearly delineate between roles and responsibilities for all OPs by element (staff section) to ensure clear task ownership, balance task loads among the sections, and ensure all critical tasks are assignment. However, ideally, JTF-CS can implement all change options in order to determine the appropriate sizing of sections and allow for tailoring of HEC elements to ensure each section within JTF-CS has the manpower necessary to efficiently execute its assigned tasking. To do so, we recommend a structured organizational troop-to-tasking (OT3) game. OT3 will allow JTF-CS to stress-test staffing configurations within available resources to identify the optimal staffing structure to support the new mission set and ensure execution of all OPs to successfully transition to DSCA, while maintaining its no-fail CBRN readiness.

Conclusion

JTF-CS has adapted to its expanded mission set via an ad-hoc reorganization and the development of the HEC. The new structure and employment model generally supports the execution of JTF-CS's vast MFT. However, sustained operations over an extended period, or the execution of multiple operations concurrently (potentially spread over several locations) will be problematic for JTF-CS as laid out in our report. Our analysis identified gaps and inefficiencies that impact JTF-CS's surge- and long-term capacity to sustain operations. The change options we have developed provide a foundation for the command to eliminate these gaps and inefficiencies. Feasibility mapping with the command allowed us to identify the change options within sole control of JTF-CS versus change options that reside outside of their control and will require support or action external to JTF-CS. For example, while JTF-CS can develop and employ a responsibility assignment matrix (e.g., RACI), JTF-CS cannot, without support from HHQ, fill critical billet gaps (i.e., aviation planner). NORTHCOM's future operating environment in the context of homeland defense requires JTF-CS to not only be flexible and immediately responsive/highly adaptable but also to be able to sustain operations over the long-term and provide surge capacity for coast-to-coast DSCA response operations and associated requirements. We recommend JTF-CS and HHQ implement change options as described in Table 2.

Contents

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The purpose of this paper

The remainder of this paper is focused on the HEC in particular and serves to document more specific findings from steps (3) and (4) of our analytic approach. We briefly recap an overview of the study, our analytic approach, considerations and assumptions, and conclude with phase 1 highlights. For our deep-dive into phase 2 of the study, we begin with a discussion of notable gaps and inefficiencies that arose when mapping JTF-CS' JMETL to its available organizational structures. We then identify several organizational options for addressing the types of gaps and inefficiencies we uncovered based on past CNA and industry studies of organizations facing similar challenges. We conclude with identifying which of the presented change options can be implemented by JTF-CS versus those that require HHQ support.

Study Overview

In 1999, US Northern Command (NORTHCOM) established Joint Task Force–Civil Support (JTF-CS) to respond to chemical, biological, radiological, and nuclear (CBRN) events in the NORTHCOM area of responsibility (AOR). At the time, JTF-CS had a limited mission set consisting primarily of Improvised Nuclear Device (IND) response operations and planning for consequence management following a nuclear detonation. However, over the past several years, NORTHCOM has expanded the JTF-CS mission set, formally adding support to Homeland Defense and all-hazards Defense to Civil Authorities (DSCA) operations (i.e., hurricane, earthquake, wildfire, and bio-medical responses, including COVID-19) in 2020.

In response to this expansion, JTF-CS developed a new mission statement that NORTHCOM approved in March 2022. This new mission statement formally opens JTF-CS' aperture to an all-hazards mission set versus a focus on only nuclear response operations. To accommodate this broader mission set absent commensurate changes to their manpower, JTF-CS developed several alternative headquarters organizational concepts. It then tested and refined these concepts during real-world COVID-19 operations and began internally realigning roles and responsibilities to better accommodate the new mission set and associated operating requirements. From these ad-hoc changes emerged the Headquarters Echelon Concept (HEC), the new standard for JTF-CS response operations.

To date, the HEC has not been independently evaluated to determine whether it enables the execution of all of JTF-CS' new missions, functions, and tasks (MFT). JTF-CS therefore asked CNA to provide an external, independent examination of the HEC focused on identifying

relevant constraints and restraints and evaluating how well the new concept is aligned to their MFT. Given resource limitations, JTF-CS asked for high-level analysis and recommendations to inform the command's manning document, organizational structure, and tactical standard operating procedures (TACSOP).

Analytic Approach

The primary research questions guiding the study were: "What does the new MFT for JTF-CS look like?" "Does the HEC allow JTF-CS to efficiently fulfill its MFT? If not, what organizational changes can be made to address any gaps or inefficiencies?" To answer these questions, we adopted a four-step analytic approach:

(1) Review mission statement, TACSOP, concept of operations plans (CONPLANS), and operations plans (OPLANS) to develop a current and complete MFT and Joint Mission Essential Task List (JMETL) for JTF-CS.

(2) Review current org charts, manpower data, exercise after-action reports (AARs), and exercise observations to baseline both the HEC and the underlying organizational structure (i.e., staff sections) available to execute the MFT and JMETL laid out in (1).

(3) Using a Delphi data call and exercise AARs/observations, match the JMETL from (1) to the available structure and HEC elements from (2) and identify any gaps and/or inefficiencies.

(4) Identify and evaluate additional or alternative manning and/or structural options for addressing the gaps/inefficiencies identified in (3), given command-defined constraints and restraints.

In each step, we leveraged a combination of command and higher headquarters (HHQ) generated products, Department of Defense (DOD) and Department of Homeland Security (DHS) guidance and plans, subject matter expert (SME) discussions and responses to Delphi questions (see Appendix C for more detail on the Delphi), and exercise products and observations to inform our work. Wherever possible, we sought to overlay our textual and thematic analysis of these source materials to mitigate subjectivity and bias and better ensure completeness and consensus in our findings.

Considerations and assumptions

Due to limited resources for this effort, we discussed the following considerations and assumptions with the sponsor.

- Manning Update. At this time, it is unlikely that JTF-CS will receive additional manning/billets for military or civilian positions. JTF-CS is a command that relies heavily on civilians (50%) and has experienced increased attrition of the civilian workforce.
- COMREL. JTF-CS, under administrative control of NORTHCOM, will continue to be under operational control of Army North (ARNORTH).
- CBRN continues to be JTF-CS's no fail mission and the current headquarters employment model (the HEC concept) will be retained.
- Given the conditions under which the HEC is meant to be employed and the source materials describing its—and, by extension, JTF-CS'—MFT, we focused our baseline of JTF-CS' MFT and JMETL on operational activities vice activities related to more administrative HQ functioning (e.g., facilities maintenance, computing support). This limited our ability to describe, in detail, which administrative tasks are most affected by current organizational gaps/inefficiencies. Instead, we highlighted the *types* of administrative activities that could be most affected.
- Given limited time and resources, we restricted our analysis of JTF-CS' tasks to broad, operational level task *types* (i.e., OP X.X) vice more discrete tasks. Similarly, we constrained our exploration of JTF-CS' organizational structure to whole operational elements and staff sections, vice individual, billet-level analysis.[9] Consequently, we do not draw conclusions regarding whether specific billets are gapped or inefficiently used much as we do not identify tactical-level tasks that are not well served by the HEC.
- Again, given the limited time and resources available to the study team, we chose to focus our analysis on gaps and/or inefficiencies *within* JTF-CS' organizational structure and processes vice *seams* between JTF-CS and other, external organizations. However, we note that this scoping overlooks an important potential outcome of the addition of the all-hazards mission set, namely an increase in the range of partnerships or relationships that JTF-CS is expected to maintain or work through during an incident as well as localized variations in partner requirements.

Appendix A discusses areas for further research that could help to either mitigate or else eliminate these caveats should JTF-CS desire to do so in future.

[9] An exception to this is our use of billet-level data, provided by the JTF-CS J1, to calculate average numbers of authorized Joint Table of Distribution (JTD) and Joint Table of Mobilization Distribution (JTMD) billets and associated fill.

Phase 1 highlights

In September 2022, we provided JTF-CS with an information paper documenting our progress on steps (1) and (2) of our analytic approach. Specifically, it baselined JTF-CS' current MFT, including a detailed analysis of their current operational-level tasks (OPs) derived from mapping "raw" task language extracted from the following plans and orders to the closest matching Universal Joint Task List (UJTL) categories[10]:

- JTF-CS TACSOP
- Branch Plan 3510 to CONPLAN 3500-21
- OPLAN 3500-19 (CBRN Response)
- Branch Plan 3600 to OPLAN 3500 (National Capital Region CBRN + All-Hazards Response)
- Caribbean All-Hazards Plan: Annex J (Earthquake/Tsunami Response)
- Branch Plan 3512 to OPLAN 3500 (Earthquake Response)
- Branch Plan 3512 to CONPLAN 3500-21 (Earthquake Response)
- USNORTHCOM CONPLAN 3500-14: Annex C, Appendix 1, Tab H (Hurricane Response)

As a result of this detailed analysis, we found that JTF-CS currently has OPs aligned with both CBRN response and all-hazards DSCA missions, particularly earthquake and hurricane response operations. JTF-CS's common function across these missions is to provide command and control (C2) of DOD response forces. Despite varying descriptions of the tasks required to fulfill this function, a common set of 19 OPs exists across general (i.e., non-response), CBRN response, and all-hazards DSCA operations, and relatively few tasks are specific to a singular type of event. This suggests that **while adding the all-hazards mission set did not dramatically increase the number or diversity of JTF-CS's tasks, it increased the likelihood that JTF-CS would be required to execute these tasks across multiple response operations with consecutive, overlapping, or concurrent incident timelines**.

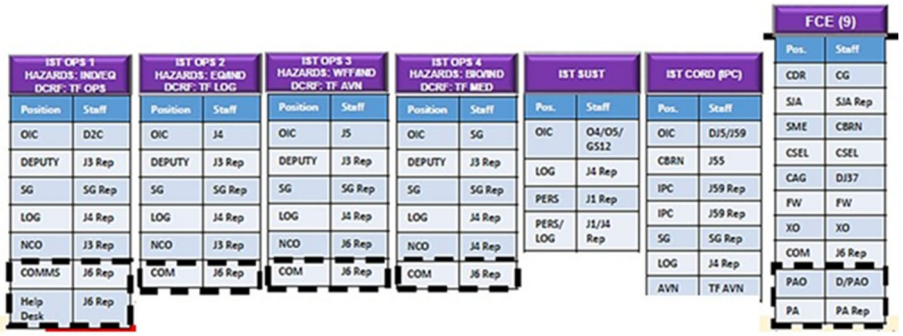
[10] We first identified key words among the subtasks associated with each OP in the UJTL. For example, underneath OP 1.1 (Conduct Operational Movement) we identified *deployment*, *redeploy*, *airlift*, *reception*, *staging*, *onward movement*, *integration*, *JRSOI*, and *JRC* as key words (from OP 1.1.1, OP 1.1.2, OP 1.1.2.1, OP 1.1.3, and 1.1.3.1). We then searched for these key words among the "raw" source language and flagged any matching rows of data. Of the 684 rows of "raw" source language–based tasks, we associated 499 with at least one OP. We then manually reviewed the remaining 185 rows of data and matched them to the closest associated OP using additional context clues from the source documents.

Our initial information paper also baselined JTF-CS' current organizational structure, drawing from the following source materials:

- JTF-CS TACSOP
- JTF-CS Master Organizational Chart
- JTF-CS JTD and JTMD Monthly Rosters (for the last 2 years or Jun 2020-Jul 2022)
- JTF-CS C2 Concept and Mission Assignment (MA)_Mission Assignment Task Order (MATO) Mission Processing Brief
- JTF-CS Org Review Brief
- 2022 Rehearsal of Concept (ROC) Drill Slides (Turns 1-3B)
- Vibrant Response 2022 (VR22) Final Exercise Report and Enclosures

In addition to clarifying JTF-CS' administrative structure (i.e., J-codes), this work revealed frequent variation between the documented forward elements of the HEC (shown in Figure 2 below) and those employed in the real-world.

Figure 2. Headquarters Echelon Concept (HEC)—Forward Elements



Source: [10].
Note: IST = Incident Support Team and FCE = Forward Command Element; hereafter, we refer to IST Operations 1-4 as "IST-O", IST Sustainment as "IST-S", and IST Coordination as "IST-C."

In particular, we noted differences between the theoretical forward elements of the HEC and those actually employed in real-world operations (e.g., COVID-19[11]) as well as recent exercises.

[11] We acknowledge that COVID-19 response operations were distinct from past all-hazards response operations in terms of its duration, supply requirements, and geographical spread. We therefore used recent exercises and SME discussions to temper any biases introduced using this data.

We also found the rear elements of the HEC (i.e., the main command post, or MCP) to be far less defined than the forward elements and that looking beyond theoretical discussions of MCP composition to real-world examples did little to clarify things.

Appendix E: Supplemental Findings from Interim Report provides more detail on our MFT and organizational structure analysis.

Gaps and Inefficiencies in the HEC

In our interim report, we presented an initial list of JTF-CS OPs derived from mapping "raw" task language extracted from key plans and orders to the closest matching UJTL categories. Appendix B describes how we compared this list to the JMETL developed by JTF-CS' staff and how we adjudicated any differences to arrive at a more refined, consensus-based task list. The result of these efforts is the refined list of JTF-CS operational-level tasks included on the left-hand side of Table 3 and Table 4, below. Also included in these tables are columns indicating the "Lead Operational Element" and "Lead Staff Section", respectively, for each OP according to various source materials. Specifically:

- A blue dot indicates explicit associations between OPs and operational elements and/or staff sections in the source documents
- A red dot indicates consensus-based selections from the Delphi[12]
- A green dot indicates offices of primary responsibility (OPRs) designated in the staff generated JMETL, and
- An orange dot indicates selections made by CNA analysts following direct observation of SUDDEN RESPONSE 2023 (SR23) and a review of prior exercise materials[13]

Table 3. Lead Operational Elements by OP

OP #	OP Title	IST-O	IST-S	IST-C	FCE	MCP-J[a]	MCP-O
	OP 1[b]	●●	●●	●●	●●	●●	●
OP 1.1	Conduct Operational Movement	●●	●●	●●	●●	●	●
OP 1.2	Conduct Maneuver and Force Positioning	●	●●	●	●		●
OP 1.3	Provide Mobility		●	●		●	●
OP 1.5	Control Operationally Significant Areas		●				●
OP 1.6	Conduct Patient Evacuation						●
	OP 2	●●		●		●●●	●
OP 2.1	Establish the Intelligence Enterprise						●

[12] Additional details on the Delphi can be found in Appendix C.

[13] Additional details on our observations of SR23 can be found in Appendix D.

OP #	OP Title	IST-O	IST-S	IST-C	FCE	MCP-J[a]	MCP-O
OP 2.2	Conduct Intelligence Functions	●●		●		●●	●
OP 2.3	Operate a Joint Intelligence Support Element (JISE)					●●	
OP 2.4	Conduct Joint Intelligence Preparation of the Operational Environment (JIPOE)					●●	●
OP 2.5	Gain Situational Understanding			●		●●	
	OP 4	●	●●●			●●	●●
OP 4.1	Coordinate Ammunition and Equipment Supply		●●				
OP 4.4	Coordinate Force Strength		●●			●●	●●
OP 4.5	Manage Logistic Services		●●				●●
OP 4.6	Build Sustainment Bases	●	●●				●●
OP 4.8	Acquire, Manage, and Distribute Funds						●●
	OP 5	●●	●●	●●	●●●	●●	●●
OP 5.1	Integrate Information			●		●●	●●
OP 5.2	Conduct Operational Assessment						●●
OP 5.3	Prepare Plans and Orders	●●	●●	●●	●●	●●	●●
OP 5.4	Command Subordinate Forces	●●	●●	●●	●●	●●	●●
OP 5.5	C2 Joint Force Headquarters (JFHQ)	●●	●●	●●	●●	●●	●●
OP 5.7	Integrate JIIM Participation	●		●●		●●	●●
OP 5.8	Conduct Public Affairs				●●		
	OP 6					●●	●
OP 6.2	Provide Protection					●	●
	OP 7					●	●
OP 7.9	Execute CBRN Response						

Source: CNA.

[a] MCP-J = the Joint Operations Center, or JOC, located at the MCP; MCP-O = all other bureaus, boards, centers, cells, and working groups (BC2WG) operating out of the MCP.

[b] The Delphi only included questions pertaining to overarching OPs, thus we included summary lines for each set of sub-OPs and indicated Delphi responses (red) there.

Note: A blue dot indicates explicit associations between OPs and operational elements and/or staff sections in the source documents listed on page 5, a red dot indicates consensus-based selections from the Delphi, a green

dot indicates OPRs designated in the staff generated JMETL, and an orange dot indicates selections made by CNA analysts following direct observation of SR23 and a review of prior exercise materials.

Table 4. Lead Staff Sections by OP

OP #	CMD	SST[a]	J1	J2	J3	J4	J5	J6
OP1[a]	●●	●●●	●●●	●●●	●●●●	●●●	●●●	●●●
OP 1.1	●	●●	●●	●●	●●●	●●	●●	●●
OP 1.2					●●	●●	●●	
OP 1.3				●	●●	●●	●	
OP 1.5						●●	●●	
OP 1.6						●		
OP 2	●●●	●●	●	●●●●	●●●	●●	●	●●●
OP 2.1	●	●	●	●●	●	●	●	●
OP 2.2				●●●	●●	●●		●
OP 2.3	●			●●●	●●●			
OP 2.4				●●●	●			
OP 2.5				●●●	●●			
OP 4	●●	●●●	●●●●	●	●●	●●●●	●●	●●
OP 4.1					●	●●		
OP 4.4		●●	●●●		●●	●●	●	●
OP 4.5						●●●		
OP 4.6				●	●●	●●	●	●
OP 4.8	●					●●		
OP 5	●●●	●●●●	●●●	●●	●●●●	●●●	●●●●	●●●●
OP 5.1	●●				●●●	●●	●	●●●
OP 5.2	●●	●●	●●	●●	●●	●●	●●●	●●
OP 5.3					●●●	●●	●●	●●
OP 5.4	●				●●●	●●	●	●
OP 5.5	●●	●●	●●	●●	●●●	●●	●●	●●
OP 5.7	●●	●●			●●	●●	●●●	
OP 5.8		●●●						
OP 6		●●		●	●●●●	●	●	●●●
OP 6.2		●			●●●			
OP 7	●				●●			●
OP 7.9					●●			

Source: CNA.

[a] SST = special staff, including the public affairs officer (PAO), staff judge advocate (SJA), etc.

Note: A blue dot indicates explicit associations between OPs and operational elements and/or staff sections in the source documents listed on page 5, a red dot indicates consensus-based selections from the Delphi, a green

dot indicates OPRs designated in the staff generated JMETL, and an orange dot indicates selections made by CNA analysts following direct observation of SR23 and a review of prior exercise materials.

These tables provide the basis for the following sections, which use their contents and related analysis to explore associated gaps and/or inefficiencies.

Unclear task ownership across HEC elements

As shown in Table 3, we identified several tasks for which there is not a single "lead" operational element and/or where the "lead" element(s) are not consistently identified across source materials.[14] Specifically:

- OP 1—According to source documents, the "lead" for this OP is MCP-O, while Delphi respondents assert that it is MCP-J and exercise observations suggest that it is both IST-S and IST-C
- OP 4—According to source documents and exercise observations, the "lead" for this OP is MCP-O and IST-S, while Delphi respondents assert that it is IST-S alone
- OP 5—According to source documents and exercise observations, the "lead" for this OP is MCP-O, whereas Delphi respondents agreed that it was the FCE
- OP 6—According to source documents, MCP-O is the "lead" for this OP, whereas Delphi respondents agreed that it was MCP-J[15]

We note several inefficiencies related to these findings. First, **overlapping task ownership within the MCP**—as seen in OP 1 and OP 6—**could result in multiple BC2WGs completing the same or very similar tasks in parallel**. This, in turn, could result in the staff expending more resources than required if only one completed the tasks or if the tasks were completed in tandem. Even coordinating on shared tasks might lead to inefficiencies—e.g., time being lost, or extra time being spent exchanging shared products, plans, etc.—if not carefully bounded by information exchange processes, of which we have limited evidence.

[14] If we assume that the operational element explicitly associated with the greatest number of sub-OPs (i.e., OP X.X) is the "lead" for the overarching OP (i.e., OP X).

[15] Limited exercise observations further suggest that the IST-Os and/or subordinate forces might be the "lead" for OP 6. For example, during SR23 there were cases where the protection of forces was necessary to prevent harm. In these cases, the operational element (IST-O) responsible for those forces appeared to coordinate with local law enforcement, at times in coordination with IST-C, to request the necessary support. These requirements were mentioned during the Commander's Update Board (CUB) and were monitored in the JOC, but the ultimate responsibility for force protection as listed in OP 6.2 appeared to be delegated to the operational elements responsible for the forces.

Second, in the absence of unambiguously assigned responsibilities, SME discussions and Delphi commentary suggest that tasks default to the JOC, even if they are "doctrinally" owned by another BC2WG. Again, OP 1 and OP 6 are prime examples here, with Delphi respondents agreeing that the JOC is the lead for OPs that other BC2WGs "own" according to source documents. This kind of **mission creep within the JOC may result in reduced effectiveness** (i.e., since the best-suited personnel for the tasks may or may not reside in the JOC) **and/or reduced efficiency** (e.g., as JOC personnel struggle to keep pace with excess tasking).

Third, in some cases (i.e., OP 4, OP 5), task ownership appears to be tied more to specific personnel (e.g., J4, commander) than their operational location and/or configuration. There may be many reasons for this, from a limited number of personnel with the requisite skills (i.e., tasking follows personnel because they don't "leave behind" the needed expertise) to the influence of specific personalities that don't delegate tasking to available "stay behind" personnel. Regardless of the reasoning, such **overly individualized task ownership could result in inefficiencies as information is lost and/or decisions delayed by transitions in and out of different operational configurations**. It could also reduce task effectiveness, as personnel experience tunnel vision centered on their location and current operations, vice those of the whole command (if deployed in the field).

Fourth, and finally, we noted several instances (i.e., OP 1, OP 4, OP 5) where exercise observations and/or Delphi responses indicated that forward elements (e.g., IST-S, FCE) should be the lead for an OP, while more formal source documents indicated rear element (i.e., MCP) ownership. The **absence of formally codified guidance and/or consistently practiced processes for transitioning these tasks from the MCP to forward elements, once established, risks information being lost and/or decisions being delayed as informal transitions take place**. It can also reduce organizational transparency for partner organizations, making it more challenging for them to discern where to go for critical information and/or decisions when required.[16]

MCP (may) not (always be) right sized

As shown in Table 3, the MCP—including the JOC and other BC2WGs—are overwhelmingly relied upon for most of the OPs. The ISTs, in contrast, appear to act as extensions of the MCP, providing real-time situational awareness (SA), overseeing key operations, and/or

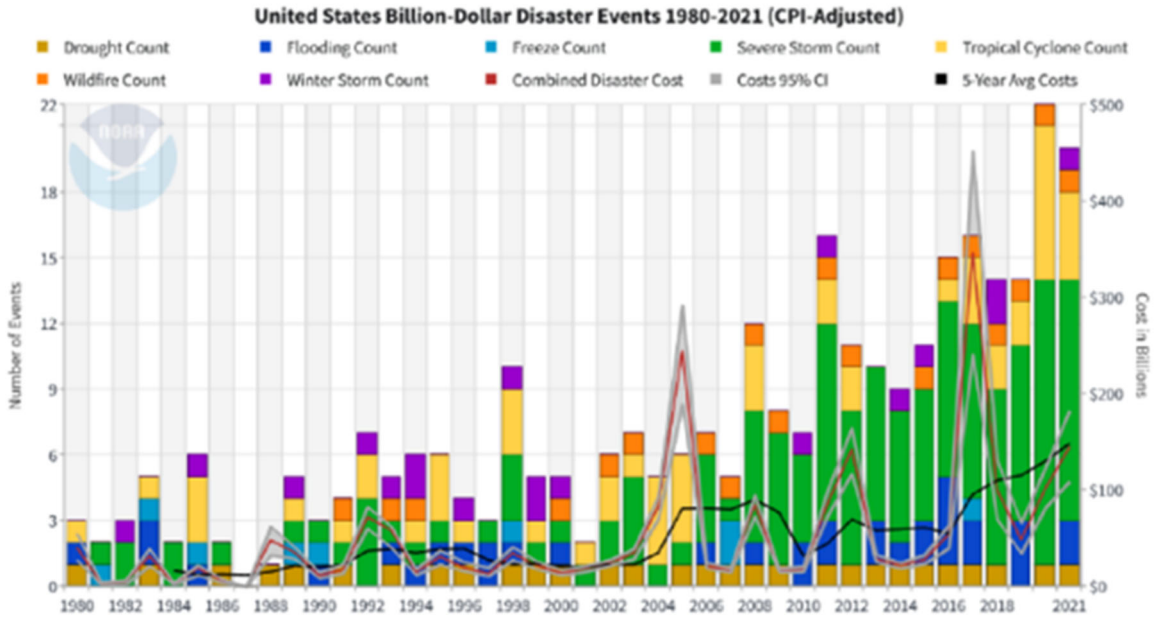
[16] As interfacing is often a personnel-heavy task, this is particularly salient for IST-C who is intended to be JTF-CS' primary interface with external organizations and who, according to exercise observations, plays a larger role in OP 1, OP 2, and OP 5 activities than is suggested by source documents.

coordinating with critical partners.[17] At a macro level, the relative sizing of the MCP and the forward elements appear to support this task breakdown. That is, the MCP retains most JTF-CS personnel *in steady-state, limited dispersion, and/or duration conditions*.

However, fielding additional ISTs could disrupt this relative sizing. For example, surge or sustained (90+ days) operations could require additional MCP personnel to staff IST rotations. Alternatively, greater geographic dispersal could require greater numbers of ISTs or less formal liaison officers (LNOs), both of which would draw from the MCP personnel pool. In either case, a reduction in the number of MCP personnel could affect the MCPs ability to complete both its on-order and enduring tasks. We find the current manning of the MCP to be short and not sufficient to support 24-hour operations of the MCP and Forward Elements.

This is especially concerning given the increasing rate of "billion-dollar disaster events," shown in Figure 3, below.

Figure 3. United States Billion-Dollar Disaster Events (1980-2021, CPI-Adjusted)



Source: [11].

[17] In SR23, all of the operational elements deployed forward appeared to be conducting relevant tasks via their daily briefs to the commander of JTF-CS in the CUB. They did not require augmentation, nor did they appear to have excess staffing based on their reports.

As shown, the majority of recent billion-dollar disasters are severe weather events that involve some level of DOD response. Moreover, with an average of 2117 FEMA disaster declarations per year (and an average of 104 associated DOD annual mission assignments) over the past five years, Figure 3 suggests an increasing likelihood of *concurrent* DSCA operations.[18] This, together with the broadening range of missions to which DOD forces are being assigned—as demonstrated by the diversity of response operations during the COVID-19 pandemic—increases the probability of an imbalance between MCP and forward element personnel evolving over time.

At its core, this is an issue of organizational boundary setting—currently, no firm "red lines" exist with regard to the minimum number of MCP personnel required to execute critical tasking and/or stand up critical BC2WGs.[19] This, in turn, increases the **risk that HEC tailoring[20] (both initially and over time) will result in deployment requirements that exceed the number of personnel available before MCP effectiveness and/or efficiency is affected**. Delphi comments suggest that this is a concern across most staff sections, with one respondent explaining that "personnel assigned to ISTs have 'day jobs' in the JOC and other MCP elements that will be gapped when the IST is employed."[12]

Part of the challenge in developing the aforementioned red lines lies in the fact that there is inconsistency across sources as to which BC2WGs are critical to JTF-CS operations. Table 5 illustrates this issue.

[19] The Org Review Brief we reviewed lists the number of personnel (PAX) in each staff section assigned to the MCP and adds up the total MCP requirements. However, it is unclear where these counts came from and why they appear to be constrained to 1 PAX per BC2WG (i.e., if a box in the org chart is assigned to one MCP BC2WG, it is not assigned to any others; unclear if this limited cross-representation is reality or if these assignments represent where each box spends most of its time). Also, there is some evidence from SME discussions that HEC personnel still routinely participate in BC2WG events, drawing into question whether the required number of personnel identified (which does not include HEC PAX) is accurate.

[20] Delphi comments indicate that geography (i.e., how far apart the operations are occurring) and complexity (i.e., how big of a response is required) will drive the tailoring of the HEC and the number of forward elements required, which may change over time. Further, according to observations of SR23, HEC elements above and beyond those listed in the baseline (i.e., 4 x IST-Os, 1 x IST-S, and 1 x IST-C) could be required. Specifically, participants in the SR23 crisis action team (CAT) discussed the fact that multiple IST-C or IST-S could be required in response to multiple DSCA events, to ensure that the IST-O remains self-sustaining and does not drain resources from the impacted area.

Table 5. Potential JTF-CS BC2WGs

Staff Section[a]	CPB	CDB	JOC[b]	Fu-Plans Cell	JMOC	JIFC[c]	CBRN/OEAC	ForPro Cell	JMC/JSC	JCCC	JLOC	JPPC	JPRC	CUOPS	FUOPS	IPC	PAC-MAN	C4SWG	KMWG	JPG	JOPES	TRX WG	JPOC
	X	X	X ✓ ● ○	X ✓	X ✓ ● ○	X ✓ ● ○	X ●	X ●	X ✓ ● ○	X ✓ ○	X ✓ ● ○	X ○	X	X ○	X ● ○	X ● ○	X	X ○	X ○	X ● ○	✓	✓	✓ ● ○
CMD	X		X ✓ ○				X													X			
SJA	X		X						○											X			
PA	X																X			X			
FM	X																						
SG	X		X ✓		X ✓ ○										X	X			X	X			
J1	X		X ✓									X ○	X						X	X			✓ ○
J2	X		X			X ✓ ○	X								X				X	X			
J3	X		X ✓ ○			✓	X							X ○	X ○				X ○	X		✓	
J4	X		X ✓				X		X ✓ ○		X ✓ ○				X	X			X	X			
J5			X ✓	X ✓			●									X ○			X	X ○	✓		
J6	X		X ✓							X ✓ ○					X			X ○	X	X			

Source: CNA.

[a] BC2WGs listed in the columns reflect those explicitly named in either the TACSOP (X), the Org Review Brief (✓), the Delphi (●), or JTF-CS' internal JMETL review documentation (○). Staff assignments are based on participants listed in BC2WG description, "Attendees" laid out in Figure 5a of the TACSOP, MCP components listed on slide 3 or in slides 5-15 of the Org Review Brief, OPRs listed in the JTF-CS draft JMETL, and/or staff sections associated with the BC2WG by Delphi respondents. This table does not include events exclusively associated with external audiences (e.g., "Commander's Huddle"), placeholder events (e.g., "Functional Boards), team meetings (e.g., CAT, operational planning team (OPT)) or other elements (e.g., JISE) that contribute to JTF-CS operations but fall outside of traditional BC2WG processes.

[b] According to the TACSOP, participation in the JOC depends on its operating status (i.e., Tier 1, 2, 3, or 4). In Tier 1-2, only J3 personnel are involved, whereas in Tier 3 additional J2, J4, J6, medical, and CMD personnel become involved. Finally, in Tier 4 operations—reflected in this column—J1, J5, and SJA personnel join the JOC as well.

[c] The Org Review Brief technically refers to the "IE Fusion Cell", which we assume to be the same as the JIFC.

Note: CPB = Commander's Planning Board; CDB = Commander's Decision Board; Fu-Plans Cell = Future Plans Cell; JMOC = Joint Medical Operations Center; JIFC = Joint Information Fusion Cell; OEAC = Operational

Environment Assessment Cell; ForPro Cell = Force Protection Cell; JMC/JSC = Joint Movement Center/Joint Sustainment Center; JCCC = Joint Communication Control Center; JLOC = Joint Logistics Operations Center; JPPC = Joint Personnel Processing Center; JPRC = Joint Personnel Reception Center; CUOPS = Current Operations; FUOPS = Future Operations; IPC = Interagency Planning Cell; PAC-MAN = Public Affairs Cell-Media Assistance Node; C4SWG = Command, Control, Communication, and Computer Systems Working Group; KMWG = Knowledge Management Working Group; JPG = Joint Planning Group; JOPES = Joint Operational Planning and Execution System Working Group; TRX WG = Training and Exercise Working Group; JPOC = Joint Personnel Operations Center.

Not only do the inconsistencies in Table 5 pose a challenge to developing red lines for use in HEC tailoring, but they also introduce potential consequences for the effectiveness and efficiency of the MCP's BC2WGs even in steady state, limited dispersion, and/or duration conditions. For example, **some critical BC2WGs could be gapped even before any personnel are taken to form forward elements**. Based on Delphi and TACSOP, CBRN/OEAC and Force Protection cells play critical roles in task execution, yet their absence from staff-generated products suggests that these cells may not be regularly established. Cases like this increase risk to mission if necessary processes and/or personnel are not in place when required.

Still other critical BC2WGs could operate inefficiently—lacking clear leadership and/or direction—or ineffectively—lacking cross-functional representation—in the absence of clearer guidance. For instance, while more than half of our sources agreed that the yellow highlighted BC2WGs should be staffed, there was limited consensus on who/how many personnel should staff them. Further, JIFC, FUOPS, IPC, JPG, and JPOC lack clear "owners" and JMOC, JIFC, JLOC, and JPOC lack even nominal (i.e., non-consensus) cross-functional representation.

Relative section sizes do not reflect task loads

Table 4reveals an uneven distribution of tasks across JTF-CS staff sections, with the J3 and J4 responsible for more than double the tasks of most other staff sections. Moreover, the J3 is the unequivocal "lead" staff section for three overarching OPs, while all other staff sections "lead"

one or no OPs. Based on this task distribution[21], we would expect the J3 to be the largest staff section with the best fit/fill, followed by J4, J5/J6/SST, J2, and CMD/J1, respectively.[22]

Yet, as Table 6 shows, the J3—while the largest staff section by size—has the second-lowest fill rate (tied with the J1). And while the J3 is authorized to receive the second largest number of JTMD augments (after the J6), at 53% average fill, they effectively receive fewer than three additional personnel, less than both the J6 and J4. Similarly, the J2 is both undersized and underfilled when compared to other staff sections (J1) with fewer tasks but more personnel (both authorized and filled). These disparities suggest that **available resources (e.g., billets, time/capitol spent filling billets and/or civilian positions) may not be spread efficiently across the command**.

Table 6. Task, Manpower, and Manning Distribution by Staff Section

Staff Section	# Sub-OPs[a]	# "Lead" OPs	# Auth JTD PAX (Avg Fill[b])	HEC "Tax"[c] (% of Filled PAX)	# Auth JTMD PAX (Avg Fill)
CMD	9	0	6 (83%)	5 (100%)	1 (100%)
SST	9	1	18 (83%)	9 (60%)	6 (64%)
J1	5	1	9 (78%)	2 (29%)	1 (100%)
J2	10	1	8 (75%)	0 (0%)	5 (24%)
J3	20	3	40 (78%)	6 (19%)	5 (53%)
J4	19	1	24 (92%)	9 (41%)	4 (83%)
J5	14	1	21 (90%)	7 (37%)	1 (100%)
J6	11	1	28 (93%)	7 (28%)	8 (68%)

Source: CNA

[a] Both the "# Sub-OPs" and the "# 'Lead OPs'" figures are drawn from Table 4; "lead" OPs are those for which all four source types in Table 4 indicated the associated staff section led task completion.

[b] J1 staff suggested that fill can fluctuate over time and recommended that we use an average vice a snapshot of the most recent JMD/JTMD. We therefore used quarterly JTD/JTMD pulls from 2021-2022 to calculate the average number of authorized billets and the average number of filled (incumbent) billets. With these two figures, we calculated the average fill—both JTD and JTMD—for each staff section.

[c] The HEC "Tax" for each staff section is drawn from numbers in Org Review Brief. These were then divided by the average number of filled billets in the staff section to calculate the "% of Filled PAX" (i.e., % of Filled PAX = HEC "Tax" / (# AUTH PAX x AVG Fill)).

[21] Also based on exercise observations; during SR23, the J3 was relied upon for the completion of a large number of tasks. While not always the lead staff section for a given task, the J3 was nonetheless involved in the execution of the task. To a lesser extent, this is also applicable to the J4—who played a lead role in the execution of the tasks that fall under OP 4, but who also acted as a key enabler for other tasks including those that fall under OP 1—and the J5, who was also involved in many tasks as an enabler during the planning phase, particularly early on during the CAT process where information was still coming into the MCP and COA development was underway.

[22] Assumes that staff section size should be directly correlated to the number of tasks. We acknowledge that this does not account for the complexity and/or level of effort associated with each task, and therefore may under- or over-estimate the requisite size of the associated staff section.

Table 4 and Table 6 suggest that the J6 is larger and likely able to longer sustain operations relative to their proportion of JTF-CS' tasks and compared to other staff sections (J4, J5) with similar—if not greater—task loads.[23] The J6 has more authorized personnel than the J4 or J5, and their average fill is also higher and they contribute similar if not slightly fewer personnel to the HEC. Further, they have the largest number of JTMD personnel, both authorized and adjusted for fill. Yet comments provided during the Delphi indicate an *insufficient* number of personnel within the "deployed COMMS section" to complete assigned J6 tasking. These disparities suggest that, in addition to available resources being inefficiently spread *across* staff sections (i.e., J6 relative to J4, J5), resources may be unevenly distributed *within* the J6 staff section. Such **uneven resource distribution relative to task loading could lead to task saturation and/or burnout, making it challenging for affected staff sections to satisfy all their responsibilities** (i.e., could create gaps).

A final insight gained from Table 6 is that the CMD, SST, J4, and J5 staff sections may be oversubscribed to the HEC, leaving few personnel at the MCP to provide timely expertise for MCP-led tasks. Given heavy reliance on MCP elements for task completion, each staff section—and particularly those with heavy involvement in MCP-directed OPs—would ideally have non-HEC personnel available at the MCP to provide requisite expertise. For example, J4 and J5 personnel are both heavily involved in OP 1, which is an MCP/JOC-directed task. Yet more than a third of both these staff sections are committed to the HEC. Given the potential for 24/7 operations as well as several enduring (i.e., non-operation-specific) tasks, such **a dramatic reduction in the number of J4 and J5 personnel at the MCP in the event of HEC employment likely affects the efficiency (e.g., speed of response) and/or the effectiveness (e.g., completeness of response) of task completion** within these staff sections. Indeed, Delphi results suggest that the J5 is insufficiently manned to satisfy their tasking in the event of concurrent response operations (i.e., multiple DSCA or DSCA + CBRN) and possibly in the event of a catastrophic CBRN event.

Critical tasks not (appropriately) assigned

Per the interim report, we consider CBRN-related tasks, enduring tasks, or multi-mission tasks to be critical. In other words, these tasks collectively represent the minimum set of tasks that must be completed by JTF-CS personnel operating under the HEC. As shown in Table 7, all OPs and sub-OPs in our refined OP list are considered critical by these criteria.

[23] Anecdotally, this conclusion is further supported by our review of the VR22 AAR, which did not mention the J6 (or J4) nearly as often as other staff sections.

Table 7. JTF-CS Operational-Level Tasks by Type

OP #	OP Title	CBRN-Related[a]	Enduring[b]	Multi-Mission[c]
OP 1.1	Conduct Operational Movement	X	X	X
OP 1.2	Conduct Maneuver and Force Positioning	X		X
OP 1.3	Provide Mobility	X	X	X
OP 1.5	Control Operationally Significant Areas	X		X
OP 1.6	Conduct Patient Evacuation	X	X	X
OP 2.1	Establish the Intelligence Enterprise	X	X	X
OP 2.2	Conduct Intelligence Functions	X		X
OP 2.3	Operate a Joint Intelligence Support Element (JISE)	X	X	
OP 2.4	Conduct Joint Intelligence Preparation of the Operational Environment (JIPOE)	X	X	X
OP 2.5	Gain Situational Understanding	X	X	
OP 4.1	Coordinate Ammunition and Equipment Supply	X	X	X
OP 4.4	Coordinate Force Strength	X	X	X
OP 4.5	Manage Logistic Services	X	X	X
OP 4.6	Build Sustainment Bases	X	X	X
OP 4.8	Acquire, Manage, and Distribute Funds	X		X
OP 5.1	Integrate Information	X	X	X
OP 5.2	Conduct Operational Assessment	X	X	X
OP 5.3	Prepare Plans and Orders	X	X	X
OP 5.4	Command Subordinate Forces	X	X	X
OP 5.5	Command and Control (C2) Joint Force Headquarters (JFHQ)	X	X	X
OP 5.7	Integrate JIIM Participation	X	X	X
OP 5.8	Conduct Public Affairs	X	X	X
OP 6.2	Provide Protection	X	X	X
OP 7.9	Execute Chemical, Biological, Radiological, and Nuclear (CBRN) Response	X		

Source: CNA.

[a] All OPs and sub-OPs in our refined OP list aligned with our primary CBRN source doc (OPLAN 3500-19); therefore, we marked them all as CBRN tasks. Based on discussions with NORTHCOM and JTF-CS SMEs and an enduring emphasis in command literature, these CBRN-related tasks are "no fail."
[b] In organizational gaming, it is common practice to differentiate between "consistent" events or tasks and "dynamic" ones. The former—what we refer to here as "enduring tasks"—represent the minimum set of "must-dos" for the organization, which are known ahead of time and staffed appropriately before dynamic tasks come into play. We therefore assume that these enduring tasks—previously identified using textual analysis of "raw" source language—are higher priority than on-order tasks.
[c] According to Joint guidance, "tasks contributing to more than one mission may receive increased consideration as JMET". [13] We determined this by grouping our source documents by mission (e.g., CBRN, DSCA) and identifying tasks mentioned across multiple mission types.

Using Table 3, Table 4, and Table 7 together, we found that **not all CBRN-related tasks are clearly assigned to JTF-CS operational elements and/or staff sections.** Specifically, OP 1.6 lacks a "lead" staff section specified in either the JMETL or other source documents.[24] In addition, OP 7.9 lacks any consensus-based "lead" staff section and/or operational element; that is, different source materials identify different leads for this task (e.g., staff generated JMETL and exercise observations suggest J3 as the lead; Delphi respondents suggest CMD, J6, and MCP). Absent clearly assigned roles and responsibilities for these OPs, JTF-CS risks failing its "no fail" mission of CBRN response.

We similarly found that a number of the *enduring* tasks in Table 7 have multiple task owners in Table 4.[25] For example, according to source documents, the J2, J3, J4, and J5 share responsibility for the execution of OP 1.3. Adding complexity, we also found variation across source materials with regard to the exact combination of staff sections responsible for certain OPs. Specifically, we found that:

- The J2 and J3 share responsibility for **OP 2.3** according to source documents and exercise observations, but according to the JMETL knowledge management (KM) personnel have a role as well

[24] Limited exercise observations suggest that the J4 may informally fill this role, but this is not captured in any other source documentation. Without formally assigned ownership of this task, JTF-CS cannot ensure patient evacuation resources are available and/or administrative requirements are met (e.g., Patient Evacuation Coordination Center (PECC) concept of employment (CONEMP) written and maintained). Further, SMEs suggest that the absence of a clear "point person" (or section) for this task could complicate necessary coordination with US Transportation Command (TRANSCOM), the Air Force, and other critical enablers.

[25] Several multi-mission tasks exhibit similar challenges; specifically, OP 1.2 (J4/5 per source documents, J3/4/5 per exercise observations, and J3-only per JMETL), OP 2.2 (J2/3/4 per source documents, J2 only per JMETL, and J2/3/4/6 per exercise observations), and OP 4.8 (FM per JMETL, J4 per source documents and exercise observations).

- The J4 has sole responsibility for **OP 4.1** according to source documents, but exercise observations suggest a large role for the J3 as well
- The J2, J3, J4, J5, and J6 all share responsibility for **OP 4.6** according to source documents, but exercise observations suggest only the J3 and J4 play notable roles in its execution
- The J3, J4, and J6 share responsibility for **OP 5.1** according to source documents, yet the JMETL identifies KM, J3, and J6 personnel as this task's owners while exercise observations suggest roles for the J3, J4, J6, *and* J5

Again, this **lack of clarity with regard to critical task assignments could result in gaps (i.e., incomplete tasks)** if associated roles and responsibilities are unknown to the respective staff sections. Likewise, insufficient deconfliction of shared roles and responsibilities, even if clearly assigned and acknowledged by staff sections, could reduce JTF-CS' ability to efficiently complete these tasks.

A final insight gained from comparing Table 3and Table 7 is that **two enduring tasks are assigned exclusively to forward elements of the HEC**.[26] Specifically, according to source documents and exercise observations, OP 4.1 is assigned to IST-S and OP 5.8 is assigned to the FCE (PAO). However, since these are enduring tasks, they require a task owner whether response operations—and, thus, forward element employment—are ongoing are not. Without a designated MCP "owner" for these tasks in the event HEC forward elements are not employed, JTF-CS cannot ensure continuity in their execution. Further, if the intention is to transition ownership of these tasks from the MCP (during non-response operations) to these forward elements of the HEC (in the event of response operations), JTF-CS will also need to delineate a transition plan and associated processes to transfer primary responsibility for these tasks to and from forward elements, as needed. Without these safeguards in place, JTF-CS **risks, at worst, gapping these tasks during periods of non-response operations and, at best, reduced efficiency in their completion during transitional periods**.

Critical task owners lack sufficient manning

With the exception of a single DSCA operation lasting fewer than 30 days, staff sections responding to the Delphi generally disagreed with the premise that "The number of billets allocated…would be sufficient to sustain HQ operations and complete all assigned tasks as part

[26] In addition, based on exercise observations, one multi-mission task (OP 1.2) appears to be conducted exclusively by forward HEC elements, despite source document descriptions of combined forward (IST-S) and rear (MCP-O) execution.

of JTF-CS' HQ echelon concept." The extent of disagreement (i.e., from "slightly disagree" to "disagree" to "strongly disagree") increased commensurate with the duration of the event, suggesting that sustaining any kind of operations beyond 30 days would be problematic under the HEC model. Similarly, there appeared to be greater confidence in the staff's ability to "make it work" for a single response operation than for any kind of concurrent or overlapping events.

Given the fact that *all* of the OPs in Table 4 are critical (according to our analysis in Table 7), this means that critical task owners do not believe they have sufficient manning to complete their assigned tasks. Specifically, Delphi results suggest that the J3 personnel—who are responsible for the majority of CBRN, enduring, and multi-mission tasks—agree that they are insufficiently manned to satisfy their combined (i.e., enduring and on order) tasking beyond 30 days and/or in the event of complex response operations (e.g., overlapping DSCA/CBRN, catastrophic CBRN). As a result of this insufficient manpower/manning, respondents asserted that the J3 experiences reduced task efficiency (e.g., stopping/starting task work such that tasks take longer to complete, tasks completed late) and effectiveness (e.g., tasks completed to a lower-than-normal standard) that compound over time. Moreover, in the absence of clear guidance on which tasks should be curtailed in what order, increasingly critical tasks may be affected without full risk assessment or mitigation (see also 'Appendix A: Areas for Further Research).

J2 respondents similarly indicated that limited manpower/manning "would cause degradation of duties performed" even within the first 30 days of a response operation. Likewise, J5 respondents commented that "there would be NOTHING left over across the command to continue to look at Phase 0 efforts (i.e., readiness)". Finally, J6 respondents argued that the consistent strain required to keep pace with steady state operations meant that surge operations—or even a higher intensity period of steady state operations—could cause "increased attention to some requirements and leading to failure in others." As an example, they pointed to real world COVID operations, wherein "Many tasks were not completed on time due to shifts [i.e., maintaining 24/7 help desk coverage] and personnel being displaced from the MCP [i.e., for forward element operations]."

Collectively, these responses suggest that **reduced task efficiency and effectiveness is immediate upon commencement of response operations, widespread across staff sections, and worsens over time.** Further, the tasks most affected are likely to be more "administrative" or else enduring tasks focused on planning and readiness for other types of response operations.[27] Over extended periods of time this, in turn, could result in a reduced

[27] Enduring tasks include operationally focused activities like monitoring the COP and managing alert rosters. Perhaps most significant for this finding, though, enduring tasks also include readiness generation and maintenance

ability to complete JTF-CS' full mission set, as capabilities associated with less frequent or intermittent tasks erode in favor of those associated with more frequent operations.

According to Delphi respondents, correcting this situation would require, at a minimum, that all JTD billets be 100% filled. Indeed, respondents on the Delphi consistently commented that 100% fit/fill (JTD) was a prerequisite for *any* kind of HEC operations. Yet, on average, no staff section meets this requirement (see Table 6). Moreover, the staff section responsible for the greatest number of overall tasks (J3) is tied for the second lowest fill rate. A related theme in the Delphi responses and exercise materials was that augmentation above/beyond the JTD would be required to sustain HEC operations and/or to execute concurrent operations.[28] In fact, in some cases, critical task owners (J2) indicated that such augmentation would be required even for a single response operation (catastrophic CBRN) within 30 days. However, JTMD billets are also not consistently filled to high levels and, according to Delphi commentary, "augmentation personnel are not guaranteed and cannot be depended on to arrive."

Delphi respondents attributed these persistent fill issues to a number of causal factors and we observed and discussed several others during command exercises. These included the fact that augments belong to a separate component and sub-command of NORTHCOM, that funding and scheduling of augments often requires planning outside of operational windows (6+ months), and the fact that augment prioritization can vary by mission set.[29] Yet one common solution to

activities like building partnerships (OP 5.4, OP 5.7) and conducting integrated planning and exercises (OP 5.3). According to the Delphi, all staff sections except the J1 spend at least some of their time on activities related to CBRN readiness and all staff sections (including the J1) spend at least some of their time on activities related to DSCA readiness. In fact, the Delphi results suggest that the J3 and J6 spend most of their time generating and/or maintaining readiness for these missions, along with the J4 and J5 who spend roughly half of their time doing so. Yet a review of recent JTF-CS readiness events suggests that both the number of and the amount of time spent *executing* readiness events has actually fallen since the introduction of the DSCA mission set (i.e., from 39 events over 180 days in 2018-2019 to 15 events over 99 days in 2021-2022). Further, there is a substantial amount of overlap in the types of events conducted before and after the introduction of the DSCA mission set (e.g., DCRF orientations, MTTs, CPXs, FTXs, and STAFFEXs, SUDDEN RESPONSE, VIBRANT RESPONSE). This degree of overlap was reiterated by participants in the Delphi, who repeatedly opined that most "of the preparation for DSCA and CBRN is the same as far as C2 is concerned". Thus, we caution JTF-CS against making organizational changes oriented exclusively or primarily around improving DSCA readiness generation/maintenance capabilities.

[28] In the ROC Drill there is a mention of submitting requests for forces (RFFs) for additional C2 augmentation if certain conditions are met. These conditions are "emerging incident response projected to exceed JTF-CS capacity," "High probability of CBRN response requirement in addition to existing requirement," "Insufficient C2 Capacity/Capability within Assigned/Allocated Forces," and "3x ISTs from JTF-CS deployed." Other than submitting RFFs for augmentation, the other COA mentioned was to "reorganize internal and/or subordinate assigned/OPCON forces to augment C2 approved requirements".

[29] When asked if JTF-CS had exercised and was capable of C2ing two simultaneous DSCA events, SMEs within the J5 said that they had and that they were capable with augmentation at the MCP. The differentiating factor in the simultaneous IND scenario is that due to JTF-CS's prime role in responding to IND events, they expect to receive priority for the required augmentation for the MCP which was less certain than in an IND + DSCA scenario.

these challenges is improved relationships with augmenting and enabling organizations. In the absence of this, **underdeveloped and/or inappropriate relationships with augmenting and enabling organizations could preclude filling gapped billets**—both permanent (JTD) and augmented (JTMD)—**and further undermine the ability of critical task owners to complete their tasks**.

Organizational Change Options

To explore options to address the gaps and inefficiencies identified in the previous section, we conducted a brainstorming session with subject matter experts and carried out a literature review of past organization analyses completed at CNA. These efforts highlighted that the gaps and inefficiencies we found in examining the HEC are not unique to JTF-CS. Issues surrounding task ownership and "right sizing" are prevalent across commands, from service component commands to the Navy's Office of Legislative Affairs.[14] Similarly, uncertainty regarding the capabilities of an MCP during surge operations of unknown intensity or duration is a concern for many commands with functions to support natural disasters, CBRN events, and other catastrophic incidents. [15]

Addressing Unclear Task Ownership

Previous CNA studies, for example assessing the organization of MARCENT and MARFORLANT, identified functions that were ill-assigned or misaligned to command-level tasking. Analysis of staff functions at the six commands of MARFORLANT found that responsibilities that were ambiguously assigned resulted in a duplication of effort and confusion surrounding chain of command. [14] The MARCENT study (as one example) identified misaligned functions and tasking highlighting functions inappropriately assigned to staff sections. [16] To address these challenges, CNA developed criteria—such as subject matter expertise, allocation of resources, and impact on contingency missions—to assign the functions to the headquarters (HQ) elements they were best suited to. [14] Developing similar criteria for the assignment of critical tasks, such as those that are CBRN-related, would provide clear standards to reference in determining the suitability of staffs for assignment. While criteria would help to narrow the number of elements available to take responsibility of the task, multiple staff elements may be well suited for a task and additional work would still be required to assign specific roles.

A recent study to assess the realignment of OPNAV N5 utilized a Responsible, Accountable, Consulted, and Informed (RACI) matrix to delineate functional roles and highlight inefficiencies and gaps in tasking. [17] The study asked branch managers to identify the tasks for which their branches were the *Responsible*, *Accountable*, *Consulted,* and *Informed* (RACI) parties. Completing a RACI matrix ensures every task has an assigned responsible and accountable staff element and can be useful in identifying which elements are too sparsely or heavily loaded with tasking. For tasks with unclear ownership amongst JTF-CS command elements, a RACI matrix could help clarify the specific role of each element involved in the task.

Finally, JTF-CS could choose to accept either the current *de jure* or *de facto* task assignments. This would require either enforcing the current written responsibilities in exercise planning and assessments *or* updating the documents such as the TACSOP, CONPLANS and OPLANS to reflect the "as-is" distribution of tasking. While this would clarify task ownership to ensure practice matches doctrine and resolve the inefficiency of unclear task ownership, it would not aid in closing the other identified gaps concerning the sizing of the MCP or staff sections to handle critical tasks.

Mitigating Uncertainty in Surge Capacity

As the HEC is tailored and, ultimately, employed, it pulls manpower for its forward elements from the existing HQ staff, leaving the MCP operating at a (variable) manpower deficit for an unknown amount of time. The associated uncertainty surrounding the ability to carry out the core functions of a command during prolonged or intense surge events has been observed in both real-world and exercise DSCA operations. For example, analysis of Operation Unified Response (OUR), the relief efforts to support Haiti in 2010, reported degraded counter-drug operations in the Caribbean because of the reassignment of surface assets to the OUR mission. Additionally, the operational costs of participating units missing training, maintenance periods and large exercises and the follow-on effects were highlighted as a significant unknown. [15] Additionally, CNA observations of a task force during its first consequence management (CM) exercise highlighted uncertainty in the activation procedures for a real-world event without the known schedule of the exercise. If the command staff supporting the task force were deployed at the time of an event, it was completely unknown whether they would be able to activate nor whether support could have been provided remotely. [18]

In the same CM exercise, the planning cell noted that supporting the continuity of operations (COOP) for mission-essential functions of the NSA where the exercise occurred was a mission-essential task but was uncertain as to the actual scope of these tasks. Analysis of the exercise stated the importance of a COOP with a clear, delineated missions "that can be translated into specific fleet operations and the personnel, critical infrastructure, and support activities required to perform those missions". [18] To mitigate the uncertainty surrounding surge capacity, JTF-CS could produce additional levels of COOP plans to understand the manpower and equipment requirements associated with regular and surge conditions, as well as a more time-phased approach to understanding criticality. This would require identifying the absolute minimum levels of equipment and manpower necessary for each JMETL task, as well as the lowest frequency at which the task can be completed considering their impact on critical infrastructure and support functions. Analysis from the CM exercise also notes that the JMD, OPORD, SOPs and COOPs should be refined during quarterly training for task forces to become proficient. [18]

A novel method to assess the manpower allocations during steady state and surge events is through wargaming. In 2017, for example, CNA developed a wargame to test the manning structure of a new sub-unified command of Combined Joint Task Force – Horn of Africa (CJTF-HOA). The wargame played through a six-month narrative of varied crises and asked players to assign billets to address crises as they occurred. The data from this wargame was used to analyze the utilization rates of personnel and ability to meet the command's mission. A similar wargame could be used to test the performance of JTF-CS billet allocations against required event and COOP capabilities during a sustained event.

Tasking normally assigned to the MCP may also be able to be pushed to the forward operating elements during an event to relieve the compression of tasks onto a smaller-staffed MCP. As remote work becomes more common in all aspects of labor, JTF-CS can take advantage of it during surge events to compensate for relocation of staff by also relocating tasks traditionally completed by the MCP. Tasks that do not require physical labor or equipment on-site or close-in person collaboration are appropriate for physical relocation; for example, research, document preparation and administrative tasks have been identified by the Office of Personnel Management (OPM) as "portable" tasks that can be performed at any location. Tasks like these can be completed by forward elements that traditionally work at JTF-CS HQ or by staff augmentees, such as reservists, at remote locations provided they have sufficient communications, connectivity and network access. [19]

Correcting Manpower Issues

Manpower sizing issues affecting JTF-CS including relative staff section sizes that do not reflect task loads and critical task owners lacking sufficient manpower are not unique to the command; a CNA assessment of NAVSO's organization after its establishment in 2000 revealed COMNAVSO was under-staffed based on functional responsibilities and the area of operation. A comparison of the NAVSO staff to manning levels of the commands, which formerly held NAVSO's mission sets and manning levels of other component commanders, revealed the strain of frequent travel on the main headquarters staff's ability to fulfill their responsibilities. While NAVSO held fewer responsibilities than its larger counterparts, NAVCENT and NAVEUR, the command's large area of operation requiring frequent long-distance travel created a time demand not captured by analysis of traditional tasking. In determining the correct staff-sizing, JTF-CS should consider looking to joint task forces or civilian organizations with similar missions, such as FEMA, to compare the mission sets and manning levels required to fill them as a first step to determining the correct staff sizing. [20]

Accurate accounting for manpower demand should be part of a solution to correct staff section sizing and ensure enough manpower is available to carry out critical tasks. For example, based

on feedback that true level-of-effort requirements were unknown, CNA designed and carried out a workforce analysis for the DHS Cybersecurity and Infrastructure Security Agency (CISA) to assess the number of Protective Security Advisors (PSAs) required to accomplish their mission, including non-discretionary work, discretionary work, and leadership priorities. For JTF-CS, developing a similar logic model to capture demands on blue skies and response manpower resources—including tasking captured in the JMETL as well as other administrative and travel demands—is a critical first step to right-sizing staff sections.

Change options

Our analysis identified gaps and inefficiencies challenging the organizational structure of JTF-CS. Based on past CNA work, organizational frameworks for efficiency (including examining studies of organizations facing similar challenges), and industry best practices, we identified a set of change options for JTF-CS to consider. Table 8 presents a number of organizational change options that have the potential to mitigate if not eliminate the challenges that JTF-CS faces. In each row we present a change option that is mapped against the primary challenges (shown in the columns) the change option would address if implemented. In particular, we note that employing a responsibility assignment matrix (e.g., RACI), conducting OT3 gaming, and/or executing more detailed manpower analysis—to include comparisons with "like" organizations—all offer the potential to address a majority (3/5) of the gaps and inefficiencies we identified.

While we deem the HEC feasible and acceptable overall, the gaps and inefficiencies must be addressed to (1) successfully achieve full transition to DSCA all hazards and be able to (over the long-term) support the DSCA mission, and (2) maintain the CBRN no-fail mission.

Table 8. Mapping Options to Gaps/Inefficiencies

Change Option	Unclear task ownership	MCP not (always) right sized	Section sizes ≠ task loads	Critical tasks not assigned	Task owners lack sufficient manning
1. Develop/apply task assignment criteria				X	
2. Employ a responsibility assignment matrix (e.g., RACI)	X		X	X	
3. Enforce *de jure* responsibilities	X			X	
4. Update written guidance to reflect *de facto* responsibilities	X			X	
5. Identify "portable" tasks and develop associated processes		X		X	
6. Detailed COOP planning	X	X			
7. OT3 gaming	X	X	X	X	X
8. Capture actual demand for manpower (e.g., time-use analysis)		X	X		X
9. Compare/contrast JTF-CS with corollary organizations		X	X		X

Source: CNA.

Each change option varies in terms of the resources and effort it requires to enact and sustain. Thus, the feasibility and ease of implementation of these options is critical to consider. We vetted the change options with the command to identify: (1) which change options are within the control of JTF-CS to implement on its own (without involvement, beyond situational awareness, of HHQ); (2) how hard the change option is to implement (required resources, chains of approval etc.), and (3) whether support from HHQ is required to implement the change option. In Table 9 we summarize the output of the feasibility mapping for the change options. The rightest column identifies specific actions to be taken by JTF-CS.

Table 9. Feasibility and Ease of Implementation for Change Options

Change Option	Within JTF-CS control[a]	Ease of implementation[b]	Requires HHQ support	JTF-CS required action
1. Develop/apply task assignment criteria	F	L	NO	(1) update functional tasks done in 2019 manpower study (2) reorganize tasks functionally (critical, non-critical, exercise only etc.) (3) develop and enforce RACI matrix
2. Employ a responsibility assignment matrix (e.g., RACI)	F	M	NO	
3. Enforce *de jure* responsibilities	F	L	NO	(1) review/update TACSOP, CONPLANS, and OPLANS (2) disseminate and enforce the written roles and responsibilities
4. Update written guidance to reflect *de facto* responsibilities	F	L	NO	
5. Identify "portable" tasks and develop associated processes	F	M	NO	(1) identify tasks that can be performed at any location
6. Detailed COOP planning	F	L	NO	(1) identify the minimum levels of equipment and manpower necessary for each JMETL task
7. OT3 gaming	N	H	YES ($)	(1) request financial support for organizational troop-to-task (OT3) wargame
8. Capture actual demand for manpower (e.g., time-use analysis)	N	H	YES ($)	(1) request financial support for in-depth manpower and time-use analysis
9. Compare/contrast JTF-CS with corollary organizations	P	M	YES ($)	(1) request financial and top-cover support to coordinate with other JTFs or CIV units (JTF-N, JTF-NCR, FEMA, NGB, etc.)

Source: CNA.
[a] F = within full control of JTF-CS; N = not within control of JTF-CS; P = Partially within control of JTF-CS but collaboration or support from HHQ is needed.

[b] L = low level of effort to implement; M = medium level of effort to implement (requires more resources/time or some form of chain of approval); H = high level of effort to implement.

In sum, at minimum, we recommend that JTF-CS implement change options 1-5 (rows 1-5). Change options 1-5 are related; that is, they focus on roles and responsibilities and task assignments. Implementing these change options will clearly delineate between roles and responsibilities for all OPs by element (staff section) to ensure clear task ownership, balance task loads among the sections, and ensure all critical tasks are assignment. However, ideally, JTF-CS can implement all change options in order to determine the appropriate sizing of sections and allow for tailoring of HEC elements to ensure each section within JTF-CS has the manpower necessary to efficiently execute its assigned tasking. To do so, we recommend a structured organizational troop-to-tasking (OT3) game. OT3 will allow JTF-CS to stress-test staffing configurations within available resources to identify the optimal staffing structure to support the new mission set and ensure execution of all OPs to successfully transition to DSCA, while maintaining its no-fail CBRN readiness.

Conclusion

JTF-CS has adapted to its expanded mission set via an ad-hoc reorganization and the development of the HEC. The new structure and employment model generally supports the execution of JTF-CS's vast MFT. However, sustained operations over an extended period, or the execution of multiple operations concurrently (potentially spread over several locations) will be problematic for JTF-CS as laid out in our report. Our analysis identified gaps and inefficiencies that impact JTF-CS's surge- and long-term capacity to sustain operations. The change options we have developed provide a foundation for the command to eliminate these gaps and inefficiencies. Feasibility mapping with the command allowed us to identify the change options within sole control of JTF-CS versus change options that reside outside of their control and will require support or action external to JTF-CS. For example, while JTF-CS can develop and employ a responsibility assignment matrix (e.g., RACI), JTF-CS cannot, without support from HHQ, fill critical billet gaps (i.e., aviation planner). NORTHCOM's future operating environment in the context of homeland defense requires JTF-CS to not only be flexible and immediately responsive/highly adaptable but also to be able to sustain operations over the long-term and provide surge capacity for coast-to-coast DSCA response operations and associated requirements. We recommend JTF-CS and HHQ implement change options as described in Table 9.

Appendix A: Areas for Further Research

In the introduction to this paper, we laid out the following analytic caveats:

- We focused our baseline of JTF-CS' MFT and JMETL on operational activities vice administrative ones
- We limited our analysis of JTF-CS' tasks to types of operational-level tasks vice more discrete tasks
- We limited our analysis of JTF-CS' organization structure to operational elements and staff sections, as a whole, vice individuals or billets
- We focused our analysis of gaps and/or inefficiencies on internal JTF-CS structures and processes vice seams between JTF-CS and external organizations

Each of these caveats, in turn, restrained the insights that could be gained from—and thus the recommendations that could be made based on—our analysis. For example, focusing our baseline on operational activities limited our ability to describe, in detail, which administrative tasks are most affected by current organizational gaps/inefficiencies. Moreover, it limited our ability to explore how *sustained* HEC operations might affect broader JTF-CS functionality in the long term.

This issue of sustainment is a particularly salient one, given that Delphi respondents agreed that prolonged operations would challenge the HEC and JTF-CS more generally, but—like our, independent analysis—could not elucidate the exact nature of this challenge (e.g., what tasks/staff sections would suffer). To address this shared limitation, **we suggest that JTF-CS consider additional research into**:

- **COOP planning**—What tasks (operational and/or administrative) are mission critical after 24 hours, 48 hours, several weeks, or even several months? Which of these mission critical tasks are hyper-reliant on specific staff sections and/or billets having the capacity and/or capability to execute them?
- **HEC rotations**—What would HEC rotations look like either for sustained, single-response operations or for multiple, concurrent events? What would the associated personnel "tax" be for different staff sections? Would any staff sections associated with mission critical tasks (see above) be affected?

Focusing the analysis in this paper on gaps and/or inefficiencies internal to JTF-CS' structures and processes similarly limited our ability to explore *external relationships.* Yet a possible outcome of the addition of the all-hazards mission set is an increase in the range of relationships that JTF-CS is expected to maintain and work through during a response operation. Further, several of the gaps and inefficiencies that we did uncover could have the effect of reducing organizational transparency for partner organizations, making it challenging to establish and maintain these critical linkages.

Additionally, prior CNA work on responses to COVID-19 and large natural hazard response operations (e.g., Hurricane Maria, Hurricane Harvey, Hurricane Irma, Superstorm Sandy) suggests that misalignment with partner organizations—which could be an unintended consequence of HEC adoption, not explored in this paper—can result in unanticipated personnel needs to staff local, regional, and federal response structures such as the Defense Coordinating Element (DCE); hazard-specific coordination sites (e.g., public health offices for a biological incident response); multiple, multi-agency coordination centers like the regional and national FEMA coordination centers; or even incident command posts (ICPs) in the field. Misalignment can also create risk to the overarching federal response—including lifesaving and life-sustaining missions—as close coordination between JTF-CS/NORTHCOM and the rest of the federal response eases the process for getting assets out early enough to impact outcomes for the largest-scale disasters.

To address this potentially significant limitation, **we suggest that JTF-CS further explore** the following:

- **The all-hazards ecosystem**—What organizations (federal, state, local; public, private) are involved in all-hazard response operations? At what level, if at all, do they (or should they) interact with JTF-CS? What types of information can/do they offer and/or require? What formal guidance or informal norms dictate their behaviors and methods/means of interacting with JTF-CS? What level of connectivity does JTF-CS have with members of the all-hazards ecosystem today? What level of connectivity is required to execute JTF-CS' new mission set?
- **Alignment at key *external* interfaces**—Which staff sections, operational elements, and/or personnel within JTF-CS interact regularly with external organizations? Are there singular points of interaction? Are there particularly critical points of interaction? What is the structure of the external organization(s) at these singular and/or critical points of interaction? How does this compare to the involved JTF-CS entities?

A final caveat of the present analysis was our decision to focus on broad, operational level task *types* (i.e., OP X.X) and operational elements and staff sections, as a whole. This, in turn, prevented us from drawing conclusions regarding whether specific billets are gapped or used

inefficiently used as well as from identifying tactical-level tasks that are not well served by the HEC. While this was in line with the sponsor's desire for "high-level analysis and recommendations," it did restrain the specificity of our findings and, in particular, our ability to inform the command's manning document. Absent more quantitative sources of data regarding the level of effort and number of personnel associated with more discrete operational tasks, we were unable to definitively argue for "X" number of additional billets or "Y" fewer billets on the JTD or JTMD, nor could we point to particularly critical gapped billets.

Yet qualitative source materials—most notably the Delphi, but also several command-generated documents—suggest that augmentation above and beyond the JTD would be required to sustain HEC operations and/or to execute concurrent operations. Moreover, during surge operations, Delphi responses indicate that the HEC would facilitate task execution only if all authorized JTD and JTMD billets were filled. Absent these conditions, respondents suggest that JTF-CS would likely experience PERSTEMPO issues, manpower losses (particularly civilian), readiness degradations, loss of critical functionality (e.g., cyber certs), and potentially mission failures (e.g., can't accept additional MAs).

To mitigate the potential for these outcomes and generate more detailed insights into manpower and/or manning issues related to HEC employment, **we suggest that JTF-CS consider running an organizational troop-to-task (OT3) wargame**. Such games are designed to have staffs play through operational scenarios of varying intensity with play cards representing their available manpower and event cards reflecting likely operational tasking. The result is an array of detailed data regarding which billets are used for which discrete tasks under what conditions. This data can then be aggregated over the course of multiple turns to understand which billets and/or staff sections are over- (or under-) tasked, which are critical under certain conditions, and where there are gaps in requisite expertise.

Appendix B: Updated JTF-CS JMETL

In our interim report, we presented an initial list of JTF-CS OPs derived from mapping "raw" task language extracted from key plans and orders to the closest matching UJTL categories. Before we could proceed with mapping these tasks to the available administrative structures and/or HEC elements, we first needed to understand how our list compared to JTF-CS' self-assessed responsibilities. We therefore compared our proposed JMETL to the staff generated JMETL.[30] The results of this comparison can be found in Table 10, below.

Table 10. CNA versus JTF-CS generated JMETLs

OP # (CNA)	OP # (JTF-CS)[a]	OP Title[b]	Matches	Include in Final?[c]
OP 1.1	OP 1.1	Conduct Operational Movement	X	Yes
OP 1.2	OP 1.2.3	Conduct Maneuver and Force Positioning	X	Yes
OP 1.3		Provide Mobility		Yes
OP 1.5		Control Operationally Significant Areas		Yes
OP 1.6		Conduct Patient Evacuation		Yes
OP 2.1	OP 2.1	Establish the Intelligence Enterprise	X	Yes
OP 2.2	OP 2.2	Conduct Intelligence Functions	X	Yes
OP 2.3	OP 2.3.X	Operate a Joint Intelligence Support Element (JISE)	X	Yes
OP 2.4	OP 2.4	Conduct Joint Intelligence Preparation of the Operational Environment (JIPOE)	X	Yes
OP 2.5	OP 2.5	Gain Situational Understanding	X	Yes
OP 2.6		Provide Intelligence to Plans		Maybe
OP 3.1		Conduct Targeting		Maybe
OP 4.1		Coordinate Ammunition and Equipment Supply		Yes
OP 4.2		Synchronize Fuel Supply		No
OP 4.3		Provide Equipment Maintenance		No
OP 4.4	OP 4.4	Coordinate Force Strength	X	Yes
OP 4.5	OP 4.5 (.X)	Manage Logistic Services	X	Yes
OP 4.6		Build Sustainment Bases		Yes

[30] Following the introduction of the all hazards DSCA mission, JTF-CS initiated a re-validation of its JMETs. We used the JMETL briefed at the 17 November 2021 Commander's Planning Board (CPB) as the basis for our analysis.

OP # (CNA)	OP # (JTF-CS)[a]	OP Title[b]	Matches	Include in Final?[c]
OP 4.7		Provide Politico-Military Support		Maybe
OP 4.8	OP 4.8	Acquire, Manage, and Distribute Funds	X	Yes
OP 5.1	OP 5.1.X	Integrate Information	X	Yes
OP 5.2	OP 5.2 (.X)	Conduct Operational Assessment	X	Yes
OP 5.3	OP 5.3	Prepare Plans and Orders	X	Yes
OP 5.4	OP 5.4 (.X)	Command Subordinate Forces	X	Yes
OP 5.5	OP 5.5 (.X)	Command and Control (C2) Joint Force Headquarters (JFHQ)	X	Yes
OP 5.7	OP 5.7 (.X)	Integrate JIIM Participation	X	Yes
OP 5.8	OP 5.8	Conduct Public Affairs	X	Yes
	OP 5.9.3	Conduct Joint Electromagnetic Spectrum Management Operations (JEMSMO)		No
OP 6.1		Provide Aerospace Defense		No
OP 6.2	OP 6.2	Provide Protection	X	Yes
OP 6.3		Protect Systems and Capabilities		Maybe
OP 6.5		Provide Security for Operational Forces		Maybe
OP 7.2		Conduct Countering Weapons of Mass Destruction (CWMD) Threat Reduction		No
OP 7.3		Conduct Security Cooperation (SC)		No
OP 7.4		Execute Countering Weapons of Mass Destruction (CWMD) Control		No
	OP 7.9	Execute Chemical, Biological, Radiological, and Nuclear (CBRN) Response		Yes

Source: CNA.

[a] To allow for cross-referencing of the staff generated JMETL—which included OPs below the threshold considered in CNA's analysis (i.e., OP X.X.X)—we included any OP with a differentiated X.X (e.g., OP 1.1, OP 1.2.3), even if the differentiated OP nested under another OP (e.g., OP 1.2.3 nests under OP 1.2). We did this based on the assumption that the inclusion of nested OPs in the staff generated JMETL indicated that JTF-CS was responsible for at least some portion of the overarching OP. Note that in any cases where there were multiple nested OPs (X.X.X) sharing a common base (X.X), a generalized "X" has been used in place of the third ".X." Where this ".X" is displayed in parentheses, both the overarching OP (X.X) and multiple nested OPs (X.X.X) were included in the staff generated JMETL.

[b] The UJTL is a "living" document that is updated monthly by the Joint Staff. Following staff comments indicating that our OP titles were out of sync with the latest version of this document—particularly OP 2, OP 6, and OP 7—we revised our OP titles and associated key words to match the 30 November 2022 version of the UJTL. As a result, titles in this document will differ from those presented in the interim report and any changes made to the UJTL since 30 November 2022 will not be reflected here.

[c] This column depicts the results of our analysis of inclusion criteria and associated review of each OP, described in subsequent paragraphs. A "yes" with green shading indicates that a divergent OP (i.e., one that did not match between CNA's and JTF-CS' JMETLs) meets our criteria for inclusion in JTF-CS' final JMETL. A "maybe" with yellow shading indicates that a divergent OP should be considered for inclusion or else its key activities should be

accounted for elsewhere in the final JMETL. Finally, a "no" with red shading indicates that a divergent OP should *not* be included in the final JTF-CS JMETL. Note that all OPs with a match (i.e., an X in the "Matches" column) were automatically marked "yes" for inclusion in the final JTF-CS JMETL.

As shown, we found that the JFT-CS staff JMETL overlapped with 18 of the 34 OPs identified in our initial analysis. The remaining 16 CNA-identified OPs—plus an additional two OPs (OP 5.9 and OP 7.9) not included in CNA's JMETL but identified in the staff JMETL—represent points of divergence across the two task lists. This was unsurprising, given that CNA's interim product was an initial list of all possible JTF-CS' tasks whereas the staff-developed JMETL was a result of multiple rounds of iterative refinement.[31]

With the goal of reconciling these differences and arriving at a more refined, consensus-based task list, we first reexamined the source materials underlying each of the CNA-identified OPs. Specifically, we considered the following characteristics:

- **The degree of subjectivity**—The lesser the proportion of "raw" source language–based inputs manually mapped to the OP using word association and context clues, the lesser the potential for subjective bias in assigning that OP to JTF-CS.
- **The strength of the association**—The greater the total number of "raw" source language–based inputs linking JTF-CS to a task, the greater the potential that the OP is a JTF-CS responsibility.
- **The degree of consensus**—The more widely OP-related activities are discussed in relation to JTF-CS (i.e., the higher the number of associated source documents), the greater the potential for consensus around JTF-CS' role in their execution.

The resultant data set is shown in Table 11.

Table 11. CNA OP Sub-Characteristics

OP #	% Word Association Tasks	Total # Tasks	Adjusted Total # Tasks[a]	# Supporting Source Docs
OP 1.1	1.3%	79	78	7
OP 1.2	6.7%	15	14	6
OP 1.3	0.0%	9	9	4
OP 1.4	0.0%	0	0	0
OP 1.5	0.0%	7	7	4
OP 1.6	11.1%	9	8	3
OP 2.1	0.0%	13	13	3

[31] Part of the JMETL development process entails prioritizing and refining all of the tasks assigned to an organization in order to arrive at a list of critical, "core" tasks anchored firmly to the organization's missions and functions. The task list presented in CNA's interim deliverable had not yet undergone this refinement.

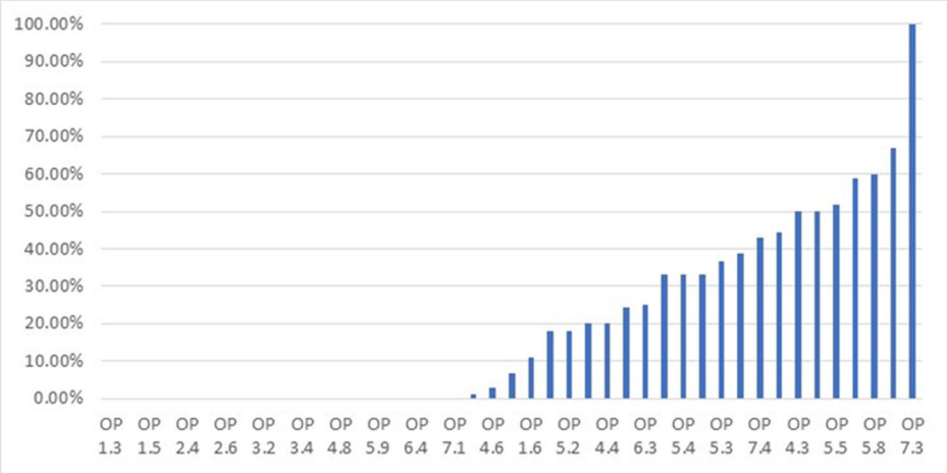
OP #	% Word Association Tasks	Total # Tasks	Adjusted Total # Tasks[a]	# Supporting Source Docs
OP 2.2	18.2%	11	9	4
OP 2.3	33.3%	3	2	1
OP 2.4	0.0%	23	23	4
OP 2.5	0.0%	5	5	1
OP 2.6	0.0%	5	5	3
OP 3.1	0.0%	5	5	6
OP 3.2	0.0%	0	0	0
OP 3.3	0.0%	0	0	0
OP 3.4	0.0%	0	0	0
OP 4.1	20.0%	15	12	5
OP 4.2	0.0%	2	2	2
OP 4.3	50.0%	4	2	2
OP 4.4	20.0%	55	44	8
OP 4.5	38.8%	49	30	8
OP 4.6	3.0%	33	32	6
OP 4.7	50.0%	6	3	2
OP 4.8	0.0%	2	2	2
OP 5.1	24.3%	103	78	7
OP 5.2	18.2%	11	9	5
OP 5.3	36.8%	76	48	6
OP 5.4	33.3%	72	48	7
OP 5.5	51.6%	91	44	5
OP 5.6	0.0%	0	0	0
OP 5.7	66.7%	30	10	7
OP 5.8	60.0%	10	4	5
OP 5.9	0.0%	2	2	2
OP 6.1	0.0%	1	1	1
OP 6.2	58.8%	17	7	6
OP 6.3	25.0%	8	6	3
OP 6.4	0.0%	0	0	0
OP 6.5	44.4%	9	5	6
OP 6.6	0.0%	0	0	0
OP 7.1	0.0%	0	0	0
OP 7.2	33.3%	3	2	1
OP 7.3	100.0%	3	0	1
OP 7.4	42.9%	7	4	2

Source: CNA.

[a] In some cases, an OP had a greater proportion of word association-based inputs than this, but also a relatively large total number of "raw" source language-based inputs. We therefore conducted an additional round of calculations to determine whether—absent all word association-based inputs (i.e., 0% word association-based inputs)—the OPs still had equal to or greater than 7 "raw" source language-based inputs. These adjusted figures are shown in the "Adjusted Total # Tasks" column.

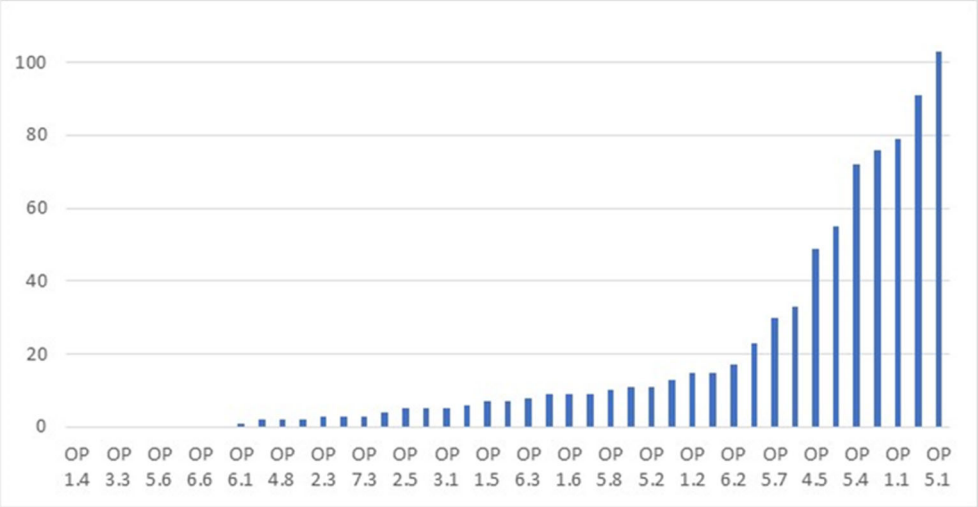
To determine the most appropriate benchmarks to use as criteria for including or excluding an OP from the final recommended list, we generated graphs of each of our sub-characteristics. Figure 4, Figure 5, and Figure 6 show the data distributions of word association inputs, total inputs, and source documents, respectively.

Figure 4. Distribution of Word Association Sub-Characteristic



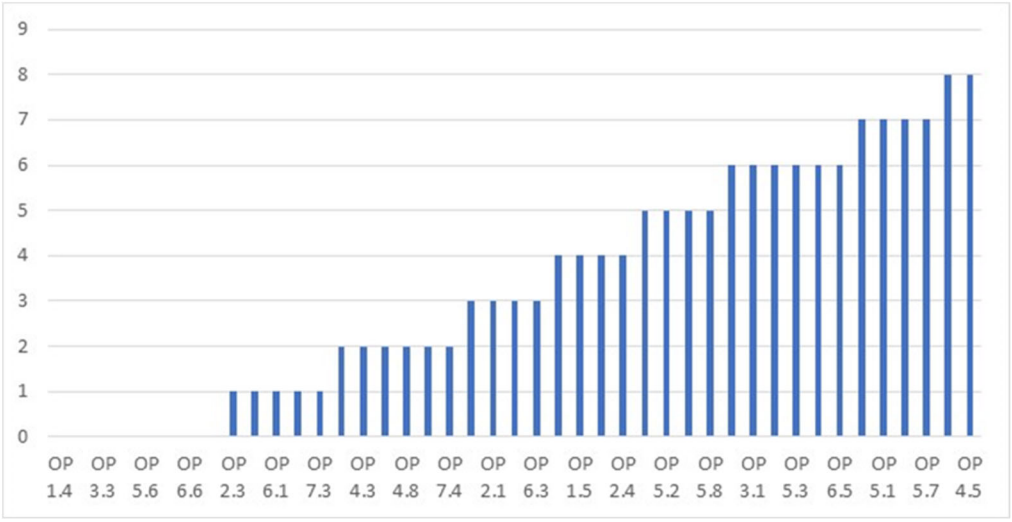
Source: CNA.

Figure 5. Distribution of Total Inputs Sub-Characteristic



Source: CNA.

Figure 6. Distribution of Number of Sources Sub-Characteristic



Source: CNA.

As shown above, none of our data sets were normally distributed. We therefore used calculations of median (vice average) values and interquartile ranges as the primary benchmarks for whether or not an OP should be included in the final recommended JMETL. These are shown in Table 12, below.

Table 12. OP Inclusion Criteria Calculations

Calculation	% Word Association Tasks	Total # Tasks	# Supporting Source Docs
Median	6.7%	7.0	3.0
Quartile 1	0.0%	2.0	1.0[a]
Quartile 3	35.1%	16.0	6.0

Source: CNA.

[a] To be consistent with the previously described characteristics, we used a minimum of 2 supporting source docs in our criteria, below.

Based on the calculations in Table 12, we established the following criteria for including an OP in our final recommended JMETL:

- Equal to or less than 6.7% word association-based inputs[32]
- Equal to or greater than 7 "raw" source language-based inputs, total
- Equal to or greater than 3 source documents

Consequently, **we recommend that the OPs shaded green in** Table 10**, above, be included in JTF-CS' final JMETL**.

We also suggest that OPs with characteristics beyond the median but within the middle 50% of the data set should be closely considered either for inclusion in the final JMETL or, at a minimum, for whether or not their central tasks are satisfied by activities accounted for elsewhere in the JMETL. The criteria for these "maybe" OPs (shaded yellow in Table 10are as follows:

- Greater than 6.7% but less than 35.1% word association-based inputs
- Less than 7 but greater than 2 "raw" source language-based inputs, total

[32] In some cases, an OP had a greater proportion of word association-based inputs than this, but also a relatively large total number of "raw" source language-based inputs. We therefore conducted an additional round of calculations to determine whether—absent *all* word association-based inputs (i.e., 0% word association-based inputs)—the OPs still had equal to or greater than 7 "raw" source language-based inputs. These adjusted figures are shown in the "Adjusted Total # Tasks" column in Table 11.

- 2 source documents

Most of these OPs are prevalent in a range of source materials and several exceed the median number of "raw" source language-based inputs. This suggests a strong association with and degree of consensus around JTF-CS' role in their execution. Given this, failure to account for and/or appropriately staff tasks in the following areas could increase risk to mission[33]:

- PIR/CIR development and maintenance (OP 2.6)
- Operational assessments (OP 3.1)
- transition to civil authorities, including site turnover and clearance criteria (OP 4.7)
- COMSEC, including physical security of comms systems, a.k.a. "secure lines of communication," and INFOCON measures (OP 6.3)
- critical infrastructure protection, particularly ICW host organizations, and force protection (OP 6.5)
- CBRN response (OP 7.4)[34]

Finally, given limited supporting evidence in available source documents as well as limited diversity of sources, **we amend our recommended inclusion of the OPs colored red in** Table 10 **in JTF-CS' JMETL**.[35-36]

[33] We identified these "central tasks" for each "maybe" OP by thematically coding the source language-based inputs under each. For example, the preponderance of source language-based inputs under OP 2.6 related in some way to PIR and/or CIR development and/or maintenance. For this reason, the name of the OP and the "central task" we identify here may be distinct (e.g., "conduct targeting" (OP 3.1) ≠ "operational assessments", but the underlying source language-based inputs—which are aligned with OP 3.1 using key words from the UJTL—suggest this is a critical component of its execution).

[34] We note that this OP aligns with another divergent, staff-selected OP (OP 7.9, "Execute Chemical, Biological, Radiological, and Nuclear (CBRN) Response"). We therefore opted to retain the staff selected OP, assuming that these activities will be accounted for within it.

[35] Among these is a staff-selected OP (5.9) that we found limited evidence of in the source document-based task language.

[36] Any "matches" in Table 10 indicate points of agreement between CNA's initial analysis and the analysis conducted by the JTF-CS staff. Thus, while our refined evaluative criteria alone may not support their inclusion (see Table 11), the additional evidence of their significance suggested by a "match" leads us to recommend their retention in the final JMETL.

Appendix C: Delphi Data Call

Originally developed in the 1950s to forecast technological effects on warfare, the Delphi method is now more broadly used to leverage SME knowledge and estimate future requirements. This method requires iterative polling of SMEs, but otherwise has no set design parameters. The number of respondents can range from several to hundreds, over the course of two survey rounds or ten, conducted in-person or electronically [21]. Typically, the first round of Delphi questions are open-ended, generating content that is then subsequently evaluated using Likert-style responses until consensus is reached. Responses are usually anonymous so as to "reduce the effects of dominant individuals" and consensus is measured using the following indicators [21] :

- **Interquartile range (IQR)**. This measure of statistical dispersion tells us how wide the middle half of the data set is (i.e., from the 25th percentile to the 75th percentile). An IQR indicative of broad consensus would be less than or equal to one.
- **Standard deviation (S-DEV)**. This is a measure of how dispersed the data is relative to the mean. The higher the standard deviation, the more spread out the data is. A standard deviation indicative of broad consensus around the mean would be less than or equal to 1.5.
- **Percent of respondents selecting top two Likert values.** This measure indicates whether a simple majority (i.e., > 50 percent) of respondents agreed with the group-generated answers to each question. [21] In this appendix, we describe the design parameters chosen for our Delphi data call and the results of that effort.

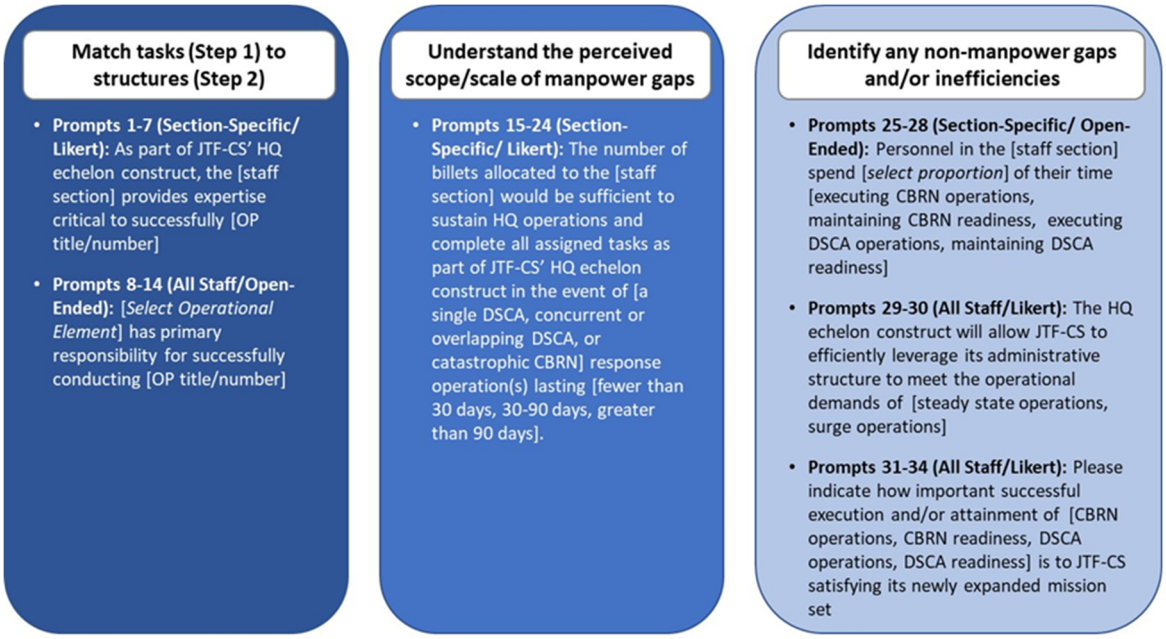
Design parameters and Delphi execution

The primary objectives of issuing a Delphi data call to the JTF-CS staff were as follows:

1. Gather additional data on how to match the tasks identified in Step 1 of our analysis to the structures identified in Step 2
2. Understand the perceived scope and scale of manpower gaps, a prominent theme in our SME discussions to date, and
3. Identify any non-manpower gaps and/or inefficiencies related to the HEC

With these objectives in mind, we generated an initial round of prompts (see Figure 7)—along with a "README" tab and glossary of key terms—in an Excel workbook.

Figure 7. Round 1 Delphi Prompts by Objective



Source: CNA.
Note: Each series of prompts (e.g., 1-7, 8-14) contained one or more elements that were iterative adjusted to generate the full range of prompts. These are indicated in brackets, above. So, for example, the name of the staff section and the title/number of the OP in question were adjusted for prompts 1-7, so that each of the prompts in the series (e.g., 1, 2) read slightly differently (e.g., "As part of JTF-CS' HQ echelon construct, the Command Group provides expertise critical to successfully conducting operational movement and maneuver (OP 1)", "As part of JTF-CS' HQ echelon construct, the Command Group provides expertise critical to the successfully providing operational intelligence, surveillance, and reconnaissance (OP 2)"). Because of these iterative adjustments, some prompts (i.e., those with "[staff section]") ended up being section-specific while others remained applicable to the entire JTF-CS staff. These differences, along with the type of response (i.e., Likert scale or open-ended) are indicated in parentheses next to the prompt range.

As shown, some of the prompts were open-ended, as is typical of the Delphi method. For example, respondents were presented with the prompt "[*Select Operational Element*] has primary responsibility for successfully conducting operational movement and maneuver (OP 1)." and asked to select from a drop-down list of possible responses (e.g., IST-O, IST-S, IST-C). However, in other cases, we had already generated a hypothetical answer to the question at the center of our prompt based on SME discussions and exercise observations. In these cases, we instead presented a completed prompt and asked respondents to gauge their level of agreement using a customized Likert scale. For example, respondents were presented with the prompt "As part of JTF-CS' HQ echelon construct, the [staff section] provides expertise critical

to successfully conducting operational movement and maneuver (OP 1)." and asked to select their level of agreement from a drop-down list of Likert responses (e.g., strongly agree, agree, slightly agree).

Prior to finalizing the Round 1 workbooks for each staff section, we reviewed our draft version with the sponsor POCs on 14 November 2022 to ensure clarity and ease of use. Following this review and subsequent generation of staff section-specific workbooks, Commander, JTF-CS issued a formal data call to his staff on 16 November 2022. Each section lead was asked to encourage maximum participation from their personnel and was given 48 hours to compile their responses. Completed workbooks were then returned to the sponsor POC, who uploaded them to a shared IntelDocs folder where we retrieved them for post-processing. At the conclusion of the first round of data collection we had received 66 discrete and complete workbooks (i.e., not counting blank or duplicate workbooks), representing a 48 percent participation rate for the staff.[37]

In order to generate the workbooks required to conduct a second round of data collection, we first had to calculate the results from Round 1. These are depicted in Table 13, below.

Table 13. Round 1 Delphi Responses

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]	Most Common Response[c]
1	CMD	5	0	0.0	100%	-
	SST	5	1	0.53	100%	-
	J1	5	0.5	0.58	60%	-
	J2	6	0.25	0.50	100%	-
	J3	6	0.25	1.17	92%	-
	J4	5	1	0.52	100%	-
	J5	5	0	1.33	89%	-
	J6	6	1	1.01	94%	-
2	CMD	5	0	0.00	100%	-
	SST	5	1	0.50	100%	-
	J1	3	1.5	1.53	20%	-
	J2	6	0.25	0.50	100%	-
	J3	4	1	0.98	33%	-
	J4	4	2	1.36	38%	-
	J5	4	1	1.51	67%	-
	J6	5	1	1.24	76%	-
3	CMD	4	0	0.00	0%	-

[37] We calculated this participation rate using the number of filled billets in each staff section as of our interim deliverable (N=137). However, we acknowledge that the proximity of this round of data collection to the Thanksgiving holiday likely contributed to greater than normal numbers of staff being on leave and, thus, unable to participate in the data call.

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]	Most Common Response[c]
	SST	5	1	2.12	78%	-
	J1	4	1	1.00	20%	-
	J2	3	2.25	1.50	25%	-
	J3	4	3	1.45	42%	-
	J4	3	2.25	1.77	25%	-
	J5	4	1	1.22	44%	-
	J6	5	2	1.25	71%	-
4	CMD	5	0	0.00	100%	-
	SST	6	1	0.50	100%	-
	J1	5	1	0.55	100%	-
	J2	4	2	1.15	50%	-
	J3	4	0.25	0.75	25%	-
	J4	6	0	0.35	100%	-
	J5	4	1	1.39	56%	-
	J6	5	1	1.07	88%	-
5	CMD	4	2.5	3.54	50%	-
	SST	5	1	1.12	78%	-
	J1	6	0.5	0.58	60%	-
	J2	4	1.25	0.96	25%	-
	J3	6	0	0.39	100%	-
	J4	5	0.25	0.46	100%	-
	J5	5	2	1.30	67%	-
	J6	6	0	0.99	94%	-
6	CMD	5	0.5	0.71	50%	-
	SST	6	1	0.53	78%	-
	J1	4	1.5	1.73	40%	-
	J2	5	0.25	0.50	75%	-
	J3	6	1	0.67	92%	-
	J4	4	2	1.20	38%	-
	J5	4	0	1.09	22%	-
	J6	5	2	1.27	71%	-
7	CMD	5	0	0.00	100%	-
	SST	4	1	1.24	44%	-
	J1	4	2.5	2.65	40%	-
	J2	4	1.25	0.96	50%	-
	J3	5	2	1.44	67%	-
	J4	3	3	1.75	38%	-
	J5	4	0	1.66	78%	-
	J6	5	2	1.52	65%	-
8	N/A	-	-	-	-	MCP-J
9	N/A	-	-	-	-	MCP-J/MCP-O
10	N/A	-	-	-	-	MCP-O
11	N/A	-	-	-	-	IST-S
12	N/A	-	-	-	-	FCE
13	N/A	-	-	-	-	MCP-J
14	N/A	-	-	-	-	MCP-J/MCP-O

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]	Most Common Response[c]
15	CMD	3	0.5	0.71	0%	-
	SST	3	3	1.76	11%	-
	J1	5	1	0.55	100%	-
	J2	4	1.75	1.89	50%	-
	J3	5	0	0.62	83%	-
	J4	4	1	0.52	38%	-
	J5	5	1	0.87	78%	-
	J6	3	3	1.60	29%	-
16	CMD	3	0.5	0.71	0%	-
	SST	2	2	1.36	11%	-
	J1	5	0	0.00	100%	-
	J2	2	0.5	0.82	0%	-
	J3	4	2	1.24	50%	-
	J4	3	1	1.19	13%	-
	J5	5	1	0.50	67%	-
	J6	2	3	1.42	6%	-
17	CMD	3	0.5	0.71	0%	-
	SST	2	1	1.39	11%	-
	J1	5	1	0.55	60%	-
	J2	1	0.25	0.50	0%	-
	J3	4	2	1.54	50%	-
	J4	3	2	1.36	13%	-
	J5	4	2	0.87	33%	-
	J6	2	2	1.30	6%	-
18	CMD	3	0.5	0.71	0%	-
	SST	2	1	1.32	11%	-
	J1	4	3	1.64	60%	-
	J2	2	0.75	1.50	0%	-
	J3	5	0	0.89	83%	-
	J4	3	2	1.25	13%	-
	J5	3	1	1.01	11%	-
	J6	3	3	1.74	24%	-
19	CMD	3	0.5	0.71	0%	-
	SST	2	1	1.01	0%	-
	J1	3	3	1.52	40%	-
	J2	1	0.25	0.50	0%	-
	J3	4	2.25	1.31	42%	-
	J4	2	0.5	1.28	13%	-
	J5	3	1	0.93	11%	-
	J6	2	2	1.20	0%	-
20	CMD	3	0.5	0.71	0%	-
	SST	1	0	1.01	0%	-
	J1	3	3	1.64	40%	-
	J2	1	0	0.00	0%	-
	J3	3	3	1.66	42%	-

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]	Most Common Response[c]
20	J4	2	0	1.41	13%	-
	J5	2	1	0.73	0%	-
	J6	2	1	1.09	0%	-
21	CMD	3	0.5	0.71	0%	-
	SST	2	1	1.32	11%	-
	J1	5	0	0.45	80%	-
	J2	2	0.5	1.00	0%	-
	J3	4	1.25	1.40	67%	-
	J4	4	0.25	0.46	25%	-
	J5	4	1	1.80	56%	-
	J6	3	2	1.51	18%	-
22	CMD	3	0.5	0.71	0%	-
	SST	2	1	0.53	0%	-
	J1	4	1	0.89	60%	-
	J2	1	0.25	0.50	0%	-
	J3	4	3	1.51	42%	-
	J4	3	2	1.31	13%	-
	J5	3	1	1.36	11%	-
	J6	2	3	1.45	6%	-
23	CMD	3	0.5	0.71	0%	-
	SST	1	0	0.44	0%	-
	J1	4	3	1.64	60%	-
	J2	1	0	0.00	0%	-
	J3	3	3	1.70	42%	-
	J4	3	2.25	1.49	13%	-
	J5	3	1	1.01	0%	-
	J6	2	2	1.09	0%	-
24	CMD	2	1	1.41	0%	-
	SST	2	0	1.67	11%	-
	J1	3	4	2.00	40%	-
	J2	1	0	0.00	0%	-
	J3	3	3	1.47	33%	-
	J4	2	1	1.36	13%	-
	J5	2	1	1.45	11%	-
	J6	2	1	1.07	0%	-
25	CMD	2	0	0.00	0%	-
	SST	2	2	0.93	0%	-
	J1	1	0	0.45	0%	-
	J2	2	0.25	0.50	0%	-
	J3	2	0	1.03	8%	-
	J4	3	1.25	1.30	13%	
	J5	3	2	1.17	44%	-
	J6	3	3	1.67	35%	-
	CMD	4	0	0.00	100%	-
	SST	3	1	0.83	22%	-

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]	Most Common Response[c]
26	J1	1	0	0.45	0%	-
	J2	2	0.25	0.50	0%	-
	J3	4	0	0.29	92%	-
	J4	3	2	1.13	38%	-
26	J5	3	1	0.87	56%	-
	J6	4	3	1.31	47%	-
	CMD	4	1	1.41	50%	-
	SST	3	1	0.83	22%	-
	J1	2	0	0.45	0%	-
27	J2	2	0.25	0.50	0%	-
	J3	2	0.25	0.79	17%	-
	J4	3	1	0.99	13%	-
	J5	3	2	0.93	33%	-
	J6	3	2	1.22	47%	-
	CMD	3	1	1.41	50%	-
	SST	3	1	0.83	44%	-
	J1	2	0	0.45	0%	-
28	J2	2	0.25	0.50	0%	-
	J3	4	0	0.78	83%	-
	J4	3	1.25	1.07	25%	-
	J5	3	2	1.00	44%	-
	J6	3	2.25	1.29	41%	-
29	N/A	5	1	1.22	79%	-
30	N/A	4	3	1.68	58%	-
31	N/A	5	0	1.00	88%	-
32	N/A	5	0	1.00	88%	-
33	N/A	5	1	0.73	92%	-
34	N/A	4	1	1.03	82%	-

Source: CNA.

[a] We assigned values to each of the Likert scales used in the data call, with higher values correlating with more agreement, frequency, and/or importance. For example, on our 6-point "strongly agree" to "strongly disagree" scale, "strongly agree" was valued at 6, "agree" at 5, and so on down to "strongly disagree" at 1. This allowed us to calculate the average response as well as our other indicator values (i.e., IQR, S-DEV).

[b] While the standard indicator here is a value greater than 50 percent of respondents selecting the top two values (in our case, indicating agreement, high frequency, or high value), we also considered whether greater than 50 percent of respondents selected the lowest two values, since this also indicated consensus, albeit around the opposite of the prompt. Thus, in cases where the other indicators met our established thresholds and where a majority of respondents selected *either* the top two or the bottom two options, we considered consensus to be established and shaded the associated cells green.

[c] Prompts 8-14 did not lend themselves to valuation, since the response options were not scaled (i.e., all operational elements are created equal). For this reason, in Round 1, we simply looked for the most frequently selected operational element for each prompt, as indicated in this column. Where multiple elements are indicated, an equal number of respondents chose each.

Since consensus had already been reached on many of the prompts in the first round of data collection (see green shading in Table 13, we opted to omit these prompts from Round 2 of the data call. Instead, we focused Round 2 on moving toward consensus on those prompts that remained contentious and on those prompts that had not yet been rated (i.e., those that were open-ended in Round 1). The resultant list of prompts was different for each staff section, since some had arrived at consensus on more of the Round 1 prompts than others. However, the content of the prompts themselves remained the same. The main difference between Round 1 and Round 2—aside from there being fewer overall prompts—was that in Round 2 respondents were presented with the average response from Round 1 as well as a graphical depiction of the overall distribution of responses. They were then asked to rate their level of agreement with the average Round 1 response using Likert-style drop-down options (e.g., "strongly agree", "agree"). An example of a Round 2 prompt is shown in Figure 8, below.

Figure 8. Example of Round 2 Delphi Prompt

Prompt	*Average Response*	*Response Distribution*
The HQ echelon construct will allow JTF-CS to efficiently leverage its administrative structure to meet the operational demands of surge operations (i.e., multiple, concurrent and/or overlapping DSCA response operations or catastrophic CBRN response operations)	Agree	

Source: CNA.

Again, before finalizing the Round 2 workbooks for each staff section, we reviewed the Round 1 results and proposed Round 2 format with our sponsor POCs on 28 November 2022. Following this review and subsequent generation of staff section-specific workbooks, the sponsor POC issued another formal data call to the section leads on 29 November 2022. They were again given 48 hours to compile responses from their cognizant personnel and provide them to the sponsor POC, who uploaded them to the shared IntelDocs folder. At the conclusion of this second round of data collection we had retrieved 75 discrete and correctly completed workbooks, representing a 55 percent participation rate for the staff.

Given the time and resources available to the study, we considered the results of this second round of data collection—shown in Table 14, below—to be final. Where disagreements remained, we used free form commentary collected in both Round 1 and Round 2 to identify common themes, discussed in greater detail below.

Table 14. Round 2 Delphi Responses

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]
2	J1	4	0.50	0.82	25%
	J3	4	1	0.96	45%
	J4	3	2	1.27	29%
	J5	5	0	0.35	100%
3	SST	5	1	1.86	82%
	J1	4	1.25	0.96	50%
	J2	3	2.25	1.5	25%
	J3	4	1	1.25	59%
	J4	3	3.5	1.91	43%
	J5	5	0.25	1.07	75%
	J6	6	1	0.51	100%
4	J2	5	0.25	0.5	75%
	J3	4	1	1.14	50%
5	CMD	6	0	0.00	100%
	J2	5	0.75	1.26	75%
	J5	6	1	0.52	100%
6	CMD	4	1.25	0.96	50%
	J1	4	1.25	0.96	25%
	J4	4	1.5	1.25	29%
	J5	4	0.25	0.93	25%
	J6	6	1	0.51	100%
7	SST	4	0	0.83	18%
	J1	3	0.75	1.26	25%
	J2	5	0.5	1	75%
	J3	5	1.5	1.14	73%
	J4	3	3	1.60	43%
	J5	5	0.25	0.64	88%
	J6	5	1	0.51	93%
8	N/A	5	1.0	0.60	93%
9	N/A	5	0.0	1.10	75%
10	N/A	5	0.0	1.35	75%
11	N/A	5	0.0	1.03	76%
12	N/A	5	1.0	1.19	85%
13	N/A	5	0.0	0.93	75%
14	N/A	5	0.0	1.06	76%
15	SST	4	1.75	1.55	45%
	J2[c]	-	-	-	-
	J4	5	1	0.53	57%
	J6	5	1.5	1.54	73%
16	SST	4	2.5	1.58	55%
	J3	4	2	1.29	36%
	J4	3	2	1.27	29%
	J6	5	1	1.67	87%

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]
17	J3	3	2	1.40	18%
	J4	3	2.5	1.70	29%
	J5	4	1.25	1.06	25%
	J6	5	1	1.68	80%
18	J1	4	0.25	0.5	25%
	J4	3	2	1.27	29%
	J5	4	0.25	0.93	25%
	J6	5	1.5	1.07	73%
19	J1	4	0.50	1	25%
	J3	3	2	1.27	18%
	J5	4	1.25	1.07	25%
	J6	5	1	1.49	87%
20	J1	4	1.25	0.96	25%
	J3	3	2.75	1.63	23%
21	J3	4	1	1.17	45%
	J4[c]	-	-	-	-
	J5	5	0.25	0.74	75%
	J6	5	1	1.22	93%
22	J3	3	2.75	1.46	27%
	J4	2	1.5	1.40	14%
	J5	4	2.25	1.28	38%
	J6	5	1	1.51	87%
23	J1	4	0.50	0.82	25%
	J3	3	2.5	1.55	18%
	J4	3	4	2.19	43%
	J5	3	0.5	0.99	13%
	J6	5	1	1.64	87%
24	SST	4	3.5	1.91	55%
	J1	4	1.25	0.96	50%
	J3	2	2	1.40	14%
25	SST	4	0.75	1.26	64%
	J4	4	1.5	1.73	71%
	J5	5	0.25	0.64	75%
	J6	5	0.5	1.23	73%
26	SST	4	0	1.58	73%
	J4	4	1.5	1.46	71%
	J6	4	1	1.12	53%
27	CMD	6	1	0.58	100%
	SST	5	0	1.27	73%
	J4	5	0.5	0.49	71%
	J5	5	0	0.53	88%
	J6	4	1	1.12	53%
28	CMD	5	1.75	1.89	75%
	SST	5	0.75	1.57	73%
	J4	5	0	0.00	100%
	J5	5	0.25	0.64	75%
	J6	5	1.5	1.16	67%

Prompt #	Staff Section	AVG Response Value[a]	IQR	S-DEV	% R Top 2[b]
30	N/A	5	0	1.26	79%

Source: CNA.

[a] We assigned values to each of the Likert scales used in the data call, with higher values correlating with more agreement. For example, on our 6-point "strongly agree" to "strongly disagree" scale, "strongly agree" was valued at 6, "agree" at 5, and so on down to "strongly disagree" at 1. This allowed us to calculate the average response as well as our other indicator values (i.e., IQR, S-DEV).

[b] While the standard indicator here is a value greater than 50 percent of respondents selecting the top two values (in this case, indicating agreement), we also considered whether greater than 50 percent of respondents selected a different set of two values, since this also indicated consensus, albeit around a potentially weaker degree of agreement (or even possible disagreement). Thus, in cases where the other indicators met our established thresholds and where a majority of respondents selected *any* two options, we considered modified consensus to be established and shaded the associated cells yellow.

[c] While processing the Round 2 results, we discovered that these prompts had not been included in the staff section-specific workbook. We therefore lack another round of data in these cases and used only the Round 1 inputs in our final synthesis of findings.

Discussion of final results

We interpreted the results of the Delphi primarily through the lens of the guiding objectives depicted in Figure 7. As shown, the results of prompts 1-14 related most closely to our first objective, namely, to gather additional data on how to match the tasks identified in Step 1 of our analysis to the structures identified in Step 2. Taking the results from Table 13and Table 14together, we found that there was general consensus that *all* staff sections provided expertise critical to the execution of OP 1. Likewise, most staff sections indicated *some* amount of involvement in OP 4 and OP 5, though several did not reach clear consensus on these points (see yellow shading in Table 14. These results are depicted graphically in Table 15and formed the foundation of our Delphi inputs.[38]

Table 15. Staff Section Involvement in OPs (Delphi)

OP/Prompt #	CMD[a]	SST	J1	J2	J3	J4	J5	J6
1	✓	✓	✓	✓	✓	✓	✓	✓
2	✓	✓	o	✓	o	X	o	✓
3	o	X	o	X	o	X	o	✓
4	✓	✓	✓	o	o	✓	✓	✓
5	o	✓	✓	o	✓	✓	✓	✓
6	o	✓	X	✓	✓	X	o	✓

[38] We carried forward any check marks (i.e., areas where there was consensus around a *critical* or *lead* role for the staff section or operational element in OP execution) to populate the Delphi inputs.

OP/Prompt #	CMD[a]	SST	J1	J2	J3	J4	J5	J6
7	✓	○	X	○	X	X	○	✓

Source: CNA.

[a] A check mark for the staff sections here represents an area where consensus existed among cognizant personnel in Round 1 or Round 2 of the Delphi that the staff section plays a *critical* role in the execution of the associated OP (i.e., all three indicators of consensus met and "strongly agree" or "agree" selected when asked if staff section had a critical role in OP execution). A "○" represents a neutral zone, where Round 2 consensus indicated only slight agreement/disagreement with *some* role for the cognizant staff section in the associated OP (e.g., enabler, works in coordination with other staff sections, etc.). A blank indicates consensus that there is *no* role for the staff section in the associated OP. Finally, an "X" indicates an area where there is notable disagreement on the role of the staff section with regard to the OP.

In reviewing available Round 1 and Round 2 commentary, we note that several of the major points of disagreement related to the prompts themselves vice the staff's role in OP execution. Specifically, lingering disagreement on whether targeting (OP 3.1/prompt 3) or active and passive CBRN response (OP 7.2 and OP 7.3/prompt 7) fall within JTF-CS' mission set account for at least half of the failures to reach consensus in these areas. Based on subsequent analysis conducted independently of the Delphi, we concur with these comments and recommend that OP 3.1, OP 7.2, and OP 7.3 be omitted from JTF-CS' final JMETL.

Moving on to prompts 8-14—which concerned which *operational elements* had primary responsibility for executing each OP—we found that there was clear consensus around the following element-to-task pairings:

- MJP-J—OP 1, OP 2, OP 6, OP 7
- MCP-O—OP 3 (CBRN/OEAC; FoPro Cell; JIFC; FUOPS; JPG), OP 7 (CBRN/OEAC; JMOC)
- IST-S—OP 4
- FCE—OP 5

We also noted specific BC2WGs mentioned by Delphi respondents when selecting "MCP-O", indicated in parentheses above. Additionally, we found more limited support in the Delphi commentary for the following, additional element-to-task pairings:

- IST-O—OP 1, OP 6, OP 7
- MCP-J—OP 3, OP 5
- MCP-O—OP 2 (JIFC), OP 4 (JLOC; JMC/JSC), OP 6 (FoPro Cell; JPG)

In these cases, respondent comments suggested that the secondary MCP elements generally provided additional reach back support (OP 4/JLOC and OP 5) or else bench depth (OP 2, OP 3, OP 6) for the primary "lead" element. In contrast, comments indicate that a secondary role for IST-O provided greater access to operational forces (e.g., DCRF) and/or local partners.

Table 16. Operational Element Involvement in OPs (Delphi)

OP/Prompt #	IST-O[a]	IST-S	IST-C	FCE	MCP-J	MCP-O
1	○				✓	
2					✓	○
3					○	✓
4		✓				○
5				✓	○	
6	○				✓	○
7	○				✓	✓

Source: CNA.
[a] A check mark for the operational elements here represents an area where consensus existed among cognizant personnel in Round 1 or Round 2 of the Delphi that the element has primary responsibility for the execution of the associated OP (i.e., all three indicators of consensus met and "strongly agree" or "agree" selected when asked if element played a lead role in OP execution). A "○" represents areas where respondent commentary and a limited number of respondent selections suggest a secondary/supporting role for the associated element in OP execution.

Our next Delphi data call objective was to understand the perceived scope and scale of manpower gaps. As shown in Figure 6, prompts 15-24 focused on uncovering insights relevant to this objective. Specifically, these prompts asked respondents to indicate their level of agreement with the idea that their authorized billets would provide sufficient manpower to complete all of their tasking under the following conditions:

- Single DSCA event lasting <30, 30-90, or >90 days
- Concurrent DSCA events lasting <30, 30-90, or >90 days
- Catastrophic CBRN event lasting <30, 30-90, or >90 days
- Concurrent DSCA and catastrophic CBRN events

We found, in reviewing the results of Round 1 and Round 2 of the Delphi, that respondents generally *disagreed* with this premise across most of the conditions we presented. Further, we found that the extent of disagreement (i.e., from "slightly disagree" to "disagree" to "strongly disagree") increased commensurate with the duration of the event, suggesting that sustaining any kind of operations beyond 30 days would be problematic under the HEC model. Similarly, while a single DSCA or CBRN event appeared to be generally supportable at current manpower levels, concurrent or overlapping events—whether DSCA or DSCA and CBRN—were generally deemed to be unsupportable at current manpower levels.

Of note, we found that the strength of these sentiments varied somewhat across staff sections, with the J2, special staff, and J6 most pessimistic about the sufficiency of current manpower

across all conditions, while J1, J3, and J5 were *slightly* less pessimistic. For example, the J1 and J5 seemed more confident than the J2, special staff, or J6 that operations could be sustained beyond 30 days at current manpower levels, while the J3 seemed more positive about the ability to conduct concurrent DSCA operations. Despite these relative differences, all staff sections indicated *some* degree of disagreement with the idea that current manpower (even at 100% fill) would be sufficient to successfully employ the HEC for any length of time and/or in support of contemporaneous response operations. These insights serve as a key input to the finding that "critical task owners lack sufficient manning".

The final objective of our Delphi data call was to identify non-manpower gaps and/or inefficiencies related to the HEC. Prompts 25-34 focused on this objective, asking respondents to consider the proportion of their time spent on various subsets of the JTF-CS mission set (relative to their importance) and to indicate whether the HEC was an efficient means of translating JTF-CS' administrative structure into operationally capable elements. The former exercise (i.e., prompts 25-28 and 31-34) yielded limited insights, largely because staff consensus indicated that CBRN response operations and readiness activities were equally as important as DSCA response operations and readiness. Had there been differing levels of importance ascribed to any one of these mission subsets, we may have been able to identify places where staff sections were spending more time on less important activities. As it stands, we were able to make limited use of insights gained about the proportion of staff time spent on actual operations versus readiness generation/maintenance tasks.

Prompts 29-30, in contrast, yielded important insights into commonly held beliefs among the staff regarding HEC employment parameters. Specifically, we found that Delphi respondents generally felt that *operational* tasks would be executable during steady state operations—though they could potentially be completed more effectively/efficiently with more personnel than is typically available—but that some *administrative* or non-response focused activities might have to be suspended intermittently to do so. Likewise, we found that respondents general believed JTF-CS' tasks would be executable during surge operations *if* HEC tailoring minimized taxes on the MCP and *if* relationships with key enablers could be leveraged to augment the MCP.

In both cases, then, we saw no evidence of any "slack" in the system in terms of manpower. Instead, a common theme across both the steady state and surge prompts that additional fit/fill (i.e., to 100% of authorized billets), if not an increase in manpower, is required to realize the HEC, since the preceding admin structure was already thin before the introduction of additional C2 nodes and associated requirements. These insights, in turn, support several of the gaps and inefficiencies discussed in the body of the report.

Appendix D: SR23 Observations

SUDDEN RESPONSE is an annual JTF-CS crisis response exercise intended to build proficiency in providing DSCA in the event of a CBRN, or all-hazard mission. This exercise is designed to assure that JTF-CS is ready to execute their assigned DSCA mission with no-notice, anywhere in the United States.

SR23 was the latest iteration of this critical training and readiness event. It began on 6 December with a hurricane striking Mississippi, requiring a response from JTF-CS. While this response was ongoing, an IND detonated in Austin, TX on 8 December, leading to the mobilization of forward elements of the JTF-CS headquarters echelon concept. Specifically, the following operational elements deployed to Texas: FCE, IST-1, IST-C, and IST-S. At this point, the JTF-CS MCP at Fort Eustice, VA (FEVA) began operating under a 24-hour battle rhythm, with the JOC and BC2WGs manned around the clock. Then, on 12 December, while still engaged in the IND response in Texas and the DSCA response in Mississippi, US Army North (ARNORTH) notified JTF-CS of a notional catastrophic earthquake and tsunami in the Cascadia Subduction Zone. JTF-CS completed COA development for a DSCA response to this event prior to the end of the exercise on 13 December.

Two analysts from the study team observed SR23 from the MCP at FEVA. Our specific data collection objectives were as follows:

- To gather independent insights into real world resource-to-responsibility mapping
- To observe command relationships and C2 in practice
- To identify organizational gaps and challenges as they occurred in the exercise along with any staff responses to them, and
- To further refine insights gained from previous research (e.g., clarify Delphi commentary).

To achieve these goals, we observed the following BC2WGs[39], identifying the operational elements and/or staff sections in each who were critically contributing to or leading the execution of JTF-CS' OPs:

- Operational Environment Working Group

[39] We observed all of the BC2WGs on the SR23 battle rhythm but were not able to observe each meeting of each BC2WG due to the number of available observers relative to the number of meetings.

- Future Operations Working Group
- Joint Logistics Operation Center Working Group
- C4 Working Group
- Joint Personnel Processing Center Working Group
- Joint Medical Operations Center Working Group
- Information Management/Knowledge Management Working Group
- Joint Planning Group
- Commander's Update Board

We also attended the following battle rhythm events, documenting roles, responsibilities, decision points, communication flows, and other information related to the ability of JTF-CS to execute its mission throughout SR23:

- JOC shift change
- J6/S6 C4 Sync
- JFLCC, JTF-CS, JTF-TX, DCO Region VI Sync
- J3 Operations Sync
- SR23 DCRF TF Back briefs to JTF-CS
- Crisis Action Team (CAT) meetings

All battle rhythm events were held in a hybrid format, with some personnel meeting in person, at the FEVA MCP or in TX as part of the FCE, and other personnel joining via Teams, also from the MCP or FCE.[40] Slide decks were the primary means of communicating plans in advance of and/or in response to exercise events, with the CDRs CUB serving as the main decision-making venue. When not attending these battle rhythm events, we observed exercise execution from the MCP JOC and held informal discussions with staff SMEs to gain further insight into challenges related to the employment of the HEC.

Together, our exercise observations from these various vantage points served as a key input into our mapping of JTF-CS tasks to JTF-CS organizational structures. When compiling the

[40] Even when most communication for a particular battle rhythm event took place in person at the FEVA MCP, some members of the event joined virtually. This arrangement created some challenges for our collection of documents and our ability to ask clarifying questions (e.g., if the presenter joined virtually and pushed slides via Teams). However, it did not appear to cause any confusion or issues for JTF-CS personnel during the exercise, whose communications and C2 appeared to run smoothly overall.

exercise-based inputs into these tables, we leveraged both our observation notes and the following exercise products[41-42]:

- N+5 Briefing Earthquake
- N+5 IND Brief
- N+14 IND Briefing Update
- SR23 Earthquake COA Final Brief

In addition to providing data input for our calculations (data tables), our exercise notes and the reference materials listed above helped us to identify several areas where JTF-CS excelled in exercise execution. Specifically, we noted the following "sustains"[43] from SR23:

- Effective utilization of the HEC to quickly respond forward to an IND event while retaining **good continuity of command**. While this is not the first exercise that JTF-CS utilized the HEC, SR23 clearly **demonstrated that the HEC can meet the needs of a single CBRN response operation** and thus satisfy JTF-CS' "no fail" mission requirements.
- The JOC was particularly effective at **maintaining JTF wide situational awareness** and coordinating operations across staff sections and operational elements. The JOC accomplished this despite JOC personnel, at times, needing to step away to complete additional duties, such as sitting on the CAT. On a related note, there were several comments from personnel working in the JOC that the new facility at FEVA that the JOC occupies, with **wall-to-wall monitors displaying key content, was a positive development** in that it allowed them to maintain a better common operating picture.
- CAT personnel demonstrated a **detailed understanding of the capabilities and limitations of the HEC** and a **high level of proficiency integrating these into the**

[41] In addition to these SR23 products, we also reviewed and incorporated insights from slides documenting Turn 1 through Turn 3B of the 2022 Hurricane Rehearsal of Concept (ROC) Drill as well as from the VIBRANT RESPONSE 22 (Phase 1) Final Exercise Report and associated enclosures.

[42] Network security and access issues hindered document collection throughout the exercise. The command utilizes Microsoft Teams for most forms of communication and accessing the libraries of documents stored on this platform proved difficult for our observers. Even if documents could be viewed, downloading proved impossible in most cases. JTF-CS noted these issues (i.e., enabler computer access to JTF-CS systems; refine access to crisis planning resources; IM/KM file structure) as items to be addressed ahead of future exercises and/or operations. As a workaround for this particular event, we noted key documents throughout the exercise and asked that our sponsor POC provide them to us via email after its conclusion.

[43] This refers to an area where JTF-CS excelled in exercise execution and should *sustain* associated processes and practices in future events. An "improve", in contrast, is an area where JTF-CS struggled in exercise execution and may want to consider alternative approaches in future.

COA development process. In particular, the CAT demonstrated a thorough understanding of how the HEC could be adapted and leveraged to C2 simultaneous IND and DSCA events, though how long this arrangement could continue to operate was not explored at this exercise.

We also noted several areas where the JTF-CS staff or else the HEC itself appeared to be challenged by the SR23 scenario. These "improves" included:

- The **imbalance baked into the HEC—with four IST-Os but only one IST-S, IST-C, and FCE—was corrected in the course of pre-mission tailoring**. Specifically, when asked to respond to a second DSCA event simultaneous to the ongoing IND response, the CAT proposed a COA wherein a second IST-S would be stood up to provide sustainment for the IST-O being assigned to the second DSCA event. The **procedure for identifying personnel to man this second IST-S was ad-hoc** and resulted in increased and, ultimately, unsupportable manpower requirements (see below).
- The **capacity of the HEC appeared strained—if not exceeded—by the need for simultaneous IND and DSCA response operations**. The staff responded to this strain by eventually recommending a COA (accepted by the DCDR) to utilize C2CRE A/B instead of JTF-CS to C2 the DSCA response to the Cascadia Subduction Zone, while JTF-CS remained in TX for the IND response.[44]
- At one point in SR23, the FCE was simultaneously responsible for commanding and controlling three response operations (2 DSCA, 1 CBRN), spanning a broad geographic region and encompassing a wide variety of mission partners. In at least one case, the presence of a DSC would have allowed for the FCE to load shed, with the Texas DSC taking command of the CBRN response. Yet the **conditions necessary for the Texas DSC to take command of the Austin CBRN event were not explored** in detail prior to ENDEX.
- **Acceptable levels of personnel depletion at the MCP and within each staff section** to fill out forward operational elements **prior to critical loss of capabilities were not defined.** How long the MCP could continue to function at 24hr manning under various HEC COAs, with or without augmentation, was also not explored. However, based on

[44] Another COA considered, but ultimately not adopted, was for JTF-CS to C2 both the IND and DSCA events. In considering this COA, the staff acknowledged that it would increase risk to the execution of MCP activities, particularly the BC2WGs run by the smaller staff elements, if the FCE, IST-2, IST-C and an additional ad-hoc IST-S (IST-S2) were deployed to the Pacific Northwest, while keeping IST-1 and IST-S1 in place in Texas. Had this alternative COA been adopted, staff indicated that they would have requested augmentation at their FEVA MCP to backfill some of the manning required to deploy forward but noted that they were unsure of the likelihood of receiving this augmentation or its effectiveness given lack of specialized training or experience.

observed levels of manning, there did not appear to be enough staff to fill out all four IST-Os envisioned in the HEC design.[45]

- JTF-CS used MS Teams for almost all communication, planning, and IM/KM. Issues accessing this system for a command outsider (e.g., augment, enabler) could present challenges in the event of a real world CBRN or DSCA event. We observed that over the course of the exercise there were several times where MS Teams presented connectivity issues with some personnel struggling to log on or getting automatically logged off of some calls. This, in addition to our own struggles to gain access to documentation stored on MS teams raised questions about **potential gaps in IM/KM that could impact execution of OPs**.
- While the JOC appeared to effectively complete tasks throughout the exercise, there were some **evident concerns about mission creep within the JOC** and the potential for that to result in reduced effectiveness or efficiency. For example, whenever there was uncertainty in which staff section or operational element was responsible for an operational task, the J3 and/or JOC seemed the most likely to take responsibility for that task. This was particularly true of the CBRN-related tasks, given the presence of CBRN SMEs within the J3.

In comparing these observations with the JTF-CS generated lessons learned, we note overlap in the following areas:

- (OP 5.1.2) Manage Means of Communicating Operational Info: Data Management → *Improve* gaps in IM/KM resulting from the use of MS Teams
- (OP 5.1.2) Manage Means of Communicating Operational Info: JOC Video Wall → *Sustain* use of wall-to-wall monitors to display key content
- (OP 5.1.8) Execute C2 Procedures: Manning/Equipping/Task and (OP 4.4.7) Provide for Legal Services: Legal Support → *Improve* understanding (and documentation) of acceptable levels of personnel depletion at the MCP and within each staff section to fill out forward operational elements prior to critical loss of capabilities

We therefore suggest that JTF-CS prioritize improvements in these areas in particular ahead of future readiness exercises.

[45] However, given that the catastrophic events of SR23 would only have required the activation of two IST-Os, and based on comments from JTF-CS personnel about past exercises, there does not appear to be a scenario in which all four IST-Os would need to be deployed, barring a dispersed biological event similar to COVID-19, raising questions about whether the current HEC design is truly representative of likely operational requirements.

Appendix E: Supplemental Findings from Interim Report

JTF-CS plans and executes CBRN and DSCA response to save lives and provide temporary critical support to enable recovery. The command prepares to conduct all-hazards domestic response (e.g., hurricane, earthquake, pandemic) and habitually trains and exercises with the Federal Emergency Management Agency (FEMA), interagency partners, the National Guard, and other state and local partners. JTF-CS has developed and maintained critical relationships with these partners because response operations require coordination and the execution of authorities, as well as command and control (C2) for the federal forces (Title 10) and state actors (Title 32).

We baselined the current RRs of JTF-CS, by reviewing plans and orders and as noted, we found that generally, they were event specific but mission agnostic. Each described the general RRs of JTF-CS (among others) in the context of a specific event. However, we observed that the language used to describe the tasks that JTF-CS is expected to perform varied depending on the source document. To translate tasks described across these various documents into a common language, we sorted the "raw" source language into the closest matching Universal Joint Task List (UJTL) categories using key word and affinity-based matching.[46] We then determined the tasks associated with each source document and—by extension—each potential mission. The results are shown in Table 17.

[46] We first identified key words among the subtasks associated with each operational-level task (OP) in the UJTL. For example, underneath OP 1.1 (Conduct Operational Movement) we identified deployment, redeploy, airlift, reception, staging, onward movement, integration, JRSOI, and JRC as key words (from OP 1.1.1, OP 1.1.2, OP 1.1.2.1, OP 1.1.3, and 1.1.3.1). We then searched for these key words among the "raw" source language and flagged any matching rows of data. Of the 684 rows of "raw" source language–based tasks, we associated 499 with at least one OP. We then manually reviewed the remaining 185 rows of data and matched them to the closest associated OP using additional context clues from the source documents.

Table 17. JTF-CS operational-level tasks (OP) by source and mission

OP #	OP Title[a]	General		CBRN		Earthquake			Hurricane
		JTF-CS TACSOP	Branch Plan 3510 to CONPLAN 3500-21	OPLAN 3500-19	Branch Plan 3600 to OPLAN 3500	Caribbean All-Hazards Plan: Annex J	Branch Plan 3512 to OPLAN 3500	Branch Plan 3512 to CONPLAN 3500-21	USNORTHCOM CONPLAN 3500-14: Annex C, Appendix 1, Tab H
OP 1.1	Conduct Operational Movement	X	X	X	X	X	X		X
OP 1.2	Conduct Operational Maneuver and Force Positioning	X	X	X	X	X	X		
OP 1.3	Provide Operational Mobility	X		X	X		X		
OP 1.5	Control Operationally Significant Areas			X	X	X	X		
OP 1.6	Conduct Patient Evacuation			X		X			X
OP 2.1	Direct Operational Intelligence Activities	X		X		X			
OP 2.2	Collect and Share Operational Information	X		X	X		X		
OP 2.3	Process and Exploit Collected Operational Information			X					
OP 2.4	Produce Operational Intelligence and Prepare Intelligence Products	X		X	X	X			
OP 2.5	Disseminate and Integrate Operational Intelligence			X					
OP 2.6	Evaluate Intelligence Activities in the JOA	X							
OP 3.1	Conduct Joint Force Targeting	X	X	X	X	X	X		X
OP 4.1	Coordinate Supply of Arms, Munitions, and Equipment in the JOA			X	X	X		X	X
OP 4.2	Synchronize Supply of Fuel in the JOA							X	X
OP 4.3	Provide for Maintenance of Equipment in the JOA	X		X					

OP 4.4	Coordinate Support for Forces in the JOA	X	X	X	X	X	X	X	X
OP 4.5	Manage Logistic Support in the JOA	X	X	X	X	X	X	X	X
OP 4.6	Build and Maintain Sustainment Bases in the JOA	X	X	X	X	X	X		
OP 4.7	Provide Politico-Military Support to Other Nations, Groups, and Government Agencies		X	X					
OP 4.8	Acquire, Manage, and Distribute Funds		X	X					
OP 5.1	Acquire and Communicate Operational Level Information and Maintain Status	X	X	X	X	X	X		X
OP 5.2	Assess Operational Situation	X	X	X	X		X		
OP 5.3	Prepare Plans and Orders	X	X	X	X	X	X		
OP 5.4	Command Subordinate Operational Forces	X	X	X	X	X	X	X	
OP 5.5	Establish, Organize, and Operate a JTF	X	X	X	X		X		
OP 5.7	Coordinate and Integrate JIIM Support	X	X	X	X	X	X		X
OP 5.8	Provide Public Affairs in the JOA	X	X	X	X		X		
OP 6.1	Provide Operational Air, Space, and Missile Defense					X			
OP 6.2	Provide Protection for Operational Forces, Means, and Noncombatants		X	X	X	X		X	X
OP 6.3	Protect Systems and Capabilities in the JOA			X	X		X		
OP 6.5	Provide Security for Operational Forces and Means		X	X	X	X	X		X
OP 7.2	Coordinate Active CBRNE Defense in JOA			X					
OP 7.3	Coordinate Passive CBRNE Defense in JOA	X		X					
OP 7.4	Coordinate Consequence Management in JOA			X					

Source: CNA

[a] The UJTL delineates a common set of strategic-, operational-, and tactical-level tasks for use in the creation of Joint Mission Essential Task Lists. Organizations such as JTF-CS, responsible for the oversight of subtheater campaigns and other major operations, are considered operational-level in this schema. Given available time and resources, we opted to categorize the "raw" source language according to the second-highest level of operational task (i.e., OP X.X versus OP X.X.X or OP X.X.X.X), as listed here.
Note: The source documents used to generate this task list vary in their authorship and thus in their specificity regarding JTF-CS's tasking. This is perhaps most obvious in the case of Branch Plan 3512 to CONPLAN 3500-21 and CONPLAN 3500-14, both authored by NORTHCOM and suggesting relatively few tasks for JTF-CS. In the case of Branch Plan 3512, the potential for overlooking JTF-CS tasking because of high-level authorship is offset by the presence of two other lower-level source documents (i.e., JTF-CS's Branch Plan 3512 and FEMA's Caribbean All-Hazards Plan). However, we acknowledge the possibility that hurricane response tasks in particular may be underrepresented in our dataset because of the exclusive reliance on a NORTHCOM source document (CONPLAN 3500-14).

JTF-CS is responsible for a total of 34 operational-level tasks (OPs), either in the course of its day-to-day operations (i.e., "general" tasks) or in the course of CBRN or DSCA response operations. Most of these tasks relate to logistics or personnel support (OP 4.X series) and C2 (OP 5.X series). Perhaps unsurprisingly, we also found that the J4 and J3 staff sections were explicitly associated with the greatest number of OPs overall (18 and 16, respectively). In contrast, the J1 and J6 were mentioned only sparingly (3 and 8 times, respectively).

JTF-CS is generally responsible for 24 OPs regardless of the operation being conducted. Most of these tasks (19/24) are explicitly required for an all-hazards operation, whereas nearly all of them (23/24) are explicitly required for a CBRN operation. The remaining task (OP 2.6) can be conducted during CBRN or all-hazards operations but is not the focus of those—or JTF-CS's—efforts.[47]

Despite variations in language across associated source documents, upon mapping to the UJTL, we found that not many event-specific tasks exist for JTF-CS all-hazards operations. For example, all the tasks explicitly associated with hurricane response operations are also required of earthquake response operations. Likewise, whereas many earthquake response tasks (14/25) are not required for hurricane response operations, all but 2 of these tasks are required for a generic all-hazards mission (as described in Branch Plan 3600). Even one of the remaining two tasks—OP 2.1—is not exclusive to earthquake response operations; rather, it is also a general JTF-CS responsibility (per the TACSOP) as well as required of JTF-CS during CBRN operations. Just one task—OP 6.1—is exclusive to a specific type of all-hazards mission.[48]

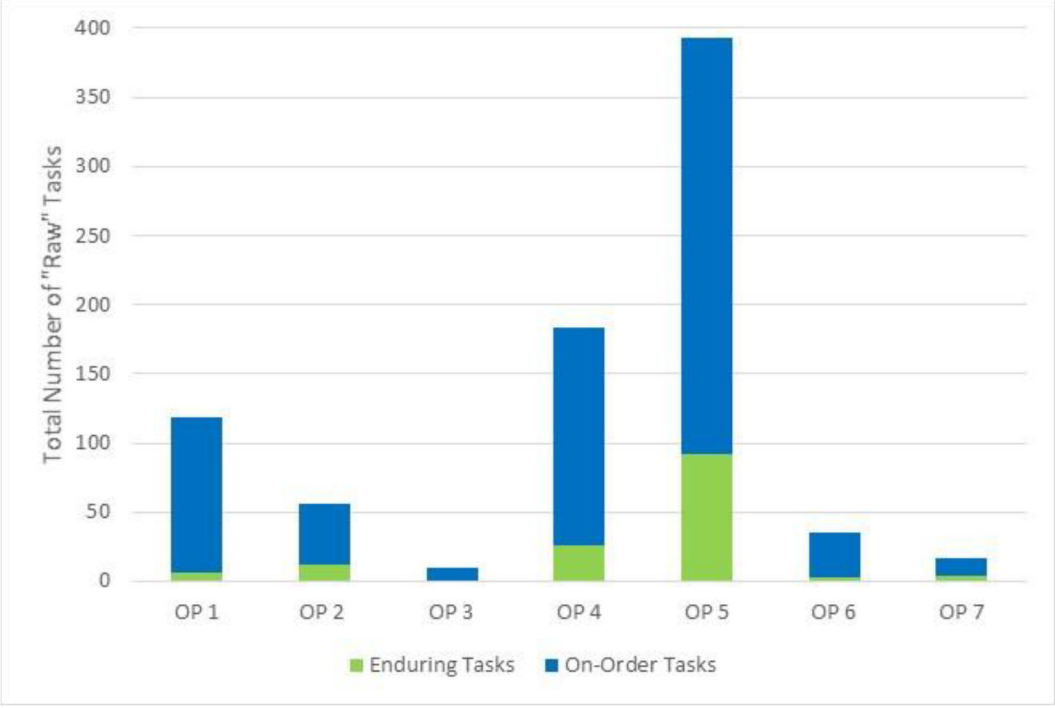
[47] The latter conclusion is based on the fact that only one subtask is associated with this OP, whereas others on our list have hundreds of related subtasks (i.e., tasks explicitly drawn from source documents).

[48] According to the Caribbean All-Hazards Plan, JTF-CS is responsible for "control[ing] airspace over/near affected areas" during earthquake response operations. Airspace control, in turn, is explicitly aligned with OP 6.1 in the UJTL.

In contrast, we did find several tasks unique to CBRN operations. Although most of the 31 OPs associated with CBRN operations are also generally required of JTF-CS and required for all-hazards response operations (19/31), 4 are specific to CBRN. Two of these are intelligence-related tasks (OP 2.3 and OP 2.5), suggesting a heightened role for the J2 in CBRN operations. The remaining two (OP 7.2 and 7.4) relate specifically to actively countering CBRNE weapons in the JOA, as opposed to passive measures (e.g., sustaining DCRF units, developing incident response plans) that are more generalizable to other JTF-CS mission sets.

To better understand the nature of the tasks, we categorized the "raw" source language–based tasks underneath each OP according to whether the task was enduring or conducted only on order from higher headquarters (HHQ). The results of this second round of analysis are depicted in Figure 9.

Figure 9. JTF-CS enduring versus on-order tasks



Source: CNA.
Note: Although most of JTF-CS's tasks are "on order," day-to-day operations emphasize preparation for these mission sets. In fact, according to some staff estimates, most day-to-day staff time (68 percent) is spent planning and training for such "on-order" tasking. [3] We acknowledge that these preparatory activities are not well-represented in the dichotomy depicted above and instead represent a potential third type of task.

As shown, we found that the vast majority of JTF-CS's tasks are conducted only on order from HHQ. The few enduring tasks relate primarily to maintaining situational awareness of potential all-hazards and CBRN events as well as the capabilities of forces required to respond to them (i.e., OP 5.1).

In sum, we found that JTF-CS currently has RRs aligned with CBRN and all-hazards DSCA missions, particularly earthquake and hurricane response operations. JTF-CS's common function across these missions is to provide C2 of DOD response forces. Despite varying descriptions of the tasks required to fulfill this function, a common set of 19 OPs does exist across general (i.e., non-response), CBRN, and all-hazards operations, and relatively few tasks are specific to a singular type of event. This suggests that adding the all-hazards mission set did not dramatically increase the number or diversity of JTF-CS's tasks. Instead, it increased the likelihood that JTF-CS would be required to execute these tasks across multiple response operations with consecutive, overlapping, or concurrent event timelines. Thus, although the vast majority of the requirements we uncovered are those that JTF-CS must be prepared to satisfy only in the event of a CBRN or DSCA incident, the added frequency of DSCA events could lead to greater confluence between "enduring" and "on-order" RRs.[49]

We note that we asked JTF-CS for any data that support our finding that all-hazards missions are more frequent than CBRN missions and that they possibly overlap or run concurrently over time. Furthermore, another potential outcome of the addition of the all-hazards mission set is an increase in the range of partnerships or relationships that JTF-CS is expected to maintain or work through during an event as well as localized variations in partner requirements based on unique environmental factors. This is something to explore further.

[49] In other words, before JTF-CS assumed the all-hazards mission set, its day-to-day activities consisted largely of satisfying enduring tasking, including monitoring and maintaining the readiness of its forces for infrequent "on-order" tasks. Now, given the frequency of all-hazards events, JTF-CS is almost always executing some subset of "on-order" tasks alongside enduring tasks, blurring the distinction between the two task categories.

Figures

Tables

Abbreviations

AAR	After Action Report
AOR	Area of Responsibility
ARNORTH	United States Army NORTH
BC2WG	Boards, Centers, Cells, and Working Groups
C2	Command and Control
C4SWG	Command, Control, Communication, and Computer Systems Working Group
CAT	Crisis Action Team
CBRN	Chemical, Biological, Radiological, and Nuclear
CDB	Commander's Decision Board
CONEMP	Concept of Employment
CONPLANS	Concept of Operations Plans
CPB	Commander's Planning Board
CPB	Commander's Planning Board
CUB	Commander's Update Board
CUOPS	Current Operations
DCE	Defense Coordinating Element
DHS	Department of Homeland Security
DOD	Department of Defense
DSCA	Defense Support to Civil Authorities
FCE	Forward Command Element
FEVA	Fort Eustis, Virginia
ForPro	Force Protection
FUOPS	Future Operations
Fu-Plans	Future Plans
HEC	Headquarters Echelon Concept
HHQ	Higher Headquarters
ICP	Incident Command Post
IND	Improvised Nuclear Device
IPC	Interagency Planning Cell
IST	Incident Support Team
IST-C	Incident Support Team-Coordination
IST-O	Incident Support Team-Operations
IST-S	Incident Support Team-Sustainment
JCCC	Joint Communication Control Center
JFHQ	Joint Force Headquarters
JIFC	Joint Information Fusion Cell
JIIM	Joint, Interagency, Intergovernmental, and Multinational

JIPOE	Joint Intelligence Preparation of the Operational Environment
JISE	Joint Intelligence Support Element
JLOC	Joint Logistics Operations Center
JMC/JSC	Joint Movement Center/Joint Sustainment Center
JMETL	Joint Mission Essential Task List
JMOC	Joint Medical Operations Center
JOC	Joint Operations Center
JOPES	Joint Operational Planning and Execution System Working Group
JPG	Joint Planning Group
JPOC	Joint Personnel Operations Center
JPPC	Joint Personnel Processing Center
JPRC	Joint Personnel Reception Center
JTD	Joint Table of Distribution
JTF-CS	Joint Task Force-Civil Support
JTMD	Joint Table of Mobilization Distribution
KM	Knowledge Management
KMWG	Knowledge Management Working Group
LNO	Liaison Officer
MA	Mission Assignment
MATO	Mission Assignment Task Order
MCP	Main Command Post
MCP-J	Main Command Post-Joint Operations Center
MCP-O	Main Command Post-Other
MFT	Missions, Functions, and Tasks
NORTHCOM	United States Northern Command
OEAC	Operational Environment Assessment Cell
OP	Operational-Level Task
OPLANS	Operations Plans
OPR	Office of Primary Responsibility
OPT	Operational Planning Team
OT3	Organizational Troop-to-Task (Wargame)
PAC-MAN	Public Affairs Cell-Media Assistance Node
PAO	Public Affairs Officer
PAX	Passenger or (our use) Personnel
PECC	Patient Evacuation Coordination Center
RFF	Request for Forces
ROC	Rehearsal of Concept
SA	Situational Awareness
SJA	Staff Judge Advocate
SME	Subject Matter Expert
SR23	SUDDEN RESPONSE 2023
SST	Special Staff

TACSOP	Tactical Standard Operating Procedures
TRANSCOM	United States Transportation Command
TRX WG	Training and Exercise Working Group
UJTL	Universal Joint Task List
VR22	VIBRANT RESPONSE 2022

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