

National Aeronautics and  
Space Administration

**Headquarters**

Washington, DC 20546-0001



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MAR 2 2000

Mr. John Plummer  
Office of Federal Agency Programs  
U.S. Department of Labor  
Washington, DC 20210

Dear Mr. Plummer:

It is my pleasure to provide you the 1999 Annual Report of the National Aeronautics and Space Administration Occupational Safety and Health Program per your guidelines.

NASA continues to maintain a highly effective safety and health program. The Annual Report covers the sustained superior performance statistics as well as specific accomplishments in the safety and health program areas.

Questions concerning NASA's Safety and Health Program should be directed to William S. Barry, M.D., Manager of the NASA Occupational Health Program, at (407) 867-6341, or Mr. James D. Lloyd, Director, Safety and Risk Management Division, at (202) 358-0557.

Sincerely,

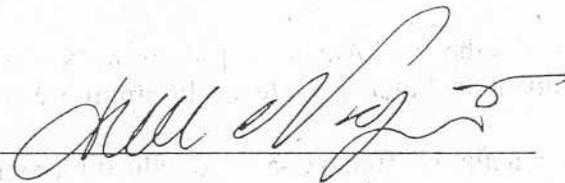
A handwritten signature in black ink, appearing to read "Arnauld E. Nicogossian".

Arnauld E. Nicogossian, M.D.  
Designated Safety and Health Official

Enclosure

ANNUAL OCCUPATIONAL SAFETY AND HEALTH REPORT  
OF THE  
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

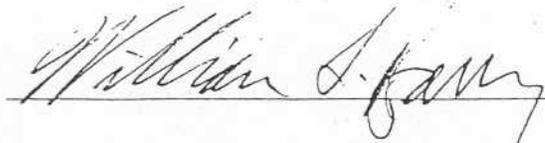
Reporting Period: 1999



Arnault E. Nicogossian, MD  
Designated Agency Safety and Health Official



James D. Lloyd, PE  
Director of Safety and Risk Management



William S. Barry, MD, MPH  
Occupational Health Program Manager

## ANNUAL REPORT ON OCCUPATIONAL SAFETY AND HEALTH

Fiscal Year: 1999  
Agency Name: National Aeronautics and Space Administration  
Point of Contact: Dr. Arnauld Nicogossian  
Title: Designated Safety and Health Official  
Phone number: (202) 358-0122  
Fax Number: (202) 358-4330  
# of employees: Approximately 17,000

**1.a. Use agency injury/illness data to display the annual statistics for fatalities and lost-time disabilities:**

NASA had no fatalities for FY 1999. In fact NASA has experienced no occupational fatality since 1986.

NASA continues to achieve one of the lowest injury/illness rates in the Federal sector. A review of Federal safety performance data indicates that NASA consistently rates in the top three Federal agencies with respect to best lost-time injury rate performance. Specific NASA performance metrics for FY 1999 reflects a lost-time injury/illness rate of 0.19 cases per 200,000 hours.

The trend for NASA Workers' Compensation cost has also been relatively stable. For the past 5 years those costs are as follows:

FY 1995	\$7.3M
FY 1996	\$6.8M
FY 1997	\$7.1M
FY 1998	\$7.3M
FY 1999	\$6.2M

Significant case tracking and case management efforts continued into FY 1999. NASA utilized the Veterans Administration Workers' Compensation Data Management System and the Department of Labor Agency Query System to provide real time OWCP claims status to NASA Center personnel involved with claims management. Special case management focus is placed on Centers with high Workers' Compensation costs. Those efforts, including Centers re-visiting of long-term disability claims and providing more restricted duty work availability to NASA employees have contributed to a 15 percent reduction in OWCP claims for FY 1999 – the lowest in the last 5 fiscal years.

The trend for FY 2000 OWCP costs shows sustained improvement over FY 1995-1998 with \$3.0M of OWCP costs experienced over the first half of FY 2000. If that trend continues, FY 2000 would be the lowest cost to NASA in over a decade.

**1.b. Use Agency data to display the most recent OWCP chargeback and COP costs:**

Item 1.a above delineates the past 5 years of OWCP costs. Continuation of pay (COP) costs for NASA are as follows:

<u>FY</u>	<u>COP Cases</u>	<u>COP Costs</u>
FY 1998	95	\$101,850
FY 1999	58	\$ 97,217

**1.c. Use Agency accident or incident reporting to explain any significant trends or major causes or sources of fatalities and lost-time disabilities which occurred last year:**

NASA had no fatalities for FY 1999

The top four causes of injuries and illnesses at NASA are attributable to the following:

1. Slips, trips and falls
2. Lifting and moving operations
3. Bumped into/struck by
4. Repetitive motion

**2. Describe safety and occupational health program accomplishments and initiatives implemented last fiscal year to control the trends and major causes of lost-time disabilities in your agency and to improve your overall safety and occupational health program:**

The major success story for NASA's occupational safety and health program is the sustained superior performance in managing an incredibly broad scope of occupational hazards (in the field, in the office and laboratories, and in the aerospace arena), coupled with the Agency's continuous improvement efforts. NASA continued implementation of an even more vigorous safety program at all sites to enhance even further the theme of line management accountability for safety and health. This was modeled after the program philosophy of a corporation with a recognized world class program. The NASA Agency Safety Initiative (ASI) was initiated in FY 1998 with the goal of moving NASA from the best Federal Agency Safety program to a world class safety program. The ASI was aggressively pursued in FY 1999 with unprecedented leadership involvement by the NASA Administrator and his Senior Staff. For example, the NASA Administrator adopted a program for weekly health and safety discussions with the heads of all NASA

Headquarters Offices and the NASA Center Directors. Each week the Administrator discusses a key topic, voices his personal concerns for maintaining successful programs in that area, and challenges his management team to conduct vulnerability assessments in their facilities and programs for further improvement.

The NASA Administrator has carried the message of world class safety performance to all levels of NASA, its contractors, Congress, our International Partners and in his outreach activities. He has made it clear that NASA will not compromise the safety of the public, its astronauts and pilots, the NASA workforce, or high-value equipment and property.

The FY 1999 campaign for world class safety was centered on a new theme titled "Mission success starts with safety" and remains focused around the primary elements listed below.

- Management commitment
- Safety and health policy
- Planning and performance expectations/measurements
- Safety and health training, education, and awareness
- Program assessment methodology
- Functional management reviews
- External outreach
- System/equipment safety upgrades

Examples of the specific actions being taken as a result of that initiative include the following actions:

Policy letter from the Administrator to every NASA employee and contractor stating the intent for NASA to become a "World Class" safety leader.

Insertion of specific safety requirements into the NASA Strategic Plan and project management and planning policy.

Development of specific safety and health performance criteria for NASA managers which clearly defines management's commitment.

Aggressive utilization of Agency senior management review boards (e.g., Occupational Health and Safety Board) to communicate and evaluate programmatic and institutional efforts and achievements with respect to safety and health.

Further development of Agency safety and health metrics.

Procurement strategy developments to assure appropriate safety and health requirements in all NASA procurement actions.

Senior Agency managers safety and health training efforts.

Each NASA Center maintains a dedicated safety and health program office responsible for supporting Center management with their safety responsibilities. Those offices conduct independent reviews of Center operations to assure compliance with all elements of 29 CFR Part 1960. Each Center's process for inspection and abatement is reviewed during NASA Headquarters program reviews. This inspection process, aimed at identifying both unsafe conditions and unsafe acts, is the primary point of emphasis to address the first three types of injuries listed above.

Early involvement of the safety and health staff in design and procurement activities is also a key risk management focus area at each NASA site. This effort enables identification of potential safety and health hazards at the earliest possible stage. Center safety and health professionals serve in a review and approval capacity for purchase of hazardous materials, hazardous equipment, personal protective equipment, and other key purchases which are key to controlling hazards.

The NASA Centers utilize ergonomics assessment teams, including representatives from industrial hygiene, safety, medical, fitness and line management, to help identify potential cumulative trauma and repetitive stress injury potential and to recommend job and equipment modifications.

Each NASA Center manages a process for the reporting of unsafe conditions. To augment those avenues of reporting for any employee wishing to remain anonymous, NASA continues to operate an independent and anonymous NASA Safety Reporting System (NSRS). This effort also includes a strong effort to insure reporting of "close calls" to identify problems needing correction.

Analysis of the cause of mishaps within NASA is accomplished via the mishap identification process. NASA has promulgated mishap investigation policies which require specific investigation ranging from the supervisors report of injury listing specific recommendations to prevent re-occurrence, to full mishap investigation boards for the incidents with actual or potential for serious injury or property damage. Those investigation efforts coupled with the inspection activities mentioned above constitute the Agency's primary approach for addressing the causes of injuries and controlling recurrences.

Injury and illness data represent primary metrics used by NASA management to assess and manage performance. While the safety performance of each NASA Center continues to represent best in class within the Federal sector, the NASA Administrator has set achieving "world class safety" as one of his key goals and is using the mishap rate to gauge progress.

NASA's goal is to have a zero lost-time injury rate. The lost-time injury and illness rate serves as one of management's evaluation metrics. NASA uses the standard metrics for

evaluation of its Centers including lost-time injury and illness rates, frequency of major mishaps, workers' compensation rates for each location, etc. Each year safety performance goals are established for each Center. Center performance against those goals as well as Center to Center comparisons are rolled up into an Annual Report given to NASA senior management and to the NASA Occupational Health and Safety Executive Board.

Injury/illness rates have historically been very low. These rates do not suffice as a proactive measure of safety performance. NASA developed a revised senior management performance review process which extends beyond the injury and illness statistics and which better represents the risk management requirements for Agency, program and project management. The new system is geared more to the maintenance of a safety and health program that meets the core requirements as defined by OSHA.

Management commitment and employee involvement  
Work-site hazard analysis  
Hazard prevention and controls  
Safety and health training

Each NASA Center Director was asked to evaluate their safety and health programs against these core elements and report their status to the NASA Administrator. Action plans were requested for any area not meeting the core requirements.

NASA has conducted an extensive safety and health policy updating process over the past 4 years.

Each NASA Center is reviewed on its performance in safety and health training. These reviews include both an annual self-assessment in which the Center reviews its internal training programs for compliance with OSHA requirements and a NASA Headquarters review of the Center training programs.

In addition, this past year the NASA Administrator asked each NASA Center Director to conduct a special assessment to ensure that:

All employees can identify and understand the hazards to which they may be exposed, and how to prevent harm to themselves and others from exposure to those hazards.

Supervisors understand their responsibilities relating to:

- Analyzing the work under their supervision to identify unrecognized potential hazards
- Maintaining and assuring the proper utilization of the physical OSH protection devices and controls used in their work areas
- Reinforcing employee awareness of potential hazards in their work and the protective measures required.

Managers understand their safety and health responsibilities under another core requirement area titled "management commitment and employee involvement."

NASA has continued with an aggressive safety and health training program utilizing a multimedia approach including:

On-site Instructor Based Courses - The local safety and health professionals at each Center present courses to on-site personnel covering the broad range of topics required by OSHA (i.e., confined space entry, lock-out/tag-out, bloodborne pathogens, hearing protection, respiratory protection, etc.)

NASA Safety Training Center (NSTC) Courses - Each year NASA invests close to \$1,000,000 through this center located at Johnson Space Center for course development and deployment to the NASA Centers. Over 3,000 people have attended instructor-based safety training presented by the NSTC. The NSTC has a course catalogue that identifies 50 safety and health courses that can be given Agencywide.

Web-based Training - NASA Safety and Mission Assurance (SMA) has established web-based training for all Agency and contractor managers, program directors, and employees. Over 1,000 NASA and contractor personnel are enrolled in over 90 hours of web-based safety and mission assurance training.

Special training contracts - Each year NASA identifies specific courses needed Agencywide and contracts for that training. For example, this past year NASA provided indoor air quality training, medical review officer training, non-ionizing radiation safety training, and biological and chemical warfare training to NASA Center personnel.

OSHA Voluntary Protection Program (VPP) STAR certification continues to be an area of emphasis and goal for NASA Centers to achieve. In addition to NASA's Langley Research Center (the first Federal facility to achieve VPP STAR status) achieving their Star certification in FY 1998, NASA's Johnson Space Center achieved that status in FY 1999. All other NASA Centers are currently planning to enter the VPP program over the next few years.

For the past 4 years, NASA has sponsored a "safety awareness day" at all NASA Centers. The day (or week in some cases) has been set aside for supervisors and employees to dwell on safety training or other safety and health topics concerning the workplace, operations, and flight.

An awareness campaign for the confidential NSRS has been conducted to ensure the reporting process has been directly advertised to every NASA civil service employee and the leading NASA contractors.

Close call reporting has been emphasized in new NASA policy. The Agency deems close call programs as critical for proper trend analysis and assessing the work environment for

the existence of mishap potential. The reporting of close calls by all NASA civil service and contractor personnel is considered mandatory.

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NASA mishap reporting and investigating procedures and guidelines have been enhanced to provide increased emphasis and analysis of root causes in all mishaps and close calls.

NASA's safety and health websites make safety and health information easily available. NASA employees now have even better access to regulatory requirements, NASA policy documents covering safety and health programs, training materials, etc.

NASA continued Federal interagency agreements for support of NASA programs including the Veterans Administration (workers' compensation tracking system), Food and Drug Administration (safety surveys of diagnostic x-ray equipment), GSA (development of web-based training programs), etc. Use of subject matter experts from other Federal agencies has proven to be effective and cost saving.

NASA is confident that by sustaining the efforts and attention we have devoted towards mishap prevention this past year, we will move from one of the best in the Federal sector to being the best in the world.