PERFORMANCE WORK STATEMENT (PWS)

Environmental Health and Safety Industrial Hygiene Services for Maryland Army National Guard (MDARNG) Maintenance Facilities

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1.0 General Information

1.1 Objective

The purpose of this contract is to anticipate, recognize, evaluate, and control potential health hazards at Maryland Army National Guard (MDARNG) Maintenance Facilities. The surveys will establish or update workplace baselines to document civilian and military employees' exposure histories and provide actionable recommendations for hazard control.

1.2 Background

In accordance with the Occupational Safety and Health (OSH) Act of 1970 (29 CFR 1960), DODI 6055.01, and AR 385–10, all areas and operations of each workplace must be inspected at least annually by qualified safety and occupational health personnel. An American Board of Industrial Hygiene (ABIH) Certified Industrial Hygienist (CIH) is classified as qualified safety and health personnel to fulfill these mandates.

1.3 Period of Performance

The Period of Performance (PoP) shall be one (1) Base Year of twelve (12) months, plus four (4) consecutive twelve-month Option Years, to be exercised at the discretion of the Government.

1.4 Place of Performance / Description of Facilities

Services will be performed at MDARNG maintenance facilities, which typically perform the following activities:

- **Army Aviation Support Facility (AASF):** Performs backup Aviation Unit Maintenance (AVUM) and limited Aviation Intermediate Maintenance (AVIM), including direct support.
- **Combined Support Maintenance Shop (CSMS):** Provides field and sustainment-level maintenance for all vehicles and equipment (excluding those serviced at MATES or other authorized CSMS sites).
- **Field Maintenance Shop (FMS):** Performs field-level maintenance on vehicles and equipment for supported units.

A detailed list of the specific MDARNG target facilities is provided in **Attachment 8**.

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2.0 Contractor Personnel & Qualifications

2.1 Personnel Qualifications

All on-site fieldwork and report writing must be performed by an ABIH Certified Industrial Hygienist (CIH) in good standing. The CIH must be highly proficient in the anticipation, recognition, evaluation, and control of physical, chemical, biological, and ergonomic workplace stressors. The National Guard Bureau (NGB) Region Northeast IH Office reserves the right to request a change in personnel due to performance, conflict, or lack of demonstrated experience.

2.2 Contractor Requirements & Conduct

- **Punctuality:** The contractor shall arrive on schedule to prepare and conduct all IH surveys.
- **Professional Appearance & Hygiene:** Contractor personnel must maintain a highly professional appearance, wear appropriate protective clothing suitable for industrial maintenance environments (no shorts, skirts, or sleeveless garments), and maintain high standards of personal hygiene. Clothing must be clean, neat, and free of offensive or derogatory graphics/text.
- **Safety & Health Compliance:** The contractor must abide by all federal, state, and local laws and regulations governing workplace safety and health programs.
- **Complete Disclosure:** The contractor must fully disclose any past incidents, felony or misdemeanor charges (excluding minor traffic violations), and malpractice/liability claims involving their staff or subcontractors. The ARNG IH representative will evaluate disclosures for contract suitability.
- **Unacceptable Skills / Misconduct:** The Government reserves the right to assess services on-site. If any contractor employee is deemed unsatisfactory, unfit for duty, or causes a disruption to the workforce, the COR may demand their immediate removal from the facility.
- **Litigation Cooperation:** In the event of litigation or investigation of a liability claim, the contractor must cooperate fully with Government authorities and provide all requested documentation.
- **Confidentiality:** The contractor shall treat all gathered information as limited privileged communication. No information regarding ARNG facilities, operations, or personnel may be released to external entities without prior written approval from the COR.

2.3 Conflict of Interest (COI)

- The contractor shall not introduce or market any new services without prior approval of the COR.
- No data gathered under this contract may be used for research, study, grants, or publications without prior written consent from the Contracting Officer (KO).
- The contractor shall not bill any individual worksite or employee for services rendered.
- Contractor employees shall not maintain employment with the US Government if such employment creates a conflict of interest.

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2.4 Security & Installation Access

- **Installation Access:** Contractor personnel shall comply with all local installation security, fire, traffic, and access guidelines. Vehicles are subject to search. Unscheduled gate closures may occur and do not warrant extra compensation.
- **Identification:** Contractor personnel must display visible company identification badges (showing company name, employee name, and the word "Contractor") at all times and declare their contractor status in all communications (including email signatures).
- **CAC Requirements:** A Common Access Card (CAC) is **not** authorized or required for the performance of this contract.
- **Antiterrorism (AT) Level 1 Training:** All contractor employees requiring access to Army installations must complete AT Level 1 Awareness Training (available at http://jko.jten.mil) prior to gaining access. Certificates of completion must be submitted to the COR within 15 calendar days of contract award or prior to on-site work.
- **Information Security & PII:** The contractor shall protect all Personally Identifiable Information (PII) in accordance with DFARS 224.103 and DoD directives. Under no circumstances shall social security numbers or birth dates be collected or recorded in any report or database.

3.0 Scope of Work & Specific Tasks

The Contractor shall provide all personnel, calibrated equipment, and materials required to conduct baseline, annual, and special environmental health and safety industrial hygiene surveys and to prepare comprehensive reports. The contractor must allocate **two (2) full days** of field work at each maintenance facility listed in Attachment 8.

3.1 Scheduling and Coordination

The contractor must obtain MDARNG Safety and Occupational Health (SOH) POC details from the ARNG Region Northeast IH Office. The contractor must coordinate survey dates with local facility POCs and the SOH POC in advance. If the listed facility has closed or consolidated, the contractor must contact the Northeast IH Office immediately for assignment of an alternate facility.

3.2 Evaluation of Processes

Using professional judgment, the contractor must evaluate all potentially hazardous operations (planned, active, or historical). Typical operations are listed in **Attachment 2**. Each process evaluation must include:

1. **Process Description:** Detail the basic tasks, area location, chemical/physical hazards, number of personnel exposed (on survey date vs. total assigned), duration, and frequency (e.g., hours/day, times/week).

2. **Engineering & Administrative Controls:** Document and evaluate existing controls. Provide an evaluation of local exhaust ventilation systems (detailed below).
3. **Personal Protective Equipment (PPE):** Detail appropriate PPE requirements, evaluate current PPE availability, and document actual employee compliance.

3.3 Ventilation System Evaluation

- Evaluate the effectiveness of all general and local exhaust ventilation systems even if they are not in active use during the survey. Note any inoperable or damaged systems.
- **Quantitative Performance Metrics:**
    - **Paint Spray Booths:** Verify that average cross-sectional face velocity is maintained at 100 ± 20 feet per minute (fpm) in accordance with OSHA 29 CFR 1910.94 Table G-10 and ACGIH recommendations.
    - **Local Exhaust / Welding Hoods:** Verify a minimum capture or face velocity of ≥ 100 fpm.
    - **Vehicle Tailpipe Slots/Hoses:** Verify capture velocities achieve a minimum slot velocity of ≥ 150 fpm or duct transport velocity of ≥ 2,000 fpm.
- Use smoke tubes or cool-burning smoke candles to analyze airflow patterns in spray paint and abrasive blasting booths. Describe these patterns and identify dead zones or eddies in the report.
- Identify any potential for clean air intake contamination by recirculated exhaust.

3.4 Noise Dosimetry

- Conduct personal noise dosimetry on at least ten (10) maintenance employees per facility who are most likely to experience high noise exposures.
- Dosimeters must be worn and log data for a minimum of 75% of the standard workday (e.g., minimum 6 hours of an 8-hour shift).
- **Standard Parameters:** Set dosimeters to Army/ACGIH criteria in accordance with DA PAM 40-501:
    - Exchange Rate: 3 dB
    - Criterion Level: 85 dBA
    - Threshold Level: 80 dBA
- **Calibration Metrics:** Field calibrate all dosimeters before and after each daily sampling run. The pre- and post-test calibration drift must not exceed ± 0.5 dBA. Samples exceeding this limit are invalid and must be repeated.
- Present individual results as an 8-hour Time-Weighted Average (TWA-8). If six (6) or more dosimetry results are collected for a Similar Exposure Group (SEG), calculate the Occupational

Exposure Group (OEG) Upper Tolerance Limit (UTL) using the methodologies outlined in **Attachment 6**.

- Complete a DA Form 4700 for each monitored employee (following the examples in **Attachment 7**).
- *Exclusion:* Noise dosimetry shall **NOT** be performed on State Employees or Contractor Employees.

3.5 Lighting & Illumination

Measure lighting levels in representative work areas. Report all measurements in footcandles (fc). Evaluate task-specific lighting (e.g., portable vehicle maintenance lights) and compare findings against the following IESNA/UFC 3-530-01 standard minimum metric targets:

- **General Maintenance / Hangar Bays:** ≥ 30 fc
- **Active Mechanical Work/Workbenches:** ≥ 50 fc
- **Precision Component Repair / Soldering:** ≥ 100 fc
- **Egress Paths, Storage, and Corridors:** ≥ 5 fc

3.6 Physical Condition of Facility & Personnel Concerns

- **Lead-Based Paint:** Document the condition and location of damage, peeling, or chipping paint. Provide actionable recommendations to notify the Facilities Management Office (FMO) for testing/remediation.
- **Asbestos-Containing Material (ACM):** Perform a visual inspection for suspect ACM. Note condition, location, and estimated quantities. Warn the FMO immediately of damaged, friable asbestos.
- **Water Damage & Mold:** Document visible mold, water staining, and identifying potential water incursion sources.
- **Indoor Air Quality (IAQ):** Conduct employee interviews to identify IAQ concerns. Measure and evaluate IAQ and thermal comfort metrics against ASHRAE 62.1 and ASHRAE 55-2013 standards:
    - **Carbon Dioxide (CO2):** < 1,000 ppm (or ≤ 700 ppm above concurrent outdoor ambient levels).
    - **Carbon Monoxide (CO):** < 9 ppm.
    - **Relative Humidity (RH):** Maintain comfortable baseline range of 30% to 60%.
    - **Temperature:** Maintain ranges of 68°F to 76°F (Winter) and 73°F to 79°F (Summer).
- **Ergonomic Assessments:** Provide initial ergonomic evaluations for tasks involving repetitive motions, heavy lifting, prolonged standing, or awkward postures. Recommend adjustments, anti-fatigue mats, or assistive lift devices.
- **Housekeeping & Hygiene:** Assess facility housekeeping, chemical storage, food/beverage hygiene, and prevent cross-contamination into administrative spaces.

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3.7 Safety Data Sheet (SDS) & Chemical Review

Review the chemical inventories and SDSs available on-site. Create a consolidated product inventory detailing chemical hazards, products with published Occupational Exposure Limits (OELs), and their associated operational processes.

3.8 Photographic Documentation

Provide clear, labeled photographs of all noted deficiencies, damaged engineering controls, or structural hazards within the report.

3.9 Equipment Requirements

The contractor must provide all necessary, currently calibrated industrial hygiene equipment. Calibration must be valid on the date of the survey. The required minimum equipment inventory is detailed in **Attachment 3**.

3.10 Excluded Services

Air sampling and surface wipe sampling are strictly excluded from the scope of these surveys.

4.0 Deliverables & Reporting

4.1 Urgent Hazard Notification

If an imminent danger is identified during a survey (such as severe chemical overexposures, highly friable suspect ACM, or critical PPE failures that classify as Risk Assessment Code 1 or 2):

4. **Immediate action:** Alert the on-site facility supervisor or safety representative immediately.
5. **Notification:** Notify the NGB Region Northeast IH Office and the MDARNG SOH POC by phone or email within 24 hours.
6. **Written Summary:** Provide an electronic summary of findings, recommendations, and immediate corrective actions within one (1) week of the observation.

4.2 Draft and Final Reports

- **Draft Reports:** Submit an electronic draft report, complete field notes, and DA Form 4700s for each facility within four (4) weeks of the respective survey date. Submit reports individually; do not delay drafts until all facility surveys are complete. Send to the Regional Industrial Hygienist: **Jayson Allan** (jayson.r.allan.civ@army.mil).
- **Final Reports:** Submit the finalized electronic report (PDF format) within two (2) weeks of receiving government comments. Address and incorporate all comments.

- **File Naming Convention:** All files must be named using the format: State_Facility_City_MM_YYYY (e.g., MD_CSMS_Havre_de_Grace_05_2026).

4.3 Report on Structure Requirements

Each final report must contain:

7. **Administrative Details:** Survey date, facility address, and facility POC. (No PII: exclude SSNs and birth dates).
8. **Table of Contents**
9. **Executive Conclusion:** A concise, 1-to-2 paragraph summary of the survey findings.
10. **Process Evaluations:** Comprehensive write-ups for each process as defined in Section 3.2.
11. **Appendices:**

    - Noise dosimetry printouts and statistical calculations.
    - Applicable references used (utilize current publication dates).
    - A comprehensive summary table matching every finding to an actionable recommendation, including assigned Risk Assessment Codes (RACs) for health, safety, noise, and ergonomics, backed by specific standard citations.

12. **Separate Deliverables:**

    - One legible copy of raw field notes.
    - Completed DA Form 4700 noise exposure forms for each monitored employee.

5.0 Quality Assurance & Payment

5.1 Quality Control Plan (QCP)

The contractor shall establish and maintain a written Quality Control Plan (QCP) to ensure services conform to PWS requirements. The QCP must identify procedures to prevent and correct defective services. Any modifications to the QCP must be approved in writing by the Contracting Officer (KO).

5.2 Quality Assurance Surveillance Plan (QASP)

The Government will evaluate the contractor's performance using a Quality Assurance Surveillance Plan (QASP). The QASP defines performance standards, acceptable quality levels, surveillance frequency, and government audit methodologies.

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Technical Exhibit 1: Performance Requirements Summary (PRS)

Performance Objective	Performance Standard / Metric	Acceptable Quality Level (AQL)	Method of Surveillance
Draft Report Timeliness	Submit comprehensive draft reports within 28 calendar days of survey completion.	≥ 95% on-time delivery	COR tracking of electronic receipt dates.
Final Report Quality & Accuracy	Final reports must address and resolve 100% of government comments with no critical data gaps.	100% compliance	NGB Region Northeast IH Office review and validation.
Field Work Execution	Conduct surveys utilizing a qualified ABIH CIH for a full two (2) days at each facility.	100% compliance	Sign-in sheets, visitor logs, and daily field note verification.
Equipment Calibration	All equipment used must be currently calibrated with field drift for noise dosimeters ≤ ± 0.5 dBA.	100% compliance	Review of pre/post calibration logs in appendices.
Safety and Security Standards	100% compliance with AT Level 1 training and PII security protocols.	Zero breaches or violations	Verify training certificates and check reports for PII leakage.

5.3 Recognized Federal Holidays

On-site work is not permitted on recognized US federal holidays. Holidays falling on a Saturday are observed on the Friday before; holidays falling on a Sunday are observed on the following Monday:

- New Year's Day (Jan 1)

- Martin Luther King, Jr.'s Birthday
- Presidents' Day
- Memorial Day
- Independence Day (July 4)
- Labor Day
- Columbus Day
- Veterans Day (Nov 11)
- Thanksgiving Day
- Christmas Day (Dec 25)

5.4 Payment Schedule

Invoices shall be processed for payment only after final, comprehensive reports for the respective facilities are completed, submitted, and formally accepted by the Government. Final contract payment will be withheld until all deliverables have been accepted.

6.0 Definitions and Acronyms

6.1 Definitions

- **Contractor:** A supplier or vendor awarded a contract to provide specific supplies or services to the government.
- **Contracting Officer (KO):** A person with authority to enter into, administer, and/or terminate contracts on behalf of the government. The only individual who can legally bind the government.
- **Contracting Officer's Representative (COR):** An employee of the U.S. Government designated in writing by the KO to monitor contractor performance. Holds no authority to modify contract terms, conditions, or funding.
- **Defective Service:** A service output that does not meet the performance standards associated with the Performance Work Statement.
- **Deliverable:** Anything that can be physically or electronically delivered, including survey notes, data, or reports.
- **Similar Exposure Group (SEG):** A group of workers having the same general exposure profile for the agent being evaluated because of the similarity and frequency of the tasks they perform.

6.2 Acronyms

- **AASF:** Army Aviation Support Facility
- **ABIH:** American Board of Industrial Hygiene
- **ACGIH:** American Conference of Governmental Industrial Hygienists
- **ACM:** Asbestos-Containing Material

- **AR:** Army Regulation
- **AT:** Antiterrorism
- **CAC:** Common Access Card
- **CFR:** Code of Federal Regulations
- **CIH:** Certified Industrial Hygienist
- **COR:** Contracting Officer's Representative
- **CSMS:** Combined Support Maintenance Shop
- **DA PAM:** Department of the Army Pamphlet
- **EPC:** Effect Probability Category
- **FMS:** Field Maintenance Shop
- **HHSC:** Health Hazard Severity Code
- **IAQ:** Indoor Air Quality
- **IH:** Industrial Hygiene
- **KO:** Contracting Officer
- **OEG:** Occupational Exposure Group
- **OEL:** Occupational Exposure Limit
- **OSH:** Occupational Safety and Health
- **PII:** Personally Identifiable Information
- **PWS:** Performance Work Statement
- **QASP:** Quality Assurance Surveillance Plan
- **QCP:** Quality Control Plan
- **RAC:** Risk Assessment Code
- **SDS:** Safety Data Sheet
- **SOH:** Safety and Occupational Health
- **TWA:** Time-Weighted Average
- **UTL:** Upper Tolerance Limit

Attachments

13. Regulations and Standards
14. Typical Operations at ARNG Maintenance Facilities
15. Required Industrial Hygiene Equipment and Supplies
16. Example of Operation Description Format for Report
17. Risk Assessment Codes for Health and Safety
18. Risk Assessment Codes for Noise
19. DA Form 4700 - Completed Noise Exposure Record Examples
20. Target Facility List

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Attachment 1: Regulations and Standards

21. **OSHA Standard 29 CFR 1910:** General Industry Standards. http://www.osha.gov/comp-links.html
22. **DODI 6055.01:** DoD Occupational Safety and Health (OSH) Program. http://www.dtic.mil/whs/directives/corres/pdf/605501p.pdf
23. **AR 11-34:** The Army Respiratory Protection Program. http://armypubs.army.mil/epubs/pdf/r11_34.pdf
24. **AR 40-5:** Medical Services, Preventive Medicine. http://armypubs.army.mil/epubs/pdf/R40_5.pdf
25. **AR 385-10:** The Army Safety Program. http://armypubs.army.mil/epubs/pdf/r385_10.pdf
26. **DA PAM 40-501:** Medical Services, Army Hearing Program. http://armypubs.army.mil/epubs/pdf/P40_501.pdf
27. **DA PAM 40-11:** Preventive Medicine. http://armypubs.army.mil/epubs/pdf/p40_11.pdf
28. **DA PAM 40-503:** Medical Services, The Army Industrial Hygiene Program. http://armypubs.army.mil/epubs/pdf/P40_503.PDF
29. **UFC 3-410-01FA:** Heating, Ventilating, and Air Conditioning Systems. http://www.wbdg.org/ccb/DOD/UFC/ufc_3_410_01.pdf
30. **ACGIH:** Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs), Current Edition.
31. **ACGIH:** Industrial Ventilation – A Manual of Recommended Practice for Design, Current Edition.
32. **ANSI/ISEA Z358.1-2009:** Emergency Eyewash and Shower Equipment.
33. **ANSI/ASHRAE 55-2013:** Thermal Environmental Conditions for Human Occupancy.
34. **ANSI/ASHRAE 62.1-2016:** Ventilation for Acceptable Indoor Air Quality.
35. **IESNA:** The Lighting Handbook, Current Edition.
36. **OSHA Instruction Letter 02-02-058:** Lead Exposure in Construction, Dec 13, 1993.
37. **OSHA Standard Interpretation:** Clarification of "as free as practicable" and lead contamination under 29 CFR 1926.62, Jan 13, 2003.

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Attachment 2: Typical Operations at ARNG Maintenance Facilities

Facility Type	Typical Operational Processes (Not Exhaustive)
CSMS / FMS	• Vehicle and Equipment Maintenance, Inspection, and Repair • Battery Charging and Maintenance • Brake Pad Replacement • Solvent Use and Parts Washing • Vehicle Idling • Welding, Grinding, and Cutting Metals • Machining • Spray Painting (Aerosol Can and/or Compressed Air Application) • Canvas and Vinyl Repair • Woodworking and Crate Construction • Flammable and Combustible Materials Storage • Warehousing and Storage • Electronics Repair and Soldering • Weapons Storage, Repair, and Test Firing • Night Vision Device (NVD) Repair and Nitrogen Purging
AASF	• Rotary Aircraft Maintenance, Inspection, and Repair • Confined Space Entry – Fuel Cells, Tail Boom • Battery Charging and Maintenance • Solvent Use and Parts Washing • Welding, Grinding, and Cutting Metals • Machining • Spray Painting (Aerosol Can and/or Compressed Air Application) • Aviation Life Support Equipment (ALSE) Canvas and Vinyl Repair • Flammable and Combustible Materials Storage • Warehousing and Storage • Electronics Repair and Soldering • Aircraft Blade Repairs (solvents, epoxy, isocyanates) • Engine Test

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Attachment 3: Required Industrial Hygiene Equipment and Supplies

Equipment	Capability	Purpose	Minimum Quantity
Air Velocity Meter	Air velocity in feet per minute (fpm)	Evaluate ventilation face velocity on paint booths, welding hoods, slot hoods, vehicle tailpipe exhaust, etc.	1 per survey team
Indoor Air Quality Meter	Carbon Monoxide, Carbon Dioxide, Percent Relative Humidity, Temperature	Measure indoor air quality and comfort parameters.	1 per survey team
Light Meter	Footcandles (fc)	Measure general and task illumination levels.	1 per survey team
Noise Dosimeters	Datalogging compliant with both OSHA and Army/ACGIH criteria	Conduct personal 8-hour TWA noise sampling on maintenance personnel.	10 per survey team
Noise Dosimeter Calibrator	Tone Generator compatible with selected dosimeter model	Field calibrate noise dosimeters before and after each survey day.	1 per survey team
Smoke Candles / Tubes	Cool-burning, flameless, spark-free smoke generator	Track and evaluate airflow patterns in spray paint and media blasting booths.	1 per booth
Tape Measure	Standard US measurements	Measure physical duct diameters, hood faces, and booth dimensions.	1 per survey team

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Attachment 4: Sample Process Description

CSMS Spray Painting Operation

The Paint Shop contains a large downdraft booth and is located adjacent to the vehicle maintenance bays in the "E" Wing of the CSMS. The dimensions of the booth are approximately 17.5' W x 40' L x 12.5' H. Vehicle-sized swing-hinge doors are installed at each end of the booth, and four personnel egress doors are approximately 3' W x 7' H. Two full-time painters are assigned and report that at current workloads, they are required to paint for a duration of approximately four hours, 2 to 3 days per week.

- **Exhaust Ventilation:** The average cross-sectional air velocity in large paint booths is recommended by OSHA 29 CFR 1910.94 Table G-10 to be between 75 and 125 feet per minute (fpm). The paint booth at the CSMS has an average cross-sectional velocity of 64 fpm, which does not meet the standard. Airflow is unevenly distributed across the booth. Smoke testing demonstrated that the ventilation system is only moderately effective at clear air replacement. *Recommendation:* The system should be serviced, balanced, and the filters replaced. Regular servicing and lubrication of belts and moving parts will extend the life of the equipment and ensure effective performance.
- **Booth Pressure:** The booth relative to the adjacent workspace is under a slight negative pressure. The ACGIH Ventilation Manual, Paragraph 13.75, notes that maintaining the paint booth under slight negative pressure reduces the potential of toxic paint vapors escaping the booth into adjacent work areas.
- **Pressure Gauge (Manometer):** Manometers are installed on the booth supply and exhaust filter banks to show the pressure drop as required by OSHA 29 CFR 1910.94(c)(7)(iii)[b]. On the survey date, the manometers needed fluid, required zeroing, and were not marked with clear high/low operating indicators.
- **Sound Pressure Levels:** A sound level meter was used to measure noise levels in the booth during spray painting. All levels were below the Army criterion threshold of 85 dBA and are presented in Appendix X.
- **Personal Protective Equipment (PPE):** Personnel donned disposable coveralls (Tyvek), chemical-resistant gloves, and supplied-air respirators.
- **Emergency Equipment:** An emergency eyewash and shower unit is provided adjacent to the paint mixing area. The unit was documented as inspected weekly and provided tepid flushing fluid as recommended by ANSI/ISEA Z358.1-2009.

Attachment 5: Deriving Risk Assessment Codes (RACs)

1. Determine Health Hazard Severity Code (HHSC)

The HHSC reflects the magnitude of exposure and medical effects from chronic exposure. Total the points from (a) and (b) below, then determine the HHSC from (c).

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a. Exposure Points

Alternate Exposure Route (AER) Possible?	95th Percentile <10% of OEL	95th Percentile between 10% and 50% of OEL	95th Percentile between 50% and 100% of OEL	95th Percentile >OEL
No	0 Points	3 Points	5 Points	7 Points
Yes	1 - 2 Points	4 Points	6 Points	9 Points

AER includes skin absorption or ingestion. OEL refers to OSHA PEL or ACGIH TLV.

b. Medical Effects Points

Condition Description	Points
No medical effect (e.g., nuisance noise, nuisance odor)	0
Temporary reversible illness requiring supportive treatment (e.g., eye irritation, sore throat)	1 - 2
Temporary reversible illness with a variable but limited period of disability (e.g., metal fume fever)	3 - 4
Permanent, non-severe illness or loss of capacity (e.g., permanent hearing loss)	5 - 6
Permanent, severe, disabling, irreversible illness or death (e.g., asbestosis, lung cancer)	7 - 8

c. HHSC Determination

Total Points (Exposure + Medical Effects)	HHSC
13 - 17	**I** (Critical)
9 - 12	**II** (Serious)
5 - 8	**III** (Moderate)

0 - 4	**IV** (Minor)

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2. Determine Effect Probability Category (EPC)

The EPC is based on the duration/frequency of exposure and the number of exposed workers.

a. Duration and Frequency Points (Add duration points and frequency points, divided by 2, and round UP)

Points	Exposure Duration	Exposure Frequency
8	>8 hours/day	Daily
7	6 - 8 hours/day	2 - 3 times/week
6	4 - 6 hours/day	Weekly
5	2 - 4 hours/day	2 - 3 times/month
4	1 - 2 hours/day	Monthly
3	30 - 60 minutes/day	Quarterly or 2 - 3 times/year
2	15 - 30 minutes/day	Annually
1	0 - 15 minutes/day	Less than annually

b. Number of Exposed Personnel Points

Number of Exposed Workers	Points
< 5	1 - 2

5 - 9	3 - 4
10 - 49	5 - 6
> 49	7 - 8

c. EPC Determination

Total Points (Duration/Frequency + Worker Points)	EPC
13 - 17	**A**
9 - 12	**B**
5 - 8	**C**
0 - 4	**D**

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3. Determine the Chronic Hazard RAC Matrix

HHSC	EPC: A	EPC: B	EPC: C	EPC: D
I	RAC 1	RAC 1	RAC 2	RAC 3
II	RAC 1	RAC 2	RAC 3	RAC 4
III	RAC 2	RAC 3	RAC 4	RAC 5

IV	RAC 3	RAC 4	RAC 5	RAC 5

RAC Descriptors: 1 = Critical, 2 = Serious, 3 = Moderate, 4 = Minor, 5 = Negligible.

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4. Deriving RACs for Safety Hazards

Combine Hazard Severity and Accident Probability using the matrix below:

a. Accident Probability Code

Code	Description
A	Likely to occur immediately
B	Probably will occur in time
C	Possible to occur in time
D	Unlikely to occur

b. Hazard Severity Code

Code	Description
I	Death, permanent total disability, or loss of facility/asset
II	Permanent partial disability, temporary total disability > 3 months, or major property damage
III	Lost-workday injury, compensable injury, or minor property damage
IV	Minimal threat to personnel or property, minor first-aid standard violation

c. Safety RAC Matrix

Hazard Severity	Probability: A	Probability: B	Probability: C	Probability: D
I	RAC 1	RAC 1	RAC 2	RAC 3
II	RAC 1	RAC 2	RAC 3	RAC 4
III	RAC 2	RAC 3	RAC 4	RAC 5
IV	RAC 3	RAC 4	RAC 5	RAC 5

Attachment 6: Determining the Noise Risk Assessment Code (RAC)

To assign a noise RAC for employee notifications on DA Form 4700:

38. **Group Personnel:** Define Similar Exposure Groups (SEGs) / Occupational Exposure Groups (OEGs) (e.g., Aircraft Mechanics, Ground Support, Machinists).
39. **Calculate Statistical UTL:** For SEGs/OEGs with six (6) or more personal dosimetry samples, calculate the Upper Tolerance Limit (UTL) (95% confidence level, 95th percentile). If the SEG contains fewer than 6 workers, use individual TWA-8 results.
40. **Assign RAC:** Determine the RAC based on the simplified table below:

Exposure Result (Individual TWA or SEG UTL)	< 10 Workers in SEG/OEG	10 or more Workers in SEG/OEG
< 82 dBA	RAC 4 (Minor)	RAC 3 (Moderate)
≥ 82 dBA	RAC 3 (Moderate)	RAC 2 (Serious)

Attachment 7: Noise Exposure DA 4700 Medical Record Examples

Example 1: Individual TWA Above Standard (Enrollment Required)

MEDICAL RECORD – SUPPLEMENTAL MEDICAL DATA (Ref: AR 40-66 / Proponent: OTSG)
REPORT TITLE: WORKERS' OCCUPATIONAL NOISE DOSIMETRY DATA RECORD

PATIENT IDENTIFICATION:
NAME: Doe, J.
SSN: XXX-XX-XXXX
FACILITY: AASF 2 Rochester, NY
JOB DESCRIPTION/SERIES: Avionics
SAMPLING DATE: 28 November 2018

EXPOSURE DATA:
OEG: Test Pilot
Employee TWA: 89.1 dBA
OEG UTL: N/A (Sample size of 1 is too small for statistical calculations; personal TWA used)
Assigned RAC: 2

HEARING CONSERVATION NOTIFICATION:
Your 8-hour Time-Weighted Average (TWA) noise exposure was measured at 89.1 dBA, which exceeds the Army 85 dBA Action Level. You are required by DA Hearing Conservation Policy (DA PAM 40-501) to:
1. Be enrolled and maintained in the NYARNG Hearing Conservation Program.
2. Wear approved hearing protection (earplugs or earmuffs) in areas with noise levels >= 85 dBA. Dual protection (both plugs and muffs) is required in areas exceeding 103 dBA.
3. Comply with all posted noise hazard warning signs.

PREPARED BY: Jayson Allan, Regional Industrial Hygienist (NGB-IH)
DATE: 1 October 2019

Example 2: Individual TWA Below Standard (Historical Inclusion Recommended)

MEDICAL RECORD – SUPPLEMENTAL MEDICAL DATA (Ref: AR 40-66 / Proponent: OTSG)
REPORT TITLE: WORKERS' OCCUPATIONAL NOISE DOSIMETRY DATA RECORD

PATIENT IDENTIFICATION:
NAME: Smith, J.
SSN: XXX-XX-XXXX
FACILITY: AASF 2 Rochester, NY
JOB DESCRIPTION/SERIES: Avionics
SAMPLING DATE: 28 November 2018

EXPOSURE DATA:
OEG: Avionics
Employee TWA: 68.9 dBA
OEG UTL: N/A (Sample size of 2 is too small for statistical calculations; personal TWA used)
Assigned RAC: 3

HEARING CONSERVATION NOTIFICATION:
Your 8-hour TWA noise exposure on the survey date was measured at 68.9 dBA, which is below the 85 dBA Action Level. However, historical data indicates that avionics personnel in this facility are

routinely exposed to noise levels exceeding 85 dBA. It is strongly recommended that you remain enrolled in the NYARNG Hearing Conservation Program and continue to wear appropriate hearing protection during noise-hazardous operations.

PREPARED BY: Jayson Allan, Regional Industrial Hygienist (NGB-IH)
DATE: 1 October 2019

Attachment 8: Target Facility List

Facility Type	Facility Name	Address	City, Zip Code
AASF	William Baxter AASF	Bldg E-4081 and others, APG Edgewood	21010-5401
CSMS	CSMS (New Building)	Box 1, 333 Old Bay Lane, Havre de Grace	21078
FMS	Wachter Maintenance Fac. (FMS 1)	5525 Rue Saint Lo Drive, Reisterstown	21136
FMS	FMS 02	1218 North Point Rd., Dundalk	21222
FMS	FMS 04	926 Booth Street, Salisbury	21801
FMS	FMS 05	BLDG E4306, Otto & Nike Rds, Edgewood	21010-5420
FMS	FMS 06	9900 Surratts Road, Cheltenham	20623-1324

FMS	FMS 07	18500 Roxbury Road, Hagerstown	21740
FMS	FMS 08	8601 Odell Road, Laurel	20708
FMS	FMS 09	1100 Brown Avenue, Cumberland	21502