

NAWCWDINST 12532.1
731000D
28 Aug 2002

NAWCWD INSTRUCTION 12532.1

From: Commander, Naval Air Warfare Center Weapons Division

Subj: ENVIRONMENTAL DIFFERENTIAL PAY FOR EMPLOYEES IN TRADES,
CRAFTS, AND LABOR OCCUPATIONS

Ref: (a) 5 CFR 532.511

Encl: (1) Schedule of Authorized Environmental Differentials
(2) Windchill Chart in Metric Units

1. Purpose. To publish the Naval Air Warfare Center Weapons Division (NAWCWD) policies and procedures for assigning environmental differential pay.
2. Cancellation. NAVWPNCENINST 12532.3A.
3. Background. Section 5343(c)(4) of Title 5, United States Code, contains provisions relating to environmental pay for prevailing wage grade employees. The law provides that the Office of Personnel Management (OPM) will establish a schedule of pay differentials for duty involving unusually severe working conditions or unusually severe hazards, see reference (a).

a. Coverage. The law and the OPM regulation apply to all wage grade employees, full-time, part-time, and intermittent. Enclosure (1) is the schedule of pay differentials authorized by the OPM for environmental differentials. Some of the environmental differentials listed in enclosure (1) are payable whenever the criteria in the category definition are met. Others are payable only if protective facilities, devices, or clothing have not practically eliminated the hazard, physical hardship, or working condition of an unusually severe nature. Environmental pay has been authorized by the OPM for:

(1) Exposure to an unusually severe hazard that could result in significant injury, illness, or death (such as working on a high structure or on an open structure) when adverse conditions such as darkness, lightning, steady rain, snow, sleet, ice, or high wind velocity exist.

(2) Exposure to an unusually severe physical hardship under circumstances that cause significant physical discomfort or distress.

(3) Exposure to an unusually severe working condition under circumstances involving exposure to fumes, dust, or noise that cause significant distress or discomfort in the form of

nausea or skin, eye, ear, or nose irritation or conditions that cause abnormal soil of body and clothing.

b. Request for Change. Any request for change to or inclusion of additional duties to enclosure (1) must be submitted to the Vice Commander through the Advisory Pay Committee for forwarding to the Deputy Assistant Secretary of the Navy (DASN) Civilian Personnel/Equal Employment Opportunity. Each request must contain detailed information showing:

- (1) The nature of the duty.
- (2) The degree to which the employee is exposed to hazard or physical hardship.
- (3) The length of time during which the duty will continue to exist.
- (4) The degree to which control may be exercised over the physical hardship or hazard.
- (5) The estimated cost to the agency if the request is approved.

If the DASN agrees that the duty described warrants additional pay, the request will be forwarded to the OPM through the Deputy Assistant Secretary of Defense (DASD) Civilian Personnel Policy (CPP) for approval.

c. Effective Dates. Effective dates of duty approved by the OPM for environmental pay differentials are shown in the last column of enclosure (1).

4. Responsibilities

a. Vice Commander (or designee) will make the final NAWCWD decision for recommending new work situations that qualify employees to receive an environmental pay differential.

b. Ad Hoc Advisory Pay Committee will analyze requests for new environmental pay differentials and provide recommendations to the Vice Commander. The committee will consist of:

- (1) A representative from the Human Resources Department to serve as chairperson of the committee.
- (2) A representative of the proposing code.
- (3) A representative from the Safety Program Office.
- (4) A Personnel Management Advisor for the proposing code.

(5) A representative of affected bargaining units.

c. Human Resources Department will:

(1) Assist management, employees, and concerned groups regarding their roles in the payment of environmental pay differentials.

(2) Chair the Advisory Pay Committee. Document and forward to the Vice Commander recommendations on environmental pay differential requests that include the position of the Advisory Pay Committee.

(3) Audit the use of environmental pay differentials.

d. Supervisors will:

(1) Take action to limit unsafe or unusually severe working conditions to whatever extent possible by providing necessary protective equipment and devices to reduce exposure, to the greatest practical degree, and in consultation with the safety and occupational health specialists.

(2) Ensure that an environmental pay differential is authorized only when exposure warranting it is necessary.

e. Employees will in the course of performing their regularly assigned duties, be alert to unsafe and/or unhealthy practices, equipment, and conditions and report any unsafe and/or unhealthy practices or conditions to their immediate supervisor.

f. Grievances

(1) Employees covered by a Collective Bargaining Agreement will file appeals of environmental pay decisions through the negotiated grievance procedure of their Collective Bargaining Agreement.

(2) Employees not covered by a Collective Bargaining Agreement will use the Administrative Grievance Procedure to appeal environmental pay decisions.

5. Directive Responsibility. The Director, Human Resources Department, Code 730000D, is responsible for keeping this instruction current.

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28 Aug 2002

/s/
M. J. SWANEY

Schedule of Authorized Environmental Differentials

Appendix A to Subpart E of Part 532
Schedule of Environmental Differentials Paid for Exposure to Various Degrees of
Hazards, Physical Hardships, and Working Conditions of an Unusual Nature

Part I -- Payment for Actual Exposure

<u>Category for Which Payable</u>	<u>Rate Of Hazard Pay Differential (Percent)</u>	<u>Effective Date</u>
1. <u>Flying</u> . Participating in flights under one or more types of the following conditions: <ul style="list-style-type: none">a. Test flights of a new or repaired plane or modified plane when the repair or modification can affect the flight characteristics of the plane;b. Flights for test performance of the plane under adverse conditions, such as, in low altitude or severe weather conditions, maximum load limits, or overload;c. Test missions for the collection of measurement data where two or more aircraft are involved and flight procedures require formation flying and/or rendezvous at various altitudes and aspect angles;d. Flights deliberately undertaken in extreme weather conditions, such as, flying into a hurricane to secure weather data;e. Flights to deliver aircraft that have been prepared for one-time flight without being test flown before the delivery flight;f. Flights for pilot proficiency training in aircraft new to the pilot under simulated	100	1 Nov 1970

emergency conditions that parallel conditions encountered in performing flight tests;

g. Low-level flights in small aircraft including helicopters at altitude of 150 meters (500 feet) and under in daylight and 300 meters (1,000 feet) and under at night when the flights are over mountainous terrain, or in fixed-wing aircraft involving maneuvering at the heights and times specified above, or in helicopters maneuvering and hovering over water at altitudes of less than 150 meters (500 feet);

h. Low-level flights in an aircraft flying at altitudes of 60 meters (200 feet) and under while conducting wildlife surveys, law enforcement activities, animal depredation abatement, making agricultural applications and conducting or facilitating search and rescue operations; flights in helicopters at low levels involving line inspection, maintenance, erection, or salvage operations;

i. Flights involving launch or recovery aboard an aircraft carrier;

j. Reduced gravity light testing in an aircraft flying a parabolic flight path and providing a testing environment ranging from weightlessness up through 20 meters per second $\sqrt{2}$ (2 gravity) conditions.

2. High Work

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1 Nov 1970

a. Working on any structure of at least 30 meters (100 feet) above the ground, deck, floor, or roof or from the bottom of a tank or pit;

b. Working at a lesser height:

(1) If the footing is unsure or the structure is unstable; or

(2) If safe scaffolding, enclosed ladders, or other similar protective facilities are not adequate (e.g., working from a swinging stage, a boatswain chair, or a similar support); or

(3) If adverse conditions, such as darkness, steady rain, high wind, icing, lightning, or similar environmental factors that render working at such heights hazardous.

3. Floating Targets. Servicing equipment onboard a target ship or barge in which the employee is required to board or leave the target vessel by small boat or helicopter. 15 1 Nov 1970

4. Dirty Work. Performing work that subjects the employee to soil of body or clothing: 4 1 Nov 1970

a. Beyond that normally to be expected in performing the duties of the classification; and

b. Where the condition is not adequately alleviated by the mechanical equipment or protective devices being used, or that are readily available, or when such devices are not feasible for use due to health considerations (excessive temperature, asthmatic conditions, etc); or

c. When the use of mechanical equipment or protective devices or protective clothing results in an unusual degree of discomfort.

5. Cold Work 4 1 Nov 1970

a. Working in cold storage or other climate-controlled areas where the employee is subjected to temperatures at or below freezing (0 degrees Celsius; 32 degrees Fahrenheit).

b. Working in cold storage or other climate-controlled areas where the employee is subjected to temperatures at or below freezing (0 degrees 13 Mar 1977

Celsius; 32 degrees Fahrenheit) where such exposure is not practically eliminated by the mechanical equipment or protective devices being used.

6. Hot Work 4 1 Nov 1970

a. Working in confined spaces wherein the employee is subjected to temperatures in excess of 43 degrees Celsius (110 degrees Fahrenheit).

b. Working in confined spaces wherein the employee is subjected to temperatures in excess of 43 degrees Celsius (110 degrees Fahrenheit) where such exposure is not practically eliminated by the mechanical equipment or protective devices being used. 13 Mar 1977

7. Welding Preheated Metals. Welding various metals or performing an integral part of the welding process when the employee must work in confined spaces in which large sections of metal have been preheated to 66 degrees Celsius (150 degrees Fahrenheit) or more and the discomfort is not alleviated by protective devices or other means or discomforting protective equipment must be worn. 4 1 Nov 1970

8. Micro-Soldering or Wire Welding and Assembly. Working with binocular-type microscopes under conditions that severely restrict the movement of the employee and impose a strain on the eyes, in the soldering or wire welding and assembly of miniature electronic components. 4 1 Nov 1970

9. Exposure to Hazardous Weather or Terrain. Exposure to dangerous conditions of terrain, temperature and/or wind velocity, while working or traveling when such exposure introduces risk of significant injury or death to employees, such as the following: 25 1 Jul 1972

a. Working on cliffs, narrow ledges, or steep mountainous slopes, with or without mechanical work equipment, where a loss of footing would result in serious injury or death.

b. Working in areas where there is a rockfall or avalanche danger.

c. Traveling on secondary or unimproved roads to isolated mountaintop installations at night, or under adverse weather conditions (snow, rain, or fog) that limits visibility to less than 30 meters (100 feet), when there is danger of rock, mud, or snowslides.

d. Traveling in the wintertime, either on foot or by vehicle, over secondary or unimproved roads or snow trails, in sparsely settled or isolated areas to isolated installations when there is danger of avalanche, or during "whiteout" phenomenon that limits visibility to less than 3 meters (10 feet).

e. Working or traveling in sparsely settled or isolated areas with exposure to temperatures and/or wind velocity shown to be of considerable or very great danger on the windchill chart (see enclosure (2)) and shelter (other than temporary shelter) or assistance is not readily available.

f. Snowplowing or snow and ice removal on primary, secondary, or other class of roads, when:

(1) there is danger of avalanche; or

(2) there is danger of missing the road and falling down steep mountainous slopes, due to the lack of snowstakes, "whiteout" conditions, or sloping icepack covering the snow.

10. Unshored Work. Working in excavation areas before the installation of proper shoring or

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1 Jul 1972

other securing barriers or in catastrophic areas where there is a possibility of cave-in, building collapse, or falling debris when such exposures introduce risk of significant injury or death to employees, such as the following:

a. Working adjacent to the walls of an unshored excavation at depths greater than 1.8 meters (6 feet), except when the full depth of the excavation is in stable solid rock, hard slag, or hard shale or the walls have been graded to the angle of repose (that is, where the danger of slides is practically eliminated) or when work is performed at a distance from the wall that is less than the height of the wall.

b. Working within or immediately adjacent to a building or structure that has been severely damaged by earthquake, fire, tornado, or similar cause.

c. Working underground in the construction and/or inspection of tunnels and shafts before the necessary lining of the passageway has been installed.

d. Duty underground in abandoned mines where the lining of tunnels or shafts is in a deteriorated condition.

11. Ground Work Beneath Hovering Helicopter. 15 1 Jul 1972
Participating in an operation to attach or detach an external load to helicopter hovering just overhead.

12. Hazardous Boarding or Leaving of Surface Craft. 15 1 Jul 1972
Boarding or leaving vessels or transferring equipment to or from a surface craft under adverse conditions of foul weather, ice, or night when sea state is high (0.9 meter (3 feet) and above), and deck conditions and/or wind velocity in relation to the size of the craft introduce unusual risks to employees, such as the following:

- a. Boarding or leaving vessels at sea.
- b. Boarding or leaving or transferring equipment between small boats/rafts and steep, rocky, or coral-surrounded shorelines.
- c. Transferring equipment between a small boat and a rudimentary dock by improvised or temporary facility, such as, an unfastened plank leading from boat to dock.
- d. Boarding or leaving or transferring equipment from or to ice covered floats, rafts, or similar structures when there is danger of capsizing due to the added weight of the ice.

13. Cargo Handling During Lightering Operations. Off-loading of cargo and supplies from surface ships to Landing Craft-Medium (LCM) boats when swells or wave action are sufficiently severe as to cause sudden listing or pitching of the deck surface or shifting or falling of equipment, cargo, or supplies that could subject the employee to falls, crushing, or ejection into the water or injury by swinging cargo hooks. 8 1 Jul 1972

14. Duty Aboard Surface Craft. Duty aboard a surface craft when the deck conditions or sea state and wind velocity in relation to the size of the craft introduces the risk of significant injury or death to employees, such as the following: 15 30 Jul 1972

- a. Participating as a member of a water search and rescue team in adverse weather conditions when winds are blowing at 56 km/h (35 m.p.h.-- gale winds classification) or in water search and rescue operations at night.

b. Participating as a member of a weather projects team when work is performed under adverse weather conditions, when winds are blowing at 56 km/h (35 m.p.h.), and/ or when seas are in excess of 4.3 meters (14 feet), or when working on outside decks when decks are slick and icy when swells are in excess of 0.9 meter (3 feet).

c. When embarking, disembarking, or traveling in a small craft (boat) on Lake Ponchartrain when wind direction is from north northeast or northwest, and wind velocity is over 7.7 meters per second (15 knots); or when travel on Lake Ponchartrain is necessary in a small craft, without radar equipment, due to emergency or unavoidable conditions and the trip is made in dense fog run procedures.

d. Participating in deep-research vessel sea duty wherein the team member is engaged in handling equipment on or over the side of the vessel when the sea state is high (6.2-meter-per-second (12-knot) winds and 0.9 meter (3-foot) waves) and the work is done on relatively unprotected deck areas.

e. Transferring from a ship to another ship via a chair harness hanging from a highline between the ships when both vessels are under way.

f. Duty performed on floating platforms, camels, or rafts using tools, equipment, or materials associated with ship repair or construction activities, where swells or wave action are sufficiently severe to cause sudden listing or pitching of the deck surface or dislodgement of equipment that could subject the employee to falls, crushing, or ejection into the water.

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| <p>15. <u>Work at Extreme Heights</u>. Working at heights 30 meters (100 feet) or more above the ground, deck, floor, or roof; or from the bottom of a tank or pit on such open structures as towers, girders, smokestacks, and similar structures:</p> <p>a. If the footing is unsure or the structure is unstable; or</p> <p>b. If safe scaffolding, enclosed ladders or other similar protective facilities are not adequate (for example, working from a swinging stage, boatswain chair, or a similar support); or</p> <p>c. If adverse conditions, such as darkness, steady rain, high wind, icing, lightning, or similar environmental factors that render working at such heights hazardous.</p> | <p>50</p> | <p>22 Oct 1972</p> |
| <p>16. <u>Fibrous Glass Work</u>. Working with or in proximity to fibrous glass material which results in exposure of the skin, eyes, or respiratory system to irritating fibrous glass particles or slivers where exposure is not practically eliminated by the mechanical equipment or protective devices being used.</p> | <p>6</p> | <p>28 Feb 1975</p> |
| <p>17. <u>High Voltage Electrical Energy</u>. Working on energized electrical lines rated at 4,160 volts or more that are suspended from utility poles or towers, when adverse weather conditions, such as steady rain, high winds, icing, lightning, or similar environmental factors make the work unusually hazardous.</p> | <p>50</p> | <p>11 Apr 1977</p> |
| <p>18. <u>Welding, Cutting, or Burning in Confined Spaces</u>. Welding, cutting, or burning within a confined space that necessitates working in a</p> | <p>6</p> | <p>18 Jan 1978</p> |

horizontal or nearly horizontal position, under conditions requiring egress of at least 4.3 meters (14 feet) over and through obstructions including:

a. Access openings and baffles having dimensions that greatly restrict movements;
and

b. Irregular inner surfaces of the structure or structure components.

Part II--Payment on Basis of Hours in Pay Status

<u>Category for Which Payable</u>	<u>Rate Of Hazard Pay Differential (Percent)</u>	<u>Effective Date</u>
1. <u>Duty Aboard a Submerged Vessel</u> . Duty aboard a submarine or other vessel, such as, a deep-research vehicle while submerged.	50	1 Nov 1970
2. <u>Explosives and Incendiary Material (high degree hazard)</u> . Working with or in proximity to explosives and incendiary materials that involve potential personal injury, such as, permanent or temporary, partial or complete loss of sight or hearing, partial or complete loss of any or all extremities; other partial or total disabilities of equal severity; and/or loss of life resulting from work situations wherein protective devices and/or safety measures either do not exist or have been developed but have not practically eliminated the potential for such personal injury. Normally, such work situations would result in extensive property damage requiring complete replacement of equipment and rebuilding of the damaged area; and could result in personal injury to adjacent employees, such as, working with, or in proximity to operations involved in research, testing, manufacturing, inspection, renovation, maintenance, and disposal; for example: a. Screening, blending, drying, mixing, and pressing of sensitive explosives and pyrotechnic compositions, such as, lead azide, black powder, and photoflash powder.	8	1 Nov 1970

- b. Manufacturing and distributing of raw nitroglycerine.
- c. Nitration, neutralization, crystallization, purification, screening, and drying of high explosives.
- d. Manufacturing of propellants, high explosives, and incendiary materials.
- e. Melting, cast loading, pellet loading, drilling, and thread cleaning of high explosives.
- f. Manufacturing of primary or initiating explosives, such as lead azide.
- g. Manufacturing of primer or detonator mix.
- h. Loading and assembling high-energy output flare pellets.
- i. All dry-house activities involving propellants or explosives.
- j. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive explosives and incendiary materials.
- k. All operations involving fire fighting on an artillery range or at an ammunition manufacturing plant or storage area, including heavy duty equipment operators, truck drivers, etc.
- l. All operations involving regrading and cleaning of artillery ranges.
- m. At-sea shock and vibration tests. Arming explosive charges and/or working with, or in proximity to, explosive-armed charges in connection with at-sea shock and vibration tests of naval vessels, machinery, equipment, and supplies.

n. Handling or engaging in destruction operations on an armed (or potentially armed) warhead.

3. Explosives and Incendiary Materials (low degree hazard) 4

a. Working with or in proximity to explosives and incendiary materials that involve potential injury, such as, laceration of hands, face, or arms of the employee engaged in the operation and possible adjacent employees; minor irritation of the skin; minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used.

1 Nov 1970

b. Working with or in proximity to explosives and incendiary materials that involve potential injury, such as, laceration of hands, face, or arms of the employee engaged in the operation and possible adjacent employees; minor irritation of the skin; minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used and wherein protective device and/or safety measures have not practically eliminated the potential for injury, such as the following:

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(1) All operations involving loading, unloading, storage, and hauling of explosive and incendiary ordnance material other than small arms ammunition. (Distribution of raw nitroglycerine is covered under high degree hazard, see category 2 above).

(2) Duties, such as weighing, scooping, consolidating, and crimping operations incident to the manufacture of stab, percussion, and low energy electric detonators (initiators) using sensitive primary explosives compositions where initiation would be kept to a low order of propagation due to the limited amounts permitted to be present or handled during the operations.

(3) Load, assembly, and packing of primers, fuses, propellant charges, lead cups, boosters, and time-train rings.

(4) Weighing, scooping, loading in bags and sewing of ignitor charges and propellant zone charges.

(5) Loading, assembly, and packing of hand-held signals, smoke signals, and colored marker signals.

(6) Proof-testing weapons with a known overload of powder or charges.

(7) Arming/disarming or the installation/removal of any squib, explosive device, or component thereof, connected to or part of a solid propulsion system, including work situations involving removal, inspection, test, and installation of aerospace vehicle egress and jettison systems and other cartridge actuated devices and rocket assisted systems or components thereof, when accidental or inadvertent operation of the system or a component might occur.

4. Poisons (toxic chemicals) High Degree Hazard. Working with or in proximity to poisons (toxic chemicals), other than tear gas or similar irritants, that involves potential serious personal injury, such as, permanent or temporary, partial or complete loss of faculties and/or loss of life including exposure of an unusual degree to toxic chemicals, dust, or fumes of equal toxicity generated in work situations by processes required to perform work assignments wherein protective devices and/or safety measures have been developed, however, have not practically eliminated the potential for personal injury, such as in the following:

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- a. Handling and storing toxic chemical agents including monitoring of areas to detect presence of vapor or liquid chemical agents; examining of material for signs of leakage or deteriorated material; decontaminating equipment and work sites; work relating to disposal of deteriorated material (exposure to conjunctivitis, pulmonary edema, blood infection, impairment of the nervous system, possible death).
- b. Renovation, maintenance, and modification of toxic chemicals, guided missiles, and selected munitions.
- c. Operating various types of chemical engineering equipment in a restricted area, such as reactors, filters, stripping units, fractioning columns, blenders, mixers, pumps, and the like used in the development, manufacturing, and processing of toxic or experimental chemical warfare agents.
- d. Demilitarizing and neutralizing toxic chemical munitions and chemical agents.
- e. Handling or working with toxic chemicals in restricted areas during production operations.
- f. Preparing analytical reagents, carrying out colorimetric and photometric techniques, injecting laboratory animals with compounds having toxic, incapacitating, or other effects.
- g. Recording analytical and biological tests results where subject to above types of exposure.
- h. Visually examining chemical agents to determine conditions or detect leaks in storage containers.

- i. Transferring chemical agents between containers.
- j. Salvaging and disposing of chemical agents.

5. Poisons (toxic chemicals) Low Degree Hazard 4

a. Working with or in proximity to poisons (toxic chemicals other than tear gas or similar irritating substances) in situations for which the nature of the work does not require the individual to be in as direct contact with, or exposure to, the more toxic agents as in the case with the work described under high hazard for this class of hazardous agents.

1 Nov 1970

b. Working with or in proximity to poisons (toxic chemicals other than tear gas or similar irritating substances) in situations for which the nature of the work does not require the individual to be in as direct contact with, or exposure to, the more toxic agents as in the case with the work described under high hazard for this class of hazardous agents and wherein protective devices and/or safety measures have not practically eliminated the potential for personal injury as in: Handling for shipping, marking, labeling, hauling, and storing loaded containers of toxic chemical agents that have been monitored.

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6. Microorganisms (high degree hazard). 8

Working with or in proximity to microorganisms that involves potential personal injury, such as death or temporary, partial, or complete loss of faculties or ability to work due to acute, prolonged, or chronic disease. These are work situations wherein the use of safety devices and equipment, medical prophylactic procedures, such as, vaccines and antiserums and other safety

1 Nov 1970

measures do not exist, or have been developed; however, have not practically eliminated the potential for personal injury, such as the following:

a. Direct contact with primary containers of organisms pathogenic for man, such as culture flasks, culture test tubes, hypodermic syringes and similar instruments, and biopsy and autopsy material. Operating or maintaining equipment in biological experimentation or production.

b. Cultivating virulent organisms on artificial media including embryonated hen's eggs and tissue cultures where inoculation or harvesting of living organisms is involved for production of vaccines, toxides, etc., or for sources of material for research investigations, such as, antigenic analysis and chemical analysis.

7. Microorganisms (low degree hazard)

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a. Working with or in proximity to microorganisms in situations for which the nature of the work does not require the individual to be in direct contact with primary containers of organisms pathogenic for man, such as culture flasks, culture test tubes, hypodermic syringes and similar instruments, and biopsy and autopsy material.

1 Nov 1970

b. Working with or in proximity microorganisms in situations for which the nature of the work does not require the individual to be in direct contact with primary containers of organisms pathogenic for man, such as culture flasks, culture test tubes, hypodermic syringes and similar instruments, and biopsy and

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autopsy material and wherein the use of safety devices and equipment and other safety measures have not practically eliminated the potential for personal injury.

8. Pressure Chamber and Centrifugal Stress.

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1 Jul 1972

Exposure in a pressure chamber that subjects employee to physical stresses or where there is potential danger to participants by reason of equipment failure or reaction to the test conditions; or exposure that subjects an employee to a high degree of centrifugal force that causes an unusual degree of discomfort, such as in the following:

a. Participating as a subject in diving research tests that seek to establish limits for safe pressure profiles, by working in a pressure chamber simulating diving or as an observer to the test or as a technician assembling underwater mock-up components for the test when the observer or technician is exposed to high pressure gas piping systems, gas cylinders, and pumping devices that are susceptible to explosive ruptures.

b. Participating in altitude chamber studies ranging from 5,500 to 45,700 meters (18,000 to 150,000 feet) either as subject or as observer exposed to the same conditions as the subject.

c. Participating as a subject in centrifuge studies involving elevated G forces above the level of 49 meters per second $\sqrt{2}$ (5 G's) whether or not at reduced atmospheric pressure.

d. Participating as a subject in a rotational flight simulator in studies involving continuous rotation in one axis through 360 degrees at rotation rates greater than 15 rpm for periods exceeding three minutes.

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| 9. <u>Work in Fuel Storage Tanks.</u> When inspecting, cleaning, or repairing fuel storage tanks where there is no ready access to an exit, under conditions requiring a breathing apparatus because all or part of the oxygen in the atmosphere has been displaced by toxic vapors or gas, and failure of the breathing apparatus would result in serious injury or death within the time required to leave the tank. | 8 | 1 Jul 1972 |
| 10. <u>Firefighting.</u> Participating or assisting in firefighting operations on the immediate fire scene and in direct exposure to the hazards inherent in containing or extinguishing fires. | | 1 Jul 1972 |
| a. High degree: Fighting forest and range fires on the fireline. | 25 | |
| b. Low degree: All other firefighting. | 8 | |
| 11. <u>Experimental Landing/Recovery Equipment Tests.</u> Participating in tests of experimental or prototype landing and recovery equipment where personnel are required to serve as test subjects in spacecraft being dropped into the sea or laboratory tanks. | 8 | 1 Jul 1972 |
| 12. <u>Land Impact or Pad Abort of Space Vehicle.</u> Actual participation in dearming and safeing explosive ordnance, toxic propellant, and high-pressure vessels on vehicles that have land impacted or on vehicles on the launch pad that have reached a point in the countdown where no remote means are available for returning the vehicle to a safe condition. | 8 | 1 Jul 1972 |
| 13. <u>Mass Explosives and/or Incendiary Material.</u> Working within a controlled danger area in, on, or around wharves, | 4 | 1 Jul 1972 |

or transient voltage and current buildup on or within the system when the system is in a "go" condition on the test stand or sled, can result in explosion, fire, premature ignition, or firing, such as the following:

a. Test stand or track tests, when adequate protective devices and/or safety measures either do not exist or have been developed; however, have not practically eliminated the potential for personal injury, under any of the following conditions:

(1) Tanks being pressurized above normal servicing pressure.

(2) Assembly, disassembly, or repair of contaminated plumbing containing inhibited red fuming nitric acid and unsymmetrical dimethylhydrazine or other hypergolic fuels is required.

(3) Fueling and defueling.

b. Hoisting hypergolic liquid fueled systems into, or out of a test stand, where the working area is confined, and external plumbing is present resulting in a situation where the plumbing may be damaged causing a leak.

c. Tests on foreign missiles where technical data is questionable or not available.

d. Manned test firings of small, close support missiles for which safety performance data is not yet available.

e. Removal of a missile, propulsion system or component thereof from a test stand, fixture, or environmental chamber where there is reason to believe that the item

can be unusually hazardous due to damage resulting from the test.

16. Asbestos. Working in an area where airborne concentrations of asbestos fibers can expose employees to potential illness or injury and protective devices or safety measures have not practically eliminated the potential for personal illness or injury.

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9 Mar 1975

WINDCHILL CHART IN METRIC UNITS											
LOCAL TEMPERATURE (F)											
Wind Speed (MPH)	32	23	14	5	-4	-13	-22	-31	-40	-49	-58
Calm	32	23	14	5	-4	-13	-22	-31	-40	-49	-58
5	29	20	10	1	-9	-18	-28	-37	-47	-56	-65
10	18	7	-4	-15	-26	-37	-48	-59	-70	-81	-92
15	13	-1	-13	-25	-37	-49	-61	-73	-85	-97	-109
20	7	-6	-19	-32	-44	-57	-70	-83	-96	-109	-121
25	3	-10	-24	-37	-50	-64	-77	-90	-104	-117	-130
30	1	-13	-27	-41	-54	-68	-82	-97	-109	-123	-137
35	-1	-15	-29	-43	-57	-71	-85	-99	-113	-127	-142
40	-3	-17	-31	-45	-59	-74	-87	-102	-116	-131	-145
45	-3	-18	-32	-46	-61	-75	-89	-104	-118	132	-147
50	-4	-18	-33	-47	-62	-76	-91	-105	-120	-134	-148
	Little Danger		Considerable Danger			Very Great Danger					
For Properly Clothed Persons											
Danger From Freezing of Exposed Flesh											