

BEHAVIORAL SCIENCES

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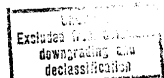
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No. & Priority	PROJECT	OPERATIONAL REQUIREMENT	MSD/ORD SUPPORT
<u>BH-1</u> (A)*	Psychological Assessments of Individual Applicants	Improve selection procedures.	1. Establish data base. 2. Examine alternate methods.
<u>BH-2</u> (B)	Group Behavioral Studies (Medical Dept.)	Improve overall evaluations.	1. Identify critical group factors
<u>BH-3</u> (B)	Familial and Social Interactions and Studies	Continuous assessments.	1. Establish post-dictive data base on comparable individuals to test in predictive way.
<u>BH-4</u> (C)	Personnel Training & Evaluation a. Pilot integration with vehicle & components. b. Personal protective equipment. c. Survival; self-medical care. d. Escape, evasion & resistance.	Pilot performance, safety & survivability.	a. Human Factors study. b. -- c. Training techniques. d. Training and research in resistance to persuasion techniques.
<u>BH-5</u> (A)	Psychological Factors in Special Missions	Pilot effectiveness and integrity.	1. Utilization of data base from BH-1. 2. Training & performance measures 3. Attitude training & assessment.
<u>BH-6</u> (B)	Personal & Familial Factors in Dislocations.	Alleviation of economic and career problems.	1. Utilization of data base of BH-3.

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**BIOMEDICAL SCIENCES**

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No. & Priority	PROJECT	OPERATIONAL REQUIREMENT	MBSD/ORD SUPPORT
<u>BM-1</u> (A)	Medical Criteria for Selection and Maintenance	Flying fitness and survivability.	Encourage the combination of all data, medical and other, under one cover. Establish computer coding and analysis of this data as a procedure in order to develop cross correlations.
<u>BM-2</u> (B)	Psychophysiological Factors in Stress Tolerance	Pilot performance under all mission conditions.	<ol style="list-style-type: none"> <li>1. Same as BM-1.</li> <li>2. Develop instrumentation to monitor pilot status on fly-and-try basis.</li> <li>3. Encourage the development of a simulator.</li> </ol>
<u>BM-3</u> (A)	Measurable Indices of Mission Stress and Fatigue	Crew control and maintenance.	Pre- and post-flight studies to determine operational, medical, and physiological status, and establish trends if any.
<u>BM-4</u> (B)	Mission Metabolic Costs and Nutritional Requirements	Crew control and maintenance.	<ol style="list-style-type: none"> <li>1. Review accumulated data to establish endurance norms under various flight conditions.</li> <li>2. Institute simulation studies to define operational limits where such data does not exist.</li> </ol>
<u>BM-5</u> (B)	Diurnal Biorhythm Alteration	24-hour mission alert. Crew control and maintenance.	Develop study program to determine the relationship, if any, of high level performance capability to circadian effects. Simulator studies.

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<del>PM-6</del> (B)	Thermoregulatory System Function and Heat Adaption	Performance during emergency heat stresses in flight.	<ol style="list-style-type: none"> <li>1. Define the thermal environment under different flight conditions.</li> <li>2. Determine tolerance norms.</li> <li>3. Examine individual tolerance against the background of tolerance norms.</li> </ol>
<del>PM-7</del> (B)	In-flight Pulmonary Function	Index of pilot status during mission	Develop open-circuit spirometry techniques which are compatible with the environmental support system. Perform detailed pulmonary function studies.
<del>PM-8</del> (C)	Acoustic Trauma and Auditory Function	Accurate communications and future flying fitness.	<ol style="list-style-type: none"> <li>1. Establish monitoring facilities to determine time-intensity exposure.</li> <li>2. Develop audiometry program to relate sensory decrement with accumulated exposure. Recovery time.</li> </ol>
<del>PM-9</del> (A)	Visual and Vestibular Function	Intra- and extravehicular orientation. Night vision training.	Design or redesign attitude indicators so that the pilot may read them during refueling operations.
<del>PM-10</del> (B)	Toxicology of Artificial Environments	Elimination of liquid/gaseous contaminants.	<ol style="list-style-type: none"> <li>1. Environmental sampling program.</li> <li>2. Identify and measure the concentration of contaminants.</li> <li>3. Establish safety factors.</li> </ol>

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ILLEGIB

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BIOTECHNOLOGY AND APPLICATIONS

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No. & Priority	PROJECT	OPERATIONAL REQUIREMENT	MBSD/ORD SUPPORT
BT 6 (A)	Improved Life Support System Crew Protective Assembly a. helmet sub-system b. pneumatic s/s c. emergency s/s	Omi-environmental protection  max protection and visibility oxygenation, pressurization, and ventilation oxygenation, pressurization and ventilation on ejection	1. Establish training program. 2. Consultative contribution only.
BT 7 (A)	Improved Life Support System Crew Survival Assembly a. parachute s/s b. seat pack s/s c. locator & air snatch s/s	Pilot recovery and integrity safe descent & detection survival, escape and evasion recovery in denied areas.	1. Review design of seat pack for purposes of vol and wt reduction and determination of adequacy. Otherwise no contribution. 2. Consultative contribution only.
BT 8 (B)	Crew Training & Indoctrination a. survival b. escape and evasion c. project security	Pilot recovery and integrity	1. Review drug use, otherwise no contribution. 2. Training methods.
BT 9 25X1 (A)		Mission critical factor analysis. Accident analysis.	1. 2.
BT-10 (C)	Aircrew Control and Conditioning Center	Optimal mission fitness.  SECRET	1. Establish optimal criteria for mission fitness. 2. Simulator studies. 3. System-Function analysis

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No. & Priority	PROJECT	OPERATIONAL REQUIREMENT	MBSD/ORD SUPPORT
BT 11 (C)	Mission Ground Life Support Equipment a. FPS & O <sub>2</sub> test s/s b. Pre-breathing s/s c. Portable O <sub>2</sub> & vent s/s d. Van-transport s/s e. Van-maintenance s/s f. Van physiol. chamber s/s g. Biomed. monitoring	Pre-mission crew preparation. Test and delivery.  Periodic physiological training. Poor definition.	1. Training program. 1) Decompression 2) Explosive compression 3) Warning systems, if needed.  2. Examine new parameters of monitoring (g).
BT 12 (C)	Crash Medical Equipment a. surface operations b. airborne operations	Pilot location, medical aid and recovery	1. Passive locators transceivers. 2. No contribution.

\* (A), (B), and (C) indicate priority problem areas in descending order.

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