

NASA SP-7011 (98)



SPECIAL NOTICE INSIDE

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**A CUMULATIVE INDEX  
TO THE 1971 ISSUES OF  
A CONTINUING BIBLIOGRAPHY ON**

**AEROSPACE MEDICINE  
AND BIOLOGY**

**JANUARY 1972**

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

## ACCESSION NUMBER RANGES

NASA SP-7011 SUPPLEMENT NUMBER	STAR (N-10000 SERIES)	IAA (A-10000 SERIES)
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## **SPECIAL NOTICE**

The abstract sections of the monthly supplements of *Aerospace Medicine and Biology* can be bound separately. Individual abstracts can be located readily by means of the page numbers given at each entry, e.g., p0430 N71-26914. To assist the user in binding Supplements SP-7011 (86) through SP-7011 (97), a title page is included in the back of this Cumulative Index.

NASA SP-7011 (98)

A CUMULATIVE INDEX  
TO  
A CONTINUING BIBLIOGRAPHY ON  
**AEROSPACE MEDICINE  
AND BIOLOGY**

This Cumulative Index supersedes the indexes contained in supplements [SP-7011 (86) through SP-7011 (97)] published by NASA during 1971.



*Scientific and Technical Information Office*

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

WASHINGTON, D.C. JANUARY 1972

# Introduction

## WHAT THIS CUMULATIVE INDEX IS

This publication is a cumulative index to the abstracts contained in NASA SP-7011 (86) through NASA SP-7011 (97) of *Aerospace Medicine and Biology: A Continuing Bibliography*. NASA SP-7011, by means of supplements, serves as a current abstracting and announcement journal for references on bioscience and biotechnology. It has been compiled through the cooperative efforts of the American Institute of Aeronautics and Astronautics (AIAA), and the National Aeronautics and Space Administration (NASA).

Entries prepared by the two contributing organizations are identified as follows:

1. NASA entries by their STAR accession numbers (N71-10000 series);
2. AIAA entries by their IAA accession numbers (A71-10000 series).

## HOW THIS CUMULATIVE INDEX IS ORGANIZED

This Cumulative Index includes a subject index, a personal author index, and a corporate source index.

## HOW TO USE THE SUBJECT INDEX

Two types of cross-references appear in the subject index:

1. Use (U) references indicate that the subject term is not "postable," i.e., not a valid term, and that the following term or terms are used instead. For example:

DOSE

U DOSAGE

AIRLINERS

U COMMERCIAL AIRCRAFT

U PASSENGER AIRCRAFT

2. Narrower Term (NT) references refer the user to more specific headings in the same subject area, under which additional material on the subject may be found. For example:

FATIGUE (BIOLOGY)

NT AUDITORY FATIGUE

NT FLIGHT FATIGUE

NT MUSCULAR FATIGUE

In addition, a searcher may use the notations of content in the index to narrow further his quest for particular items. This is because subject terms can readily include more than one class of document. For example:

BIOLOGICAL EFFECT

Vibratory force effect upon  
biological systems, particularly  
human organism.

Biological effect of cosmic and  
solar radiations on human  
body at high altitudes.

illustrates a case where two references on different topics are listed under the same subject term.

### HOW TO USE THE PERSONAL AUTHOR INDEX

All personal authors used in the abstract-section citations in the individual Supplements appear in the index. Differences in transliteration schemes may require multiple searching of the index for variants of an author's name. For example:

EMELIANOV, M.D.  
and  
YEMELYANOV, M.D.

### HOW TO USE THE CORPORATE SOURCE INDEX

The corporate source index entries are abridged versions of the corporate sources used in the abstract-section citations in the individual Supplements. The corporate source supplementary (organizational component) does not appear in the index. For example:

NEW MEXICO STATE UNIV., LAS CRUCES. DEPT. OF BIOLOGY  
(Corporate source at citation)  
NEW MEXICO STATE UNIV., LAS CRUCES.  
(Corporate source index entry)

### IDENTIFICATION OF DESIRED SUPPLEMENT

The abstract and descriptive cataloging for any accession number selected from the indexes may be found in the appropriate Supplement. The *Accession Number Ranges* table showing the ranges of accession numbers (N71-10000 and A71-10000) contained in each Supplement appears on the inside front cover of this index. Once the range of accession numbers containing the selected accession number is found in this table, the desired Supplement number is given in the left-hand column of the table. For example:

N71-21150 was announced in Supplement 90.

### AVAILABILITY OF DOCUMENTS

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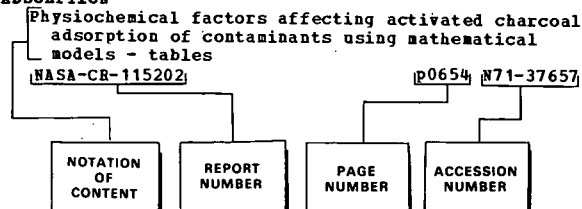
# Subject Index

**AEROSPACE MEDICINE AND BIOLOGY / a continuing bibliography** JANUARY 1972

1971 Cumulative Index

## Typical Subject Index Listing

### ADSORPTION



The Notation of Content (NOC), rather than the title of the document, is used to provide a more exact description of the subject matter. The NASA or AIAA accession number is included in each entry to assist the user in locating the abstract in the abstract section of an individual issue of *Aerospace Medicine and Biology*. The page number indicates the exact page on which the abstract is found. If applicable, a report number is also included as an aid in identifying the document.

## A

### ABBREVIATIONS

#### U SYMBOLS

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p0379 A71-30277

High altitude acclimatized humans, noting decreased coronary blood flow and increased oxygen extraction

p0380 A71-30283

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p0404 A71-31289

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p0486 A71-36867

Physiological responses of burro *Equus asinus* to oxygen lack in mountain altitudes, studying red blood cell and plasma volumes

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p0521 A71-38562

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 Biological rhythms and space nutrition - COSPAR Conference, Prague, May 1969, Life sciences and space research p0019 A71-11551
- Dry heat spacecraft sterilization-compatibility tests of reagents and growth media for planetary biological exploration p0022 A71-11563
- Extraterrestrial vestibular research, discussing geocentric and heliocentric otolithic regulation and gravitation theory p0093 A71-14759
- Existence of life under extreme environmental conditions, discussing biological temperature limits and adaptability to lack of water

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Soviet book on space biology and medicine covering cosmonaut selection and training, flight safety, normal life support factors, interplanetary space sojourn, etc
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Air blast effects on pulmonary ventilation, gas exchange, venous-arterial shunt and blood gas parameters

p0142 A71-17601

Gas exchange and muscular thermoregulation activity in rats under environmental oxygen deficiency

p0214 A71-21963

German book on clinical pathophysiology of respiration covering respiratory physiology, pulmonary gas exchange, respiratory control, hypoxia, hyperoxia, pressure breathing, etc

p0250 A71-23069

Book on gravity and acceleration effects on lungs covering breathing mechanics, ventilation distribution, blood flow, gas exchange, arterial oxygen saturation and pulmonary shunting  
[AGARDOGRAPH-133]

p0256 A71-23620

Pressure effects on human ventilation and gas exchange, determining stratified inhomogeneity during deep diving

p0318 A71-27126

Pulmonary gas exchange studied in computer models with series inequality of ventilation

p0319 A71-27131

Alveolar gas exchanges and cardiovascular functions during breath holding with air, determining resting oxygen consumption

p0319 A71-27135

Pulmonary oxygen toxicity development rate and effects on lung volume and alveolar-arterial gas exchange during oxygen breathing

p0376 A71-29501

Gas exchange, thermoregulatory muscle tone and electrical activity in rat muscles in hyperoxic atmosphere

p0412 A71-32533

Gas exchange metabolic fluctuations of nitrogen fixation, hydrogen evolution and photoreduction in *Rhodospirillum rubrum* as function of culture conditions and age

p0416 A71-33059

Hypokinesia effects on gas exchange and oxygen consumption in rats, noting weight losses

p0635 A71-44526

External respiration, gas exchange and blood circulation during passive orthostatic tests

p0636 A71-44537

Alveolar gas exchange and cardiovascular functions during respiratory inhibition  
[PB-194823]

p0220 N71-17097

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p0293 N71-20966

## GAS INJECTION

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oxygen, nitrogen and carbon dioxide intravenous injection in unanesthetized sheep with chronically implanted ultrasonic Doppler flow probes

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p0518 A71-38284

## GAS METERS

Simultaneous calibration of gas analyzers and meters for continuous process gas stream composition monitoring

p0522 A71-38566

## GAS MIXTURES

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Russian book on perception of respiratory medium and gas preference in man and animals covering hypoxic or hypercapnic media, inhalation times, gas mixtures, etc

p0027 A71-11823

Human expiratory oxygen and carbon dioxide partial pressure and dissociation curves for intrapulmonary gas mixing, using mass spectrometry

p0562 A71-40098

Hyperbaric normoxic breathing helium, nitrogen and neon gas mixture effects on EEG and reaction time in man

p0566 A71-40347

Investigating effects of oxygen, nitrogen, and rare gas mixtures at increased pressures on narcosis tendencies of man

p0054 N71-11110

External manifestations of neurophysiological effects and narcosis in subjects breathing helium-oxygen mixture at increased pressures

p0054 N71-11113

Investigating dynamics of narcosis in man from breathing nitrogen and rare gas mixtures under constant pressures for one hour

p0054 N71-11114

Complex effect of nitrogen, argon, and helium respiratory mixtures on humans at increased pressures

p0054 N71-11115

Physiological effects of artificial spacecraft atmospheres consisting of pure oxygen or oxygen nitrogen mixtures

p0107 N71-12288

Cryogenic underwater life support system for supplying breathing gas to buoyancy test subjects in submerged vehicle

p0284 N71-20239

Physiological effects of high carbon dioxide concentrations in helium/oxygen and argon/oxygen atmospheres on rats at ambient temperatures

p0437 N71-28250

Carbon monoxide purity standards for gas breathing apparatus of divers and toxic hazards under controlled hyperbaric atmospheres

p0494 N71-29358

Extrapolation of animal tolerances of air contaminants to human tolerances for diver breathing under hyperbaric conditions

p0494 N71-29359

No-decompression repetitive excursion dive format testing at 150 and 200 ft using helium-oxygen mixtures

p0542 N71-32770

## GAS POCKETS

Nitrogen and oxygen exit rate from subcutaneous gas pockets in rats during tissue blood flow elevation due to cobalt chloride injection

p0449 A71-34174

## GAS PRESSURE

Artificial respiration in elevated gas pressure chamber to revive organism after clinical death by rapid decompression

p0324 A71-27745

Functional-biochemical shifts in rats central nervous system during initial stage of increased oxygen pressure exposure

p0351 A71-27810

Ar, N and Ne partial pressure tolerance in dogs, plotting saturation curves

p0354 A71-28038



## GAS TRANSPORT

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PH conditional ammonia assimilation deficient mutants isolation and growth properties, studying nitrogen transport in *Hydrogenomonas eutropha*

p0155 A71-18672

Cardiac output variations in regulation of arterial oxygen transport during hypoxia

p0212 A71-21939

Decompression sickness physical and physiological aspects, discussing gas transport quantification, inert gas elimination and metabolic gas exchange in recompression therapy, work performance, etc

p0250 A71-23236

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p0381 A71-30286

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p0083 A71-13180

Lung diffusing capacity for oxygen during exercise and alveolar hypoxia measured without blood samples by ear oximeter

p0375 A71-29492

Position, exercise and lung volume effects on healthy males pulmonary diffusing capacity for CO at rest and during exercise

p0375 A71-29493

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p0407 A71-31444

Oxygen pulmonary diffusion capacity estimation by rebreathing procedure based on gas-blood partial-oxygen-pressure equilibration

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**MUSCULOSKELETAL SYSTEM**

NT BONES

NT CEREBRUM

NT COLLAGENS

NT CONNECTIVE TISSUE

NT CRANIUM

NT ELBOW (ANATOMY)

NT FEMUR

NT FLEXORS

NT INTRACRANIAL CAVITY

NT JOINTS (ANATOMY)

NT KNEE (ANATOMY)

NT MASTOIDS

NT PELVIS

NT SCIATIC REGION

NT SKULL

NT TIBIA

NT VERTEBRAE

NT VERTEBRAL COLUMN

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- Model of retinal information in cats from physiological and anatomical evidence, considering processing of contrast and eye movement information p0306 A71-25254
- Book on color and pattern vision physiology covering retinal induction, electrical excitation of eye, optical illusion, figural aftereffect, movement sensation, etc p0318 A71-26769
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p0305 A71-25199

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p0379 A71-30253

- Snake IR receptor sense organs tested by IR stimulus from carbon dioxide laser, suggesting receptor operation on thermal principle p0411 A71-32296
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- U SENSORY PERCEPTION**
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- Peak diameter differences of sensitization by annular surrounds in subjects, concerning scotopic increment threshold and retinal illuminance p0091 A71-14376
- Human eyes macular pigment optical density curves through spectral sensitivity measurements, noting differences due to race, environment, age, skin, eye and hair color p0634 A71-44466
- Physiological effects of noise sensitivity [EQ-71-4] p0541 N71-32572
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- U SENSORS**
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- Sensorimotor performance of flight and nonflight personnel, investigating motions speed and accuracy p0011 A71-11110
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- Human motor skills acquisition during manual control problem solving, modeling operator as single channel data processing system p0076 A71-12998
- Motor cortex sensory input in animals and man, using evoked responses recording p0129 A71-16319
- Knowledge of results and rest pauses effect on sensorimotor skills at different training conditions p0133 A71-16618
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- Signals temporal uncertainty and sensory modality influence on watchkeeping performance, discussing signal density effect on pulses duration increments detection p0262 A71-24183
- Muscular fibers analysis for motoneuron split potentials, using needle electrode p0268 A71-24484
- Central nervous system responsiveness changes after exhausting physical exercise, giving electroencephalogram and sensorimotor reaction records p0309 A71-25668
- Psychobiological stress of prolonged weightlessness /bed rest/ in man in terms of adaptive homeostatic state and decreased sensory- motor-muscular input p0312 A71-26120
- Sensorimotor activity tests of operator perceiving high speed stimuli in broad visual field for psychological selection of aircraft and spacecraft pilots p0359 A71-28416
- Cerebral ischemia effects on sensorimotor cortex function in cats, recording spontaneous EEG and pyramidal response to cortex electrical stimulation p0409 A71-31956
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- Human motor control behavior sampling hypothesis of open loop system at voluntary effort initiation, discussing validity based on ankle rotation physiological test p0455 A71-34741
- Retinal adaptation to prism-displaced hand image in terms of sensorimotor coordination central control change p0514 A71-37543
- Proposed prism adaptation model suggesting visual motor control loop as linear system comprising independent subsystems p0514 A71-37544
- Coordination of human voluntary movements during space flights [JPRS-51899] p0160 N71-14625
- Dynamic characteristics of human skeletal muscle modeled from surface stimulation [NASA-CR-1691] p0237 N71-19125
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- Signal transformation by central nervous system for sensorimotor pattern construction in postural adjustment p0342 N71-23072
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- Luminance and luminous flux discrimination in light and dark reared rats after early visual deprivation p0366 A71-28810
- Visual perceptual masking under binocular and dichoptic conditions separating peripheral and central interference effects p0564 A71-40225
- Normal females electrophysiological changes during sensory isolation of water tank variety from EEG, ENG, EOG, EKG and electrodermal measurements, considering cortical activities reduction p0566 A71-40346
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- Human response to and perception of angular acceleration, discussing implications for motion capability in flight simulator [AIAA PAPER 70-350] p0271 A71-24860
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- Papers on anatomy and mechanisms of mammalian sensory systems including vision, audition and touch p0378 A71-30251
- Pulse frequency behavior during acquisition of perceptual and motor skills with particular attention to rest periods p0403 A71-31195
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- Anatomical load sensing method, determining torso pain thresholds by sensitivity tests [SESA PAPER 1823A] p0452 A71-34539
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- Human response to auditory stimuli start and cessation, noting time lag and perception duration p0512 A71-37283
- Activity correlation of adjacent neurons of cat cerebral cortex somatosensory zone, considering distribution of same direction /cophase/ and different direction /counterphase/ of background rhythms p0512 A71-37392
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- Gravitational and other forces involved in equilibrium of growing plants, showing gravity sensing ability lower limit existence p0557 A71-39971
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- Body position sensing actions during weightless conditions p0063 N71-11494
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- Sound and visual sensory interactions of pleasant, unpleasant, and no sound with red, green, and blue lights against white standards [AD-717715] p0336 N71-22341
- Auditory and tactile information transfer of biological systems p0341 N71-23066
- Physical analog model for human vestibular organ response in guidance and control systems [NASA-CR-117808] p0342 N71-23073
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- Statistical analysis of psychophysics of sensory perception and signal detection [IZF-1971-13] p0555 N71-33722
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Somatosensory and viscerosensory stimulation effects on cortex neuron amygdala complex and convergent interrelations p0140 A71-17384

Physiological interaction between conscious and unconscious trace processes during time count by pairing acoustic, tactile, proprioceptive and photic stimuli p0141 A71-17599

Gestalt psychology perceptual organization, analyzing contextual background and residual stimuli, interaction concepts, configurational principles and organismic factors p0191 A71-19696

Ambient temperature effects on flicker fusion threshold, using constant stimuli and forced choice methods for determination of test subjects sensory sensitivity to heat and cold exposure p0262 A71-24184

Signal transformation laws of central nervous system motor command patterns construction from sensory impulse streams p0265 A71-24236

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Human odorant evoked response, considering stimulation of olfactory receptors and trigeminal afferences in nose p0367 A71-28891

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Spatial and temporal discrimination functions in vision, audition and touch, establishing and controlling stimuli by vibrators p0379 A71-30252

Temperature, odor mixing and stimulation frequency effects on olfactory receptor potential of fly *Lucilia sericata* p0383 A71-30568

Fly *Lucilia sericata* olfactory receptor and unit action potentials response to odor stimulation by homologous compounds p0384 A71-30569

Performance differences between tactile and visual localization and temporal ordering ability, using sequential presentation of high rate point stimuli p0408 A71-31948

Radio telemetry stimulator for conditioning large animals by applying high voltage short duration pulses to skin surface p0416 A71-33050

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Gross locomotion and cargo handling in simulated artificial gravity environments, studying effects of Coriolis forces, angular accelerations, oculo-vestibular stimuli and traction variations [AIAA PAPER 71-886] p0481 A71-36636

Positive and negative deflections in human electroretinogram off response to stimuli p0515 A71-38058

Signals convergence of various sensory modalities as function of impulse reactions of individual brain neurons in mammals p0515 A71-38197

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Cortical responses of awake cat to narrow-band FM noise stimuli, proposing neuronal model p0525 A71-38894

Central nervous tissue sensitivity, considering direct sensing of gravitational stimuli of vibratory character p0533 A71-39767

Taste modalities identification by factor analysis technique based on correlation matrix between independent stimuli p0560 A71-39997

Psychophysiological reactions to understimulation and overstimulation, noting catecholamine output, heart rate and performance efficiency in humans p0562 A71-40073

Functional lability of human tactual analyzer by measuring minimum interval between two discrete controlled stimuli p0563 A71-40177

Posterolateral thalamus nucleus neurons response to visual, acoustic and somatic stimuli in cats with microelectrodes p0576 A71-41064

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Monkeys trained to observe and report two-member serial position sequences with delayed matching-to-sample procedure p0376 A71-29519

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Bicycle ergometer workout effects on serum proteins, noting intravascular redistribution, tissue damage and membrane permeability p0196 A71-20328

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Closed-loop solid electrolyte oxygen regeneration life support system, discussing 180-day life test [ASME PAPER 71-AV-32] p0479 A71-36399

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Optical effects observation by air traveler during takeoff, including haze or cloud droplet scattering, halos, shock wave shadows, shallow watercolors and twilight wedge p0157 A71-18716

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- SPACECRAFT CONTAMINATION**
- Planetary quarantine including background, program evolution, sterilization technology and contamination sources  
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- Long mission duration manned spacecraft contaminant control system design, discussing catalytic, oxidation, chemisorption and charcoal adsorption removal techniques and computerized performance prediction  
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[NASA-CR-118017] p0348 N71-23825
- Planetary quarantine systems analysis for biological contamination of Mariner Mars 1971 space probe  
[NASA-TM-X-67238] p0501 N71-30826
- Planetary quarantine, decontamination, microbial release probabilities, and contamination logs for Venus and Mars  
[NASA-CR-121423] p0544 N71-33221
- Microbiological contamination of Apollo spacecraft components  
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- Spacecraft manual control investigation, using human operator models described by linear transfer function with variable coefficients  
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- SPACECRAFT DESIGN**
- Soviet book on manned space flight covering spacecraft design, life support systems, mission characteristics, medical considerations, etc  
p0157 A71-18700
- Toxicology in aerospace vehicles design and operation, discussing occupational exposures, propellant operations, medical aspects, hazards, etc  
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- Wide heat load range space radiator design for space mission environmental control/life support system, using stagnation control  
[ASME PAPER 71-AV-5] p0474 A71-36372
- Solar-array space station environmental control and life support system design for 12-man 10-year mission capability with 180-day resupply  
[ASME PAPER 71-AV-12] p0475 A71-36379
- Skylab life support systems design and performance prediction covering thermal and humidity control, atmospheric supply, carbon dioxide removal, water and waste management  
[ASME PAPER 71-AV-14] p0476 A71-36381
- Space shuttle environmental control and life support system design covering atmospheric pressure, composition, humidity, temperature, water and waste management  
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- Long mission duration manned spacecraft contaminant control system design, discussing catalytic, oxidation, chemisorption and charcoal adsorption removal techniques and computerized performance prediction  
[ASME PAPER 71-AV-19] p0477 A71-36386
- Thermal design, analysis, testing and flight performance of ITOS-1 spacecraft, noting fail-safe temperature regulation  
[ASME PAPER 71-AV-23] p0477 A71-36390
- Design and performance testing of arterial wick circular heat pipes for OAO-C spacecraft

- [ASME PAPER 71-AV-26] p0478 A71-36393  
 Prototype space station environmental thermal control and life support system digital simulation for transient design and performance prediction
- [ASME PAPER 71-AV-34] p0479 A71-36401  
 Medical physiological requirements of angular velocity and g level for artificial gravity creation by rotating space vehicle, considering human tolerances and vehicle design
- [AIAA PAPER 71-871] p0480 A71-36627  
 Architectural and environmental design tools for space system habitability, discussing work and living areas, hygienic facilities, etc
- [AIAA PAPER 71-879] p0481 A71-36632  
 Coriolis forces influence on rotating spacecraft design, estimating relationships between coriolis force, artificial g, rotational radius and speed and velocity of motion
- [AIAA PAPER 71-889] p0482 A71-36638  
 Impact of artificial gravity simulations on spacecraft design configurations and crew operational procedures
- [NASA-CR-111866] p0301 N71-21558  
 Physiological effects and design criteria for artificial gravity space station
- [NASA-CR-114982] p0388 N71-24454  
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 Lethal recessive point mutation in *Drosophila melanogaster* eggs on Zond 5 spacecraft
- p0021 A71-11552  
 Permanent magnets for footwear restraint and mobility in zero gravity spacecraft, testing neutral buoyancy and six degree of freedom simulation effects
- [IEEE PAPER 2.2] p0190 A71-19607  
 Spacecraft cabin atmospheres, discussing controlled atmosphere composition, barometric pressure, physiological effects, trace constituents, fire hazards, etc
- p0205 A71-20729  
 Orbiting Biosatellite 3 monkey environmental and physiological parameters circadian rhythms, investigating desynchronization or arrhythmia
- p0251 A71-23241  
 Human nervous reactions to monochromatic red, yellow green and blue light for optimal color climate in spacecraft cabins
- p0358 A71-28411  
 Human energy requirements in weightless environments, correlating metabolic data from Gemini and Apollo missions with food consumption and energy balance measurements
- p0424 A71-33778  
 Environmental thermal control/life support system for manned space station, discussing maintenance, weight, power and volume
- [AIAA PAPER 71-827] p0455 A71-34719  
 Visual detection of stars in spacecraft environment, considering window cleanliness and antireflection coating effect on light scattering
- p0473 A71-36278  
 Space Shuttle Orbiter Environmental Control and Life Support Systems, discussing maintenance
- [ASME PAPER 71-AV-15] p0476 A71-36382  
 Space station thermal control systems design, discussing pumped loop, air cooled semipassive and heat pipe systems
- [ASME PAPER 71-AV-36] p0479 A71-36403  
 Microorganisms under closed environmental ecological conditions with reference to astronauts infectious diseases, discussing bacteria growth in Biosatellite 2 and earth based closed chamber experiments
- p0570 A71-40562  
 Space conditions exposure of lysogenic strains of *Escherichia coli* and monolayer cultures of human cells aboard Zond 5 and 7 flights
- p0570 A71-40565  
*Chlorella* viability and mutability aboard Soyuz and Zond spacecraft, noting trend toward growth of anomalies in autosporeulation
- p0570 A71-40566  
 Spacecraft closed loop oxygen recovery system using electrochemical carbon dioxide concentrator, Sabatier reactor and water electrolysis subsystem
- p0588 A71-42017  
 Oxidation of water in regeneration under spacecraft conditions, measuring organic impurities degree of oxidation in inhabited cabin atmospheric vapor condensates
- p0603 A71-42814  
 Portable environmental control and life support system for astronaut in and out of spacecraft
- [NASA-CASE-XMS-09632-1] p0060 N71-11203  
 Effects of spacecraft environment on oxidative drug metabolism
- [NASA-CR-114821] p0174 N71-16704  
 Transactions on space biology and medicine
- [JPRS-52121] p0233 N71-19051  
 Space flight radiation protection using antiradiation drugs
- p0234 N71-19055  
 Summary of conference papers on life support systems in space
- p0237 N71-19075  
 Spacecraft water reclamation and closed self contained biological cycled-closed ecological system techniques in USSR and US
- [NASA-TT-P-13634] p0345 N71-23376  
 Aerospace medicine, life support system, and psychophysiological problems and environmental factors in space flight
- [JPRS-53311] p0435 N71-28094  
 Personal hygiene protocol for man in spacecraft environment
- [NASA-CR-115181] p0612 N71-35238  
 Spectrophotometric measurement of iodine concentrations in spacecraft potable water supplies
- [NASA-CR-115134] p0616 N71-35264  
**SPACECRAFT GUIDANCE**  
 Spacecraft navigation, guidance and control for manual rendezvous with orbiting target, examining error sources perturbing effects
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 Spaceborne optical sensors cleanliness requirements, considering particle size distribution, shape, population densities, chemical composition and origin
- [AIAA PAPER 71-471] p0317 A71-26758  
 Man and equipment instrumentation in simulated space environment, considering training and interface of man and life support systems
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 Monkey physiological responses from lift-off to orbital insertion, showing EEG and EMG arousal reactions, motion sickness development, cardiovascular and respiratory changes
- p0251 A71-23239  
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 Modeling human disorientation and motion sickness in rotating spacecraft, stressing sensors dynamic response
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**SPACECRAFT POWER SUPPLIES**  
 Steady state and transient interactions due to thermal integration of isotope Brayton space power and life support systems
- p0410 A71-32220  
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 Specular reflecting passive radiators for synchronous satellite radiation detectors cooling
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- life support system design for 12-man 10-year mission capability with 180-day resupply  
[ASME PAPER 71-AV-12] p0475 A71-36379
- Space station prototype environmental thermal control and life support systems, considering maintainability, reliability, weight penalties and fault detection and isolation  
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- Dry heat destruction rates for microorganisms encapsulated in and on spacecraft hardware, concluding temperature and water conditions in spore as major factors  
p0022 A71-11564
- Ethylene oxide and methyl bromide sporicidal activity compared for spacecraft sterilization of *B. subtilis* var niger spores  
p0023 A71-11565
- Spacecraft sterilization by microbial inactivation, comparing thermoradiation and dry heat methods  
p0146 A71-17959
- Dry heat and 60 gamma radiation combined effects on spacecraft sterilization, discussing kinetic analysis of spore inactivation  
p0269 A71-24613
- Soviet papers on extraterrestrial life and detection methods covering biological conditions, extremal environmental factors and spacecraft sterilization  
p0362 A71-28677
- Space objects sterilization techniques in Soviet Union and United States, covering hot air, ionizing radiation, UV light, ethylene oxide with or without Freon, etc  
p0364 A71-28694
- Spacecraft sterilization, discussing space environment effects on microorganisms, interplanetary unmanned lander sterilization, crew quarantine, etc  
p0364 A71-28696
- Planetary quarantine including background, program evolution, sterilization technology and contamination sources  
p0424 A71-33744
- Combined dry heat and ionizing radiation for spacecraft sterilization process, detailing synergistic effect on microbes  
p0424 A71-33770
- Bacterial spore distribution and dry heat resistance on Mariner-Mars 1969 spacecraft, using randomly selected aerobic mesophilic isolates  
p0515 A71-37646
- Technique for sterile insertion of liquids into previously sterilized spacecraft  
[NASA-CR-111095] p0042 N71-10382
- Thermal inactivation curves of *Bacillus subtilis* spores for decontamination of interplanetary space vehicle components  
[NASA-CR-111387] p0048 N71-11073
- Thermoradiation studies on microorganisms for spacecraft sterilization  
[NASA-CR-111309] p0167 N71-16022
- Bacterial thermoradiation sterilization models and computerized bioassay system for Apollo biological data  
[NASA-CR-116420] p0227 N71-18056
- Causes of spacecraft external contamination and approaches for counteracting contamination  
[REPT-70SD260] p0301 N71-21576
- Experimental system to detect acceptable levels of contamination for terminal sterilization process with unmanned landers  
[NASA-CR-118870] p0434 N71-27794
- Problem of hardy soil spores in spacecraft sterilization of Planetary Quarantine Program  
[NASA-CR-119314] p0500 N71-30662
- Bibliography of scientific publications and presentations relating to planetary quarantine for year 1970 - Vol. 5  
[NASA-CR-121325] p0540 N71-32231
- Evaluation equipment for terminal sterilization process on unmanned landers and determination of thermal inactivation curve of *B. subtilis* var. niger spores  
[NASA-CR-121727] p0607 N71-34054
- Moisture effects on thermal inactivation of microbial spores for spacecraft sterilization  
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- Cosmic radiation protection of spacecrews by drugs, extrapolating animal data to humans  
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- Renal function osmoregulation in Soyuz crew members  
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- Scientist-astronauts work in manned space flight program support/backup crews and Skylab missions scientific/medical experiments  
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- Crew performance as information input factor based on USAF two man space cabin research  
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- Postflight metabolism and renal function of Soyuz 6, 7 and 8 crewmembers, associating weight loss during flight with water and salt discharges  
p0358 A71-28409
- Space crew members muscle tone, determining weightlessness effect by rigidity and bioelectric activity  
p0405 A71-31317
- Long term spaceflight crew personal hygiene, discussing human waste processing and/or utilization, microbiological control and medical infirmary-dispensary-laboratory requirements  
[AIAA PAPER 71-878] p0480 A71-36631
- Housekeeping systems for manned modular space station and shuttle, discussing steward duties and waste control  
[AIAA PAPER 71-880] p0481 A71-36633
- Radiation protection of Soyuz-9 crew, using solar activity forecasts  
p0635 A71-44531
- Physiological effects of 18 day space flight on crew of Soyuz-9  
p0110 N71-12308
- Aeromedical aspects of manned space flight  
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- Weightlessness effects on man during space flight  
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- Onboard medication for space flight crew  
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- Space flight nutritional requirements and food selections  
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- Investigating effects of weightlessness on neuromuscular system of Soyuz 9 crew members  
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- Developing realistic mission models for food system to sustain spacecrew for extended periods of time  
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- Glycerol food additive for spacecrew feeding  
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- Mass balance and crew input/output requirements during long duration space cabin simulation test  
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- Crew selection procedures for long duration manned space station simulation test  
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Long duration confinement effects in simulated space station atmosphere on human short-term memory
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Electroencephalographic sleep patterns of crew during long duration spacecraft cabin simulation
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Medical observation of spacecrew during long duration space station simulation test
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Dermal and environmental microbiological data from long duration manned space station simulation
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Biochemical serum assays on crewmen during long duration space station simulation
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Mathematical model and computerized simulation of crew related factors in space station
- p0445 N71-28539  
Manned simulation of crew performance for assessing space mission reliability
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Social system model for spacecrew behavior during long duration space flight
- p0446 N71-28544  
Crew radiation dose from plume of high impulse gas-core nuclear rocket during Mars mission [NASA-TM-X-67927]
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Target field luminance, interstimulus interval and target-mask spatial separation effects on visual backward masking, estimating inhibitory region radius
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Human visual system response to moving spatially periodic stimuli, developing mathematical model for motion perception
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- SPECTRAL SIGNATURES**  
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- Figural noise and rotation effects on visual form  
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 p0018 A71-11417
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 p0028 A71-11899
- Extraauditory effects of sound on senses, concerning  
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 p0082 A71-13158
- Frog eye response to UV light stimulation,  
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 p0086 A71-13484
- Soviet book on visual image formation on retina  
 covering perception, stabilization, manipulative  
 ability, etc  
 p0088 A71-13692
- Neural activities during simultaneous contrast and  
 information processing in visual system  
 p0090 A71-14188
- Neurophysiological aspects of human optical and  
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- Suprathreshold vision retinal image contrast loss  
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- Rotation direction perception by three cue system  
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 p0131 A71-16550
- Nervous system activity changes relation to physical  
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- Digital tachystoscope functions, operating  
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 p0136 A71-16924
- Visual pattern perception learning, recognition upon  
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 p0139 A71-17243
- Visual cortex inhibitory neurons, examining pause  
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 p0140 A71-17383
- Book on visual perception covering physics of light,  
 rods and cones, color vision, brightness  
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 p0141 A71-17409
- Shadow projector creating visual illusion of space  
 surrounding flying aircraft for aviation training,  
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 p0157 A71-18716
- Automated vision tester for evaluating space  
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 p0175 A71-18805
- Perception - Conference, New York, October 1970  
 p0190 A71-19694
- Space-time interactions and associated input-output  
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 and displacement visual perceptual information  
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 p0191 A71-19695
- Human eye optimum information reception assessment  
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- Temporal masking effects with perception of color  
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- Nonius horopter theory and mathematical model,  
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- Reduction or disappearance of visual aftereffect of  
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 p0257 A71-23744
- Phi movement/pure motion/perception between  
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**VISUALIZATION OF FLOW**  
 U FLOW VISUALIZATION

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 U RETINENE

**VITAMIN B**  
 U THIAMINE

**VITAMIN B COMPLEX**  
 U BIOTIN

**VITAMIN B 06**  
 U PYRIDOXINE

**VITAMIN C**  
 U ASCORBIC ACID

**VITAMIN E**  
 U TOCOPHEROL

**VITAMIN K**  
 U PHYLLOQUINONE

**VITAMINS**  
 NT ASCORBIC ACID  
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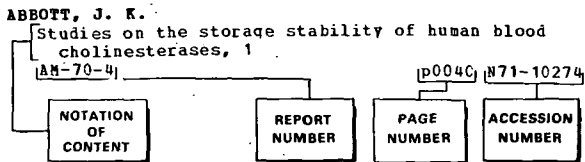
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