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The U.S. Air Force Diversity, Equity, and Inclusion Values on Social Media

A Proof-of-Concept Examination of How Air Force–Affiliated Accounts Represent the Service Online

KEY FINDINGS

- Across multiple platforms, U.S. Air Force (USAF)-affiliated social media (SM) users generally avoided the use of offensive language, slurs, and hateful speech.

- On many of the rare occasions when users posted offensive terms, they were generally referring to third parties having those terms deployed against them, not using those terms on others.

- There was some pushback against diversity, equity, and inclusion (DEI) policies on U.S. Air Force Enlisted Forums (USAFEF) and Reddit, but it was generally civil and constructive.

- The USAF community on Twitter rarely discussed USAF-related issues, policies, or leadership. While there were discussions of leadership that were DEI-focused, these were relatively rare.

- The USAF community on Twitter is politically polarized.

- Analyzing SM behavior is an inexpensive way to understand USAF community discourse and behavior.

This report presents the findings of an exploratory effort to describe the online behavior of social media accounts that appear to be affiliated with the U.S. Air Force (USAF). We demonstrated a low-cost, quick approach to assess how social media (SM) use by those who self-identify as part of the wider Air Force community (members, veterans, and family) reflects USAF service values online. Given recent events, we decided to assess such online behavior through a diversity, equity, and inclusion (DEI) lens: Do USAF-affiliated users act online in ways that reflect USAF service values? The USAF explicitly mandates that airmen must maintain loyalty to the Air Force's core values and standards and maintain professionalism and respect for others regardless of race, color, religion, gender, national origin, age, disability, or sexual orientation. This respect for

others not only involves personal interaction, but also extends to communications and interactions in social media and cyberspace.[1]

In essence, we used scalable analytics to ask whether the above mandate is being met on public SM, specifically looking for evidence of objectionable language disrespectful to others.

What we found was welcome news: USAF-affiliated users rarely used words that clearly showed disrespect for others based on their identity or social group. While our data-driven methods have difficulty identifying more-nuanced hateful discourse across multiple sentences without clear keywords,[2] may have included posts by some users who falsely claim a USAF affiliation, and cannot access private digital spaces, we were able to find evidence that, at least in public, airmen only rarely use slurs or other distinct hate speech terms.[3] Furthermore, we found that, at least on public forum pages, airmen often (though not always) discussed these issues using words that suggested an attempt to have a respectful and thoughtful conversation.[4]

Additionally, we point out that our proof-of-concept approach could be easily adopted by the Air Force Public Affairs Agency. While we found that USAF-affiliated users have overwhelmingly represented the service's values in their online behavior, observing USAF-affiliated users' conduct over SM could provide the Air Force with critical early warning of emerging problems. Further, because our approach is an aggregate one that does not highlight individuals, it respects the privacy and free speech

rights of members, veterans, and other affiliated SM users and would allow the Air Force Public Affairs Agency to do the same.[5]

How We Found and Studied USAF-Affiliated Online Behavior

We studied two kinds of SM data: moderated online fora and Twitter. The two fora that we collected data from are r/AirForce (a popular community on Reddit) and the U.S. Air Force Enlisted Forums (USAFEF),[6] a popular online discussion board that bills itself as "A meeting place for enlisted Airmen, Past, Present, and Future." As of September 2021, Reddit was among the top 20 sites in the world in terms of traffic and engagement. R/AirForce represents a large community dedicated to discussing Air Force-related topics. While it is less broadly visited, USAFEF is one of the oldest forums for the Air Force enlisted community. Note, however, that we cannot verify the identity or authenticity of posters at either site.

Twitter gave us the opportunity to observe the behavior of USAF community members in a more public setting. We restricted our query to accounts that self-identified as USAF-affiliated via a Boolean keyword search. We were unable to verify the actual relationship between the account holder and the USAF, though we note that any account that claims Air Force affiliation could still cause a public scandal for the USAF. This community included many dependents and family members of USAF personnel, and, unlike the fora discussions, conversations among this community were not generally focused on USAF-related issues. Note, too, that while Twitter lacks the built-in community moderation system of Reddit or USAFEF, it does employ moderators to remove objectionable content, which may help account for the lack of hateful speech that we observed. Users may also report content that they find objectionable, which may be removed by moderators.[7]

Our choice to include veterans and dependents was deliberate: While service policy applies only to members, the actions of all USAF community members can affect public perceptions of the Air Force. As

the Marines United scandal on Facebook shows,[8] the online behavior of associated personnel (e.g., veterans), as well as members, can bring discredit to the service. Because online space, such as USAF-centric fora and conversations on Twitter, can include the wider USAF discourse community, we saw value in a wider net for data collection. Our data collection windows were determined by the posts available online or through Brandwatch, the third-party company that we used for data extraction. We analyzed USAFEF data back to 2011, Reddit data to 2016, and Twitter data to 2018.

Findings and Recommendations

In our sample, we found relatively few instances of USAF-affiliated users speaking disrespectfully of others based on group affiliation or identity. As an illustrative example, in the past three years a particularly offensive racial slur for blackness occurred in 0.0031 percent of tweets by USAF-affiliated accounts on Twitter (that is 2,371 times out of 53.9 million tweets in the dataset).[9] We found a much lower rate of usage (0.0001 percent) for our Air Force Enlisted Forums data, which extends back ten years. Other racial slurs were present in similar or smaller frequencies and proportions. Slurs against women were slightly more prevalent in the Twitter data but still quite rare. *To put these rates in context, slurs or other disrespectful language around affiliation or identity were so rare as to be undetected by inductive text analysis methods.*[10] Because this language was not statistically significant or meaningful as patterns within our data, we switched to a top-down a priori method. We consulted a panel of USAF subject-matter experts (SMEs)[11] for a set of terms (including coded terms)[12] indicating disrespect for dehumanization of others based on group or identity and searched for these terms specifically. Switching from an inductive text analysis approach to searching for specific terms resulted in finding some cases of objectionable and problematic language.

Note that for ease of reading, we have decided to discuss our research methods in more detail after stating our findings. Those interested in those meth-

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ods can refer to the data and methods section of this report.

Findings

In the following section, we present our main findings. Two limitations in reporting these findings are (1) a desire to protect individuals' privacy, and (2) sensitivity around offensive language. While the social media data that we analyzed is public, to protect individuals from internet searches that might reveal their identity, we do not quote any of the data we analyzed. Additionally, our analysis involved searching for language showing disregard for USAF principles regarding respect for others—in particular, offensive language around group or personal identity. Such language is a sensitive issue, and indexing it may be prone to misinterpretation; we have therefore chosen not to directly list slurs that we searched for. In our analysis, we found the following:

- **Across multiple platforms, USAF-affiliated SM users generally avoided the use of offensive language, slurs, and hateful speech.** We searched for terms that dehumanized or disrespected other people based on (perceived) race/ethnicity and sexual orientation. Such racist, homophobic, or xenophobic talk did not break thresholds of significance or effect size in standard text analyses, while an aggregated search for a range of SME-provided terms appeared at a rate of 0.04 percent. Gen-

While slurs were present in the data, they were usually used in discussions of their use by a third party.

dered slurs against women were somewhat more common in our Twitter data but still less than 0.04 percent. Keyness (word overpresence) tests and in-context views show that these words are not always used in hostile ways. For example, a word that, when used as a noun, is an offensive reference to a woman was also used frequently as a verb *to complain*. While that may not be professional speech, it is qualitatively different from calling another person a slur. We note that, while these rates are small in an absolute sense, we do not have a baseline for comparison, and the Air Force may benefit from research establishing a baseline of how a demographically comparable civilian population talks online (we do not mean that there is an acceptable or normal amount of unprofessional behavior, but rather to give context and scale for rates).

- **On many of the rare occasions when users posted offensive terms, they were generally referring to third parties having those terms deployed against them, not using those terms on others.** Our text analysis found that words and phrases regarding the use of slurs by others—words such as *called* and *say*—were overpresent, while words used to apply a slur directly (you're, you are) were underpresent. So, while slurs were present in the data, they were usually used in discussions of their use by a third party.

- **There was some pushback against DEI policies on USAFEF and Reddit, but it was generally civil and constructive.** Concerns were voiced about the amount and efficacy of new DEI-related training, with users expressing concern that DEI training was politically motivated, with phrases like *political correct-*

ness occurring (but still well below significance and meaningfulness thresholds). We note that other users did not always agree with these critiques and pushed back.

- **The USAF community on Twitter rarely discussed USAF-related issues, policies, or leadership.** While there were discussions of leadership that were DEI-focused, these were relatively rare. Major DEI-relevant political events, such as the death of George Floyd and the rise of the Black Lives Matter movement, had a major impact on USAF community discourse,[13] but the discussion there was broadly about U.S. politics, not USAF policy or leadership. Those discussions of the USAF and its policies that we found focused on work, training, promotions, politics, and veterans' affairs. For greater detail on the conversation about USAF policy changes and speeches, see Appendix B.

- **The USAF community on Twitter is politically polarized.** We found that users on Twitter discussing contested issues—for example, wearing such religious garb as hijab—was highly polarized. By *polarized*, we mean split into opposed camps, with diametrically opposed opinions. But we note that political polarization and incivility over politics is not a DEI issue but rather one that reflects the free speech rights of service members and their affiliates.

- **Analyzing SM behavior is an inexpensive way to understand USAF community discourse and behavior.** Our proof-of-concept effort shows that collecting and analyzing public social data requires a low level of effort and investment. This approach examines the online USAF community's language as

a whole and does not monitor or censure individuals, does not infringe on free speech rights, and is likely to be more culturally acceptable to the American public than individual-based approaches. It has the potential to provide USAF public affairs personnel with the ability to gauge public problematic behavior in real time, both to manage potential crises and to help tailor or assess future Air Force DEI policies.

In addition to searching for overtly racist or sexist speech, we were able to do some deeper analysis of the themes often brought up in USAF community posts and tweets that mention African Americans or Muslims. Politics seems to have been a major topic of discussion, as were DEI-related issues. Radical Islam was also frequently mentioned in posts mentioning Muslims. This work was exploratory in nature and not directly related to our search for clearly inappropriate speech, but we include it to demonstrate other capabilities of our methods. For more details, see Appendix C.

Recommendations

Based on our findings, we recommend that the Department of the Air Force consider the following actions:

- **Evaluate a range of possible approaches to monitoring USAF and USAF-affiliate public online behavior.** For example, the approach used in our proof-of-concept would require relatively little investment to implement but has a number of limitations—e.g., the inability to distinguish authentic accounts from inauthentic accounts, such as bots and trolls, or USAF members from veterans or families. Other approaches could provide higher certainty but require more investment. In evaluating the costs and benefits of various approaches, we point out that online monitoring capabilities could address multiple concerns. For example, in addition to asking whether members are enacting Air Force values in their conduct from a DEI perspective, a robust monitoring capability could

be used to detect online behavior indicative of extremism. The following are example approaches that the Department of the Air Force might consider:

- *the approach detailed here, which is a low-cost way to regularly monitor USAF-affiliated public online behavior.* Our approach uses existing data collection and analysis methods that are inexpensive and easily implementable. The value to the Department of the Air Force would be situational awareness of any problematic behavior that rises to a level at which it might bring discredit on the service or harm military preparedness. Our approach has serious data limitations, however, and cannot reliably identify authentic accounts from Air Force members.
- *analyzing other USAF policies.* Similar approaches could be used to analyze the USAF community's public online reactions to other policies. The same data limitations would apply, though, once again, this would be relatively inexpensive.

If USAF affiliates are acting in ways contrary to service values or expressing opposition to DEI policies and initiatives, it is likely behind digital closed doors.

– *machine learning–enabled approaches that offer more resolution and reliability in identifying specific accounts.* Advances in machine learning make it plausible to develop installation-specific models that reliably identify authentic accounts of service members. This is a more precise method that would require a higher level of resourcing.

– *trend-detection approaches for automatic monitoring and triaging.* Machine-learning approaches that reliably identify authentic accounts at the installation level could be aggregated and combined with current-generation language models and trend-detection algorithms to provide an online monitoring capability that would be both more precise (identifying service members) and more sensitive (finer-grained detection of problematic behavior).

– *Research to better understand private USAF-affiliated online behavior.* A serious limitation to our research is that we were able to analyze only public SM behavior. If USAF affiliates are acting in ways contrary to service values or expressing opposition to DEI policies and initiatives, it is likely behind digital closed doors. Qualitative research that unpacks the experience of members and veterans in such fora would be important situational awareness that would allow the Department of the Air Force to gain the initiative in improving the behavior and quality of such discourse.

Data and Methods

This section summarizes the ways in which we collected data and analyzed them to produce the findings presented above.

Data

We used two main sources to gather our data: the commercial SM service Brandwatch, and direct web scraping via application programming interface (API). Brandwatch is the world's largest digital intelligence and SM data vendor and is the RAND Corporation's primary source for SM data.[14]

Fora Data

When they seek to discuss USAF-related issues, many airmen turn to online forums, including r/AirForce, or USAFEF, an online forum first created in 2003.

- r/AirForce had about 162,000 members as of August 2021, and from July 2016 (when Brandwatch began collecting data) to August 2021, its contributors had produced about 2.56 million posts. Because this data set was so large, and the kind of language we were concerned with was so rare, we also used Boolean queries to create data subsets to examine specific cases: talk about (perceived) race/ethnicity, sex and gender, and religious identity; USAF policy and leadership; and political events (the murder of George Floyd, the rise of Black Lives Matter, and grooming and dress waivers based on religious exemptions). For specifics on these keywords, see Appendix C.

- To scrape USAFEF data, we used its built-in automated API, a structured way to query and download posts. We excluded a section of the forums known as "The Green Zone," which was reserved for incoming recruits, civilians, and family. The API allowed us to collect all posts from 2011 on—for a total of 123,977, from 1,772 unique users—into a single data set.

Note that both USAFEF and r/AirForce have official moderators, who can remove posts and have special administrative privileges. On Reddit, many of these moderators are themselves respected community members and posters who act as volunteers empowered by the subreddit creator.[15] We believe this oversight directly contributed to the civility seen on these platforms—particularly offensive posts are likely be removed by moderators; repeat offenders are likely to be banned from the forum; and, thus, users may choose to self-censor, knowing that they are unlikely to succeed in publishing offensive content. While Twitter also has terms of use, employs moderators, and allows users to flag content that may contain hate speech for possible removal, it lacks the sort of community-based monitoring found on USAFEF and Reddit. In the second half of 2020, Twitter took action against just over 1 million unique accounts for posting hateful content, including content removal or account suspension.[16] While this represents only a small percentage of overall Twitter accounts, such action could also lead to self-censorship, driving those who wish to engage in hateful discourse to nonpublic platforms.

Twitter Data

Analyzing Twitter data allowed us to look at online behavior on a much less moderated platform that is much less civil than the online, community-specific fora we analyzed. Discussions here were much more political and polarized along partisan political lines. To build a corpus of tweets from Air Force community members, we filtered for authors who mentioned "USAF," "Air Force," "Air Guard," "security forces," "air national," or "airbase" (non–case-sensitive) in their Twitter bios. We note that we had no way to verify USAF affiliation for these users. It is possible

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that some of the accounts we followed were, in fact, automated bots set up by foreign governments or other entities, which are known to use false accounts to spread divisive messages among American service members. That said, we note that there was a very low incidence of racial slurs, suggesting that if there were malicious bots in our data, they may have been commenting on other issues. As a validity check, approximately 1 percent of the tweets that we collected had georeferenced data, and they match up geographically with major USAF installations.[17] This resulted in a panel of about 26,570 authors who have produced about 80 million tweets from July 2018 to July 2021.[18] We include a more detailed explanation of how we collected our data in Appendix B.

While tweets are not directly moderated like the fora, tweets that egregiously violate Twitter's terms of service may be deleted, and users themselves may go back retroactively and delete their tweets. Tweets are monitored by Twitter employees or contractors and can be reported by other users. Some USAF community members discussing the use of slurs by others complained that temporary administrative action had been taken against their accounts. As a check against this problem of data being scrubbed before we could analyze it, we checked a subset of tweets in a 24-hour period and found similar ratios of slur usage as in older tweets that may have been scrubbed.[19] According to Brandwatch, a tweet that

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has been found objectionable may take as long as 30 days to be removed from their data, though the time could be shorter. Furthermore, the presence of even relatively small numbers of tweets containing known slurs suggests that there is not simply an immutable and automatic deletion of all tweets containing them. That said, while these factors give us hope that the rarity of such terms is, in fact, because of the good online public behavior of USAF community members, we could not definitively verify the extent to which censorship affected our data.

Methods

The size of our data set required scalable *text-mining*: computer analysis to detect language patterns at scale, combined with human contextual interpretation of those patterns. To do this, we used RAND-Lex, RAND's proprietary text and SM analysis platform. We used the following specific methods in this analysis:[20]

- *Keyness testing* finds conspicuously over- and underpresent words in a text collection when compared with a baseline collection—for example, a specific Twitter query compared with a broad sample of Twitter. By identifying patterns of words that overoccur (relative to the baseline), we can better understand what a text collection is about. For example, in posts mentioning USAF leadership, *white*, *women*, and *voice* were all statistically overpresent relative to a large and varied sample of English-language texts.

- *Collocate extraction* identifies word pairs and triplets that occur near each other nonrandomly in a text collection. Collocate extraction often finds abstractions, personal and place names, and habitual turns of phrase and is an important complement to keyness testing. By identifying patterns of words that habitually appear near each other, we can better understand what a text collection is about.

- *In-context viewing* shows the most frequent phrasal patterns for given word use, helping analysts understand at a glance usage in context.

For our Twitter data, we also conducted network analysis. This allowed us to visualize the social interactions within our Twitter data and create more granular data subsets by social connection (for example, polarized conservative versus progressive groups discussing politically contentious issues). RAND-Lex uses *Louvain modularity*, a way to infer social connectedness between SM users. This allows the community detection algorithm to infer communities from the relative frequency of interactions.

Conclusion

Our analysis brings welcome news: Across a range of SM platforms, USAF-affiliated users predominantly showed respect for others, regardless of identity or social group, and generally reflected service values of respect and professionalism in their online behavior.

Our data do present some significant challenges: We were unable to access private digital spaces where more hateful language may be used, and it is difficult to determine the extent to which either censorship or accounts falsely claiming to be used by USAF-affiliated people influenced our results. Even so, at least on the public forums that we examined, accounts claiming USAF affiliation only relatively rarely used obviously offensive terms toward disadvantaged groups. This, at least, should be welcome news, even if there could still be pockets of slander in other corners of the internet. Further, our proof-of-concept could be easily adopted by the Air Force Public Affairs Agency, giving situational awareness should misconduct become prevalent. This is an aggregate approach that respects the privacy and free speech rights of members, veterans, and other affiliated SM users; is simple; and uses existing, low-cost methods and data sources. Even though, at present, the portion of obviously intolerant posts or tweets is small, keeping an eye on USAF community discourse could help identify any new discourse against women or minorities. Because this approach can identify specific groups being targeted, it could help inform future USAF DEI efforts. While specific responses to problematic discourse are beyond the scope of this study, possible responses could include new trainings focused on particular forms of intolerance as they

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become apparent. Our approach could also provide insights into USAF community reception of any new USAF policies that caused a larger reaction than DEI policies have. While we think that the Department of the Air Force should also consider specific qualitative research to better understand private SM behavior, a public SM assessment capacity makes clear sense.

Appendix A. Airmen Discussions of USAF Policy and Leadership

Initially, we had planned to conduct a before-and-after analysis, seeking to determine whether or not particular events or policies affected the overall discourse on DEI-related issues among USAF community members on Twitter, Reddit, or USAFEF. While our panel of USAF veterans, service members, and experts noted several major policy changes, we were unable to find any individual DEI policy changes since 2016 or 2018 (when Brandwatch began collecting data from Reddit and Twitter, respectively) that had a clear and major impact on USAF online community discourse.

Discussions of USAF leadership were quite rare in the Twitter sample, occurring in only about 0.003 percent of tweets, many referencing the appointment of a new Chief Master Sergeant of the Air Force (CMSAF), Secretary of the Air Force, or Chief of Staff of the Air Force. On Reddit, only 0.0139 percent of posts mentioned USAF leadership. These discussions did tend to be significantly influenced by DEI-related issues, with celebrations of the appointment of General Charles Brown as the first African American USAF Chief of Staff contributing to the highest spike in volume by far of Twitter mentions of USAF leadership. On Reddit, CMSAF Wright's tweets following the death of George Floyd also contributed to a very prominent spike in volume. It should be noted, however, that in both cases, the overall volume was quite low, making it difficult to draw any conclusions about broader community discourse.

Conversations about the USAF were more common, but a keyness analysis of these tweets indi-cated that these mostly centered on daily life in the USAF, politics (including a preoccupation with the Capitol Hill riot), USAF jobs, training, ranks, specific locations, and veterans affairs or awards. "White," "female," "woman," and "voice" were all keywords that may indicate a limited discussion of some DEI issues, but these were less overpresent and less numerous than other keywords.

Our SMEs mentioned a number of major USAF leadership speeches or major DEI policy changes that had a significant impact on USAF, but these did not generally have any major impact on Air Force online community discourse. Changes to dress and grooming standards generated a larger conversation, but the specific impact of any single change was difficult to track because revisions tended to be incremental over time, and discussion of hair, uniform, and other grooming standards was inundated with questions or complaints about these standards that had little to do with the changes to accommodate women and ethnic or religious minorities. Some changes were easier to track with keywords, such as the decision to allow the wearing of hijabs or turbans by some service members, but these produced a very low volume of responses. Opinions on the new standards were mixed, with many expressing support and some complaining that the new standards should be extended to all airmen. On Twitter, some also complained that new dress and grooming standards would negatively affect morale or unit cohesion. Given the difficulties mentioned above (changes spread out over time, noise from non-DEI dress and grooming conversations, low volume of discussion of DEI-related USAF policies on Twitter), it was difficult to assess how common this critique was—certainly not common enough to be immediately obvious in keyness tests of DEI-related posts.

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Appendix B. Data Selection and Collection

Any reference to *DEI-related* Reddit posts or tweets was defined by keywords that we and our SMEs identified, modified to remove unrelated terms. Tweets or Reddit posts containing the relevant terms were identified using Brandwatch's search function and by creating custom Brandwatch queries. Note that our USAFEF data were collected by a custom-built webscraper and were more difficult to run highly complex searches on. On race relations, these terms included *racism, race, racist, racial, affirmative action, ethnicity, of color, Latino, Hispanic, Asian/African/Native American, islander, Caucasian, Jew*,*[21] *Muslim, Islam, bigot, bigoted, discrim*, BLM* near *riot/protest/movement/looting, minority, politically correct, diverse, diversity, race card,* references to *black* or *white* individuals, *n-word,* and racial slurs. On gender relations, we included posts or tweets including the words *female, male, man, men, woman, women, homo*, transgender, LGBT, queer, gay, lesbian, bisexual, sexual assault, harass, harassment, rape, feminism, 1619, pronouns, hair, beard, nail polish,* (looking for commentary on gender-specific USAF dress and grooming policies), crude anatomical references, and gender-based slurs. After working with the data set, we found *homogenous* and *jewel* produced much more noise than signal in our Reddit posts, and we removed posts containing them. We also decided to include tweets mentioning *race theory, black lives, Aryan,* and *master race,* to make sure we were fully capturing discussions that other terms may only have gotten the edges of. Some terms were not fully excluded but were prevented from tripping particular keywords for inclusion, including *NASCAR* or *horse* near *race; ops, mark, boots, shoes, leather, sheep, tie, hole, pitch, plague, ink, cat, socks, men in black,* or *shirt* near *black;* and *hot, house,* or *glove(s)* near *white.*

In looking for posts or tweets about USAF leadership and policies, we included all tweets and Reddit posts including references to the CMSAF by rank or name, Air Force Chief of Staff, or Secretary of the Air Force (e.g., *JoAnne Bass, Sergeant Bass,* and *CMSAF*). Their immediate predecessors were also included. Because of a high level of turnover among Secretar-

ies of the Air Force over the course of this study, we included references to Secretary John P. Roth or either of his two predecessors. Because Secretary Frank Kendall III was installed only at the end of the period studied, we did not include references to him. We also included posts and tweets mentioning the *USAF, Air Force,* or *Air Guard.* Given the specificity of these terms (and the paucity of relevant posts or tweets), it was not necessary to exclude any terms.

No term list is perfect, and the rapidly evolving world of slang and slurs inevitably outpaces the word lists of any study. The creation of this list inevitably involved many subjective judgment calls, made with the help of our SME panel. We found that this set of terms gave us a relatively wide view of tweets and posts on DEI-related issues and tended to exclude extraneous tweets and posts. While our terms inevitably missed some corners of the USAF community's sprawling DEI-related conversation, we feel they provided a relatively broad overview of DEI-related posts and tweets. One possible avenue for further research would be a greater focus on groups of terms related to more-specific issues.

Appendix C. Airmen Discourse on African Americans and Muslims

Because of our focus on slurs and clearly problematic discourse, much of our report has centered what is *not* being said about women and minorities in the USAF community. Computer-aided analysis of SM

> One possible avenue for further research would be a greater focus on groups of terms related to more-specific issues.

Many of the key terms identified in Reddit posts referencing African Americans seemed to indicate that the authors were responding to one another and trying to have a reasoned argument or discussion.

can also shed light on what airmen and their families *are* saying about particular groups. We present this exploratory analysis of discourse regarding African Americans and Muslims as an illustration of the types of analysis possible. Further analysis could produce both more insights on how these groups are discussed in the USAF community and insights on the discussion of other groups of interest.

To analyze discourse on African Americans, we built a corpus of USAFEF and Reddit posts containing the word *black*. In USAFEF, this produced a very noisy corpus of posts, but some keywords seemed to refer to race-related issues, politics, and hair or grooming standards. Several statistically significant words, including *man*, *chick*, *woman*, *dude*, and *guy* suggested that many of these posts were referring to specific individuals. Because our Reddit data were taken from Brandwatch, we were able to take more measures to reduce the presence of posts unrelated to DEI issues from our sample—for example, removing references to *black ops*, *black friday*, *black tie*, and other extraneous terms. As with USAFEF, many of these posts seemed to refer to particular individuals or groups. Here too, many statistically overpresent terms indicated that many of these posts focused

on DEI-related issues, including *white*, *Hispanic*, *racism*, *Asian*, *brown*, *native*, *n* and *word* (probably from the frequent use of *n-word* to tactfully refer to a slur), *female*, *women*, *gay*, *privilege*, and *stereotype*. Many terms also indicated a preoccupation with politics, such as *America*, *BLM*, and *rights*, though specific parties or politicians were mentioned less than in the Twitter data.[22] As with USAFEF, terms related to hair or grooming, including *blonde*, *brunette*, *beard*, *shaving*, *regs*, and *hair*, among others, were statistically overpresent in posts referencing African Americans. Quite a few of the key terms that our analysis produced also fell into the category of crime, punishment, and policing, which is unsurprising given the outsized impact of George Floyd's death and the Black Lives Matter movement on the overall discussion. Perhaps most interestingly, many of the key terms identified in Reddit posts referencing African Americans seemed to indicate that the authors were responding to one another and trying to have a reasoned argument or discussion. These terms included *because*, *specifically*, *likely*, *examples*, *vs*, *therefore*, *statistics*, *fact*, and *%*. Finally, several terms indicated that many of these posts were discussing speech and slurs, including *n* and *word*, *calling*, *disrespect*, *say*, *said*, *term*, and *called*. Unfortunately, the number of tweets referencing African Americans was so large (more than 230,000 tweets) that it could not be included in this preliminary analysis. Brandwatch does have a "word cloud" module, which pointed out possible keywords, though it is difficult to verify their statistical significance. As noted above, these included many names of specific politicians or political parties on both sides of the aisle. Additional research adding more terms (for example *African* near *American*) could help deepen our understanding of this discourse.

While USAFEF and Reddit posts mentioning *Muslim* or *Islam* were much less common, and fewer key terms were found, those that were fell into familiar categories. As with posts referencing African Americans, some were clearly related to dress and grooming standard changes, politics, and broader DEI-related issues. *Radical* was also a highly overpresent word, and many terms referenced religion or religiosity, including *prayer*, *religion*, *Christianity*, *religious*, and *chaplain*.

Notes

1   Air Force Instruction (AFI) 1-1, *Air Force Culture*, Washington D.C.: Department of the Air Force, November 12, 2014.

2   For example, a computer would have difficulty autonomously identifying the key difference between the sentences "I hate group X" and "Nobody should hate group X."

3   These were identified by a panel of subject-matter experts (SMEs) who have conducted research on DEI issues in the military or had experience working in the USAF. As these terms are vulgar and demeaning, we have refrained from including them explicitly in this report.

4   See Appendix C. Note that, while many of the terms often used in these discussions indicated reasoned discussion ("therefore, specifically, statistics, examples"), it is possible that they were used to argue against USAF DEI policies. Even so, we feel that the statistical overpresence of these terms suggests that airmen on the forums analyzed were trying to have a more-reasoned discussion instead of simply insulting one another or public institutions.

5   That is not to say that our approach would not trigger any public controversy or regulatory issues, and a more comprehensive overview of the laws and regulations that could come into play governing the USAF's ability to monitor SM content is beyond the scope of this report. The authors' opinion, however, is that an approach focused more on population-level data and more agnostic toward individual posters is likely to be less controversial. In the past, the possible impact of SM posts on specific real-world individuals has been a source of controversy. For some examples, see David Roza, "The Air Force's Top Enlisted Leader Opens Up About Her Recent Facebook Firestorms," *Task and Purpose*, February 9, 2021.

6   See "United States Air Force Reddit," social media portal, Reddit.com, undated; and "Air Force Enlisted Forums," social media portal, undated, respectively.

7   For a more in-depth discussion of moderation, see the data section of this report.

8   Marines United was a Facebook group created by Marine Corps members and veterans. In 2017, it was revealed that both marines and veterans were sharing explicit photos of female marines and posting lewd comments, leading to a major scandal for the Marine Corps and congressional hearings in March 2017. See Jared Keller, "The Rise and Fall (and Rise) of Marines United," *Task and Purpose*, March 16, 2017.

9   For context, in the same three-year period, the same population used the word *black* in 0.8953 percent of tweets, the word *white* in 1.2436 percent of tweets, and the word *Latino* in 0.0201 percent of tweets. While any use of hateful language is inappropriate, we think it useful to show the relatively low volume of this slur's use by our sample population. Note that these are approximations, based on the size of the corpus as collected on August 4, 2021, using data from July 2018–July 2021. Note that

Twitter's own moderators may have helped contribute to this low proportion. See the data section of this report for a more extensive discussion of Twitter's moderation.

10   Note that one slur was also a common given name, so we were unable to determine its exact prevalence when used as a slur.

11   Our SMEs included USAF active-duty members, USAF veterans, and civilians with extensive work histories with the USAF.

12   For example, our SMEs suggested that we search for a gendered slur framing a woman as sexually desirable to men due to female scarcity in deployed areas. Such insider language insights helped us make a much more thorough search for problematic language.

13   In June of 2020, as the death of George Floyd was having a significant impact on the SM landscape in the United States, the number of tweets by USAF community members on DEI-related issues rose significantly and accounted for almost 5 percent of all tweets by USAF community members. For greater detail on how we identified *DEI-related posts*, see Appendix C.

14   Brandwatch, homepage, undated.

15   See "What's a Moderator?" webpage, Reddit, undated. For personal accounts of several prominent moderators, see David Price, "How a Screenshot Started a Fight That Took over Reddit," *Protocol*, May 27, 2020.

16   "Rules and Enforcement, July-December 2020," Twitter, Inc., July 14, 2021.

17   Tweets appeared in several places, such as central Alaska or western Montana, where there are significant bases but the population is sparse. Note that there are some clusters in major cities, such as Chicago or New Orleans, that do not have air bases nearby. It is possible that the populations in cities far from air bases are veterans, though this is impossible to verify.

18   For large queries such as ours, Brandwatch samples tweets. This worked out in our case to be a random sampling of approximately 70 percent, or about 56.43 million tweets. Our analysis of the data as a whole was based on this sample.

19   As observed on August 4, 2021.

20   For more detail on this text-mining approach to social media, please see William Marcellino, Christian Johnson, Marek N. Posard, and Todd C. Helmus, *Foreign Interference in the 2020 Election: Tools for Detecting Online Election Interference*, Santa Monica, Calif.: RAND Corporation, RR-A704-2, 2020, pp 13–14.

21   The "*" operator (or *wildcard* operator) at the end of a word captures the various ending forms, e.g., jew* would catch Jew, Jews, and Jewish.

22   Because the Twitter data were such a large corpus, we were unable to include them in this preliminary analysis. Comparisons here are admittedly imperfect, using Brandwatch's own proprietary tool for identifying keywords. Analysis of forum posts was conducted using RAND-Lex.

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Acknowledgments

About This Report

In a time of ubiquitous and instant communications over social media, the U.S. Air Force (USAF) has an interest in understanding the online behavior of airmen and the wider USAF community. To help the USAF better understand this online behavior, RAND Corporation researchers conducted a proof-of-concept study that collected a very large dataset of USAF-affiliated user posts on multiple social media platforms, over several years. Using a variety of text and network analytic methods, we found that, overall, the proportion of USAF community members whose public posts included racist or intolerant language was relatively small, and that continued community-level monitoring could be executed with minimal effort. This report will be of interest to senior USAF leaders, as well as USAF public affairs personnel.

The research reported here was completed by the Department of the Air Force as part of a fiscal year 2021 project, "Is It Sinking In? Exploring the Impact of Top-Level Air Force Policy on the Attitudes of Airmen," and conducted as part of a RAND PAF initiative to support diversity, equity, and inclusion (DEI) within the Department of the Air Force. Oversight of the initiative was provided by Dr. Ray Conley.

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