

CENTER SERIES FOOD SYSTEMS (R. RAPP FILES)

The documents in this subseries originate in the office of Ms. Rita Rapp who, until her death in 1989, managed the JSC Food Systems Laboratory. However, the papers more widely reflect the overall function of the Preventive Medicine Division of the Medical Research and Operations Directorate under who's auspices the laboratory fell. Among the materials are documents regarding food systems hardware, food and menu choices, and nutrition standards and data. Also heavily represented are experiments management documents and materials regarding human tolerance and performance limitations in space. The subseries is strongest in Gemini, Apollo and Skylab materials. See MSC1 1144.1. Largely culled from the collection were letters from the public requesting information on space diets and food generally. A few representative examples that call particularly well upon the expertise of the division were retained. The subseries begins with a run of correspondence and some non-program specific reports. Thereafter, the collection is arranged chronologically by program. Note that Apollo Medical Operations Plans not found in this collection should be available in the general Apollo series. See also a group of materials on space medicine located in the General Reference Vertical Files.

Inventory

SubHeading:	Box Number: 01	
GENERAL	Correspondence (11 folders)	February 1967 - April 197
SubHeading:	Box Number: 02	
GENERAL	Correspondence (8 folders)	May 1970 - January 1971
SubHeading:	Box Number: 03	
GENERAL	Correspondence (11 folders)	February - December 1971
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GENERAL	Correspondence (9 folders)	January - October 1972
SubHeading:	Box Number: 05	
GENERAL	Correspondence (9 folders)	November 1972 - 1975
SubHeading:	Box Number: 06	
GENERAL	Dixon, Frederick and Patterson, John; "Determination of Accelerative Forces Acting on Man in Flight and in the Human Centrifuge"	July 1, 1953
GENERAL	Flight Acceleration Facility	1958 - 1959
GENERAL	Experimental Biology in Space (assorted papers)	1959 - 1962
GENERAL	Rapp, Whitehair, and Clark, "Renal Responses to Heat and Altitude"	1960
GENERAL	Guedry, Kennedy, Harris, and Graybiel, "Human Performance During Two Weeks in a Room Rotating at Three RPM"	August 28, 1962
GENERAL	Space Feeding - Astronaut Interview Format	December 19, 1962
GENERAL	In-Flight Exercise Experiment (including drawings and photos)	1962 - 1965, n.d.
GENERAL	General Dynamics / Astronautics, A Proposal for Study of Devices to Attenuate and Monitor Biological Effects of Zero G	March 15, 1963
GENERAL	Some Physiological Observations and Monitoring Techniques Associated with Auto Racing - Data and Correspondence	1963 - 1965
GENERAL	Minimum Ecological Systems for Man, Princeton - NYAS Conference	October 11 - 14, 1964
GENERAL	Bed Rest Study Reports and Photographs	1964 - 1966, n.d.
GENERAL	Aerospace Medical Research Laboratories, "Development of De-	December 1965

	hydrated and Bite-Sized Food Items"	
SubHeading:	Box Number: 07	
GENERAL	Influence of Lower Body Negative Pressure on the Level of Hydration During Bed Rest	December 1965
GENERAL	Spacecraft Food Systems, Various Photographs	1965 - 1972
GENERAL	Proceedings of the Second Annual Biomedical Research Conference	February 17 - 18, 1966
GENERAL	U.S. Naval Air Engineering, A Report of the Physiological, Psychological and Bacteriological Aspects of 20 Days in Full Pressure Suits, 20 Days at 27,000 Feet on 100% Oxygen, and 34 Days of Confinement	April 1, 1966
GENERAL	Schwarz Bioresearch Inc. "Superior Diet for Man in Space", NASW-517	December 1966
GENERAL	Texas Women's University, "Physical and Biomedical Changes Occurring in Bone as a Result of Gravity Counter-Action"	June 30, 1967
GENERAL	Whirlpool, Corp. "Final Report - Functional Verification Food", NAS9-6641	September 25, 1967
GENERAL	Microbial Canister Study	1967, n.d.
SubHeading:	Box Number: 08	
GENERAL	Post - Apollo Activities of the Medical Research and Operations Directorate in Food and Nutrition	December 1968
GENERAL	Space Biology and Medicine, USSR Volume 2, No. 4 & 5	1968 - 1969
GENERAL	Rita Rapp - Newspaper Articles	1968 - 1971, n.d.
GENERAL	Whirlpool, Corp. "Food Production and Packaging Clean Room Procedures"	January 1969
GENERAL	Fairchild Hiller, "Technical Proposal for Feasibility Study of a Modular Microbiological Laboratory"	June 2, 1969
GENERAL	McDonnell Douglas, "Manned Spacecraft Microbial Load Monitor" Final Report	June 20, 1969
GENERAL	Technology Incorporated, "Flight Feeding Systems Design and Evaluation" Quarterly Reports (4 volumes), NAS9-8927	1969 - 1971
GENERAL	Flentge, Robert L. and Bustead, Ronal L., "Manufacturing Requirements of Food for Aerospace Feeding"	May 1970
SubHeading:	Box Number: 09	
GENERAL	The Effects of Exercise and Supplemental Phosphate on the Bone Mineral Changes Induced by Bed Rest, Volume I & II	August 1970
GENERAL	Space Food Systems: Mercury Through Apollo	December 1970
GENERAL	University of Missouri, "Energy and Nutrient Intake Monitoring" Final Report, NAS9-12369	1975
GENERAL	University of Nebraska, "Health Protection and Food Preservation by Gamma Irradiation"	May 1976
GENERAL	U.S. Army Natick Research and Development Command, "Feasibility Report for Space Food Service Systems", Final Report	July 1978
GENERAL	Mosier, Benjamin "Incorporation of Biocides into Various Plastic Materials	n.d.

	for the Chemical Urine Volume Measurement System", NAS9-4347	
GENERAL	Dymsza, H. A. et. al. "Development of Nutrient Defined Diets for Space Feeding"	n.d.
GENERAL	Instructions for Collection and Processing of Urine and Blood Specimens at Time of Recovery	n.d.
SubHeading:	Box Number: 10	
GEMINI	Gemini Flight Food Preinstallation Acceptance Test Plan	August 8, 1964
GEMINI	Gemini Flight Food Pre-delivery Acceptance Test Plan	August 13, 1964
GEMINI	Gemini Flight Food Specification	August 14, 1964
GEMINI	Gemini Flight Food Quality Assurance Plan	August 14, 1964
GEMINI	Gemini Flight Food Ground Support Equipment Requirements Plan	August 14, 1964
GEMINI	Gemini Flight Food Development Test Plan	September 9, 1964
GEMINI	Gemini Flight Food Program Plan	October 21, 1964
GEMINI	Proceedings of a Researcher Contractors Conference. (experiment descriptions)	December 3 and 4, 1964
GEMINI	GT Experiment M-5, Biochemical Analysis of Body Fluids	1964, n.d.
GEMINI	Gemini 3 Blood Experiment File	1964 - 1965
GEMINI	GT-3 Experiment S-2, Effects of Zero Gravity on the Growth of Sea Urchin Eggs	1964 - 1965
GEMINI	Effect of Sub-gravity on Cellular Phenomena in Frog Eggs (including drawings)	1964 - 1965
SubHeading:	Box Number: 11	
GEMINI	Experiments for Gemini Missions 3, 4, 5, 7, and 9	1964 - 1966
GEMINI	Gemini In-flight Experiment M-7 Calcium and Nitrogen Balance (3 folders)	1964 - 1967, n.d.
GEMINI	Gemini VII In-flight Medical Experiments	November 10, 1965
GEMINI	Gemini In-flight Exerciser Assembly Engineering Drawings	1965
GEMINI	GT Experiment S-4, Synergistic Effect of Zero G and Radiation on White Blood Cells and Neurospora	1965 - 1966
SubHeading:	Box Number: 12	
GEMINI	Bone Demineralization on Gemini VII	January 15, 1966
GEMINI	A Review of Medical Results of Gemini 7 and Related Flights	August 23, 1966
GEMINI	Calcium and Nitrogen Balance Studies During Gemini 7 Flight	September 1966
GEMINI	Gooch, P.C. and Berry, C.A. "Chromosome Analyses of Gemini Astronauts"	n.d.
GEMINI	Gemini EVA Position Paper	n.d.
SubHeading:	Box Number: 13	
APOLLO MISSION RELATED	Apollo 7 to 11: Medical Concerns and Results	November 1969
APOLLO MISSION RELATED	Bone Demineralization in the Apollo 7 Mission	n.d.
APOLLO MISSION RELATED	Medical Requirements, Apollo Mission C Prime (Apollo 8)	November 1, 1968

APOLLO MISSION RELATED	Biomedical Evaluation of the Apollo 9 Mission, MSC-03459	December 1970
APOLLO MISSION RELATED	Apollo 10	1969, n.d.
APOLLO MISSION RELATED	Apollo 11	1969, n.d.
APOLLO MISSION RELATED	Apollo 12	1969 - 1970, n.d.
APOLLO MISSION RELATED	Apollo 13	1970, n.d.
APOLLO MISSION RELATED	Medical Requirements - H-2 Type Mission Lunar Landing (Apollo 13)	February 1970
APOLLO MISSION RELATED	Apollo 13 Medical Operations Plan, MSC-01849	March 2, 1970
APOLLO MISSION RELATED	Apollo 14	1970 - 1971, n.d.
SubHeading:	Box Number: 14	
APOLLO MISSION RELATED	Apollo 15	1971 - 1972, n.d.
APOLLO MISSION RELATED	Apollo 15 Medical Requirements, J-1 Type Mission Lunar Landing	June 1971
APOLLO MISSION RELATED	Apollo 15 Medical Operations Plan, MSC-04272	May 15, 1972
APOLLO MISSION RELATED	Biomedical Evaluation of the Apollo 15 Mission	c. 1972
APOLLO MISSION RELATED	Apollo 16	1971 - 1972, n.d.
APOLLO MISSION RELATED	Potassium Diets, Apollo 16	1971 - 1972
APOLLO MISSION RELATED	Apollo 16 Pre and Post Flight Food Handling Procedures	1971 - 1972
APOLLO MISSION RELATED	Apollo 16 Medical Operations Plan, MSC-05260	February 29, 1972
APOLLO MISSION RELATED	Food and Nutrition Studies on Apollo 16	1972
SubHeading:	Box Number: 15	
APOLLO MISSION RELATED	Apollo 17	1972
APOLLO MISSION RELATED	Apollo 17 Medical Operations Plan Life Sciences Directorate, MSC-07385	October 1, 1972
APOLLO MISSION RELATED	Apollo 17 GFE Flight Readiness Review	1972
APOLLO MISSION RELATED	Apollo 17 Nutrient Data Charts	1973
APOLLO MISSION RELATED	Apollo 17 Intake Data	1973, n.d.
APOLLO MISSION RELATED	ASTP Flight Menu	1974
APOLLO - GENERAL	Gemini and Apollo In-Flight, Emergency, and Crew Survival Medical Kits	1964 - 1965, n.d.
APOLLO - GENERAL	Automatic Injectors and Medication for Apollo	1964 - 1965
APOLLO - GENERAL	Apollo Qualification Test Plan and Procedures	1965
APOLLO - GENERAL	Apollo Experiment M-007, Calcium and Nitrogen Balance	1965 - 1967, n.d.
APOLLO - GENERAL	Apollo Earth Orbital Experiments	August 1, 1966
APOLLO - GENERAL	Whirlpool, Corp. "Food Orientation Study Mockup Review, Apollo Block I Food, NAS9-3825	October 24, 1966
APOLLO - GENERAL	Apollo Experiment M011A, Cytogenetic Studies of Blood	1966 - 1970, n.d.
SubHeading:	Box Number: 15 *	
APOLLO MISSION RELATED	Apollo 17 Food and Fecal Analysis * All 87 pages of this document have been scanned	1972
SubHeading:	Box Number: 16	
APOLLO - GENERAL	Martin Marietta Corporation, Engineering Study and Experiment Definition for an Apollo Applications	January 1967

	Program Experiment on Vehicle Disturbances due to Crew Activity	
APOLLO - GENERAL	Food Package Materials Test	June 1967
APOLLO - GENERAL	Apollo Material Flammability Tests Food Packaging	1967
APOLLO - GENERAL	Apollo Food System Description and Evaluation	1967, n.d.
APOLLO - GENERAL	Apollo 205/101 Flight Crew Experiments Guide, Final Edition	April 10, 1968
APOLLO - GENERAL	Whirlpool, Corporation "Inspection Plan for Apollo Block II Feeding System"	April 1968
APOLLO - GENERAL	Whirlpool, Corporation "Apollo Block II Feeding System"	December 1968
APOLLO - GENERAL	Apollo Block II Food Assembly, Engineering Notes, NAS9-9032	1968
APOLLO - GENERAL	Qualification Test Report for the Apollo Pressure Garment Assembly Spacecraft Interface Tests (food port problem)	1968
SubHeading: Box Number: 17		
APOLLO - GENERAL	Whirlpool, Corporation "Apollo Food Processing Procedures"	February 27, 1969
APOLLO - GENERAL	Apollo Block II Food Qualification Test Report	March 21, 1969
APOLLO - GENERAL	Apollo U.S. Army Natick Laboratories Food Certifications	June 1969
APOLLO - GENERAL	Potable Water Delta Qualification Test	December 19, 1969
APOLLO - GENERAL	Apollo Block II Food Assembly Drawings	1969, n.d.
APOLLO - GENERAL	Astronaut Food Evaluation Forms	1969 - 1971, n.d.
APOLLO - GENERAL	Apollo Earth Like Food Dish, NAS9-9032	November 25, 1970
APOLLO - GENERAL	Apollo Contingency Feeding System	March 1971
APOLLO - GENERAL	Design and Development of a NASA Food System Concept, NAS9-9032	April 1971
SubHeading: Box Number: 18		
APOLLO - GENERAL	University of Missouri, Apollo Diet Evaluation, Final Report, NAS9-10955 (2 volumes)	1971
APOLLO - GENERAL	Apollo In-Suit Drinking Device	1971 - 1972, n.d.
APOLLO - GENERAL	NASA TND-7720, Apollo Experience Report - Food Systems	July 1974
APOLLO - GENERAL	Food Depot Training Plan	1974
APOLLO - GENERAL	Hardware Development Program for Apollo-Saturn 209 Mission Experiments	n.d.
SKYLAB / MOL	Pillsbury, Feeding System Assembly, Manned Orbiting Laboratory, MOL / FSA, Vol. 1 - Tech. Proposal	March 1967
SKYLAB / MOL	MOL (Manned Orbiting Laboratory) Feeding System Assembly	July 12, 1967
SKYLAB / MOL	AAP / Skylab Food System, Correspondence and Presentation Materials	1967 - 1975, n.d.
SKYLAB / MOL	Whirlpool, Corporation MOL - Feeding System Planning Conference Minutes	July 9 - 10, 1968
SKYLAB / MOL	Martin Marietta, Report of the Investigation of Grocery Type Foods in Orbit and Recreational Systems in Orbit	May 15, 1969
SubHeading: Box Number: 19		
SKYLAB / MOL	Martin Marietta, AAP Food System	1969

	Documents and Notes	
SKYLAB / MOL	Whirlpool, Corporation "System Analysis of MOL Feeding System"	c. 1969
SKYLAB / MOL	Research and Development in the Development of the AAP Food System Assembly, NAS9-9958, Quarterly and Final Report	December 1969 - August 19
SKYLAB / MOL	Skylab Program, End Item Specification, Food System	July 1970
SKYLAB / MOL	MSC-05897, SMEAT Maintenance Plan	February 22, 1972
SKYLAB / MOL	SMEAT LSD Schedule and Status Summary, Final Document	May 26, 1972
SubHeading:	Box Number: 20	
SKYLAB / MOL	Whirlpool, Corporation" Skylab Food System Qualification Test Readiness Review", NAS9-11164	June 7, 1972
SKYLAB / MOL	SMEAT M071 / MO73 Food Logs	June - July 1972
SKYLAB / MOL	MSC-07288, Skylab Program Design Certification Review Volume IV - GFE / Skylab Food System	August 18, 1972
SKYLAB / MOL	Technology Incorporated, Skylab Food System Laboratory Support, NAS9-12926, Final Report	1972 - 1974
SKYLAB / MOL	MSC-07705, Food and Nutrition Skylab Support Program	January 29, 1973
SKYLAB / MOL	Skylab Final Food Log	January - February 1973
SKYLAB / MOL	MSC-07716, Skylab Feces and Vomitus Specimen Analytical Plan	February 1973
SKYLAB / MOL	MSC-07708, Skylab Food Preparation and Handling - Experimental and Operational	February 1973
SKYLAB / MOL	MSC-07712, Skylab Flight - Type Food Operations Plan	February 1973
SKYLAB / MOL	MSC-07717, Skylab Food and Nutrition Laboratory Plan for Urine	February 1973
SKYLAB / MOL	MSC-07709, Skylab Food Residue Handling Plan	February 1973
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SKYLAB / MOL	MSC-07710, Skylab Food Operational Logistics Plan	February 1973
SKYLAB / MOL	MSC-07706, Skylab Experimental and Operational Food Program	February 1973
SKYLAB / MOL	MSC-07707, Skylab Food Analytical Program	February 1973
SKYLAB / MOL	Whirlpool, Corporation "Skylab Food System Supporting Development", NAS9-11295, Final Report	March 22, 1973
SKYLAB / MOL	Final Report, Skylab Gastrointestinal Analysis, NAS9-12728	August 15, 1975
ASTP	Pre-, Post and In-Flight Menus	1973 - 1975
ASTP	Technology Incorporated, Food Depot, Final Report, ASTP, NAS9-13291	August 26, 1975
ASTP	ASTP Food System	1974 - 1975, n.d.
SPACE SHUTTLE	Pillsbury Co. Shuttle Food System Study, Technical Presentation (NAS9-13138)	October 10 - 11, 1973
SPACE SHUTTLE	Pillsbury Co., Space Shuttle / Food System Study Final Report, 3 vols. NAS9-13138	c. 1974
SubHeading:	Box Number: 22	
SPACE SHUTTLE	TM-58252, Shuttle OFT Medical Report, Summary of Medical Results from STS-1, STS-2, STS-3 & STS-4	July 1983

SPACE SHUTTLE	Interface Control Document, Shuttle Galley Water System	n.d.
SPACE SHUTTLE	Design and Study Feasibility of Feeding Systems for Space Crews, Phase II	March 8, 1978