

LIST OF TECHNICAL REPORTS AND MEMORANDUMS

CONCERNING HUMAN FACTOR ENGINEERING

DESIGN OF NASA-MSC EQUIPMENT

I. General

IMCC Systems and Performance Requirements Specifications (Study by Philco under Contract No. NAS 9-366)

II. Console Design

(1 report with drawings and 4 memos on console configurations, room and module layouts, and display systems).

A. Console and Module Design, MOCR Design Layout

1. Human Factors Design Sketches and Released Drawings for the integrated Mission Control Center. Contor, K.
PHO-TN106
May 13, 1964

B. Console Design

1. Control Consoles. Oberholtzer, G.W.
June 10, 1963
2. Design for Maintainability of IMCC Console Panels. Fisher, H.T.
September 25, 1963
3. IMCC Control Console Colors. Lepine, L.T.
October 21, 1963
4. IMCC Console and Equipment Rack Color Coordination. Fisher, H.T.
October 31, 1963

III. Console Modules

A. PBI Console Modules

(report on safety covers and H.E. specs. on PCK, SMEK, ESO, FDK.)

1. Mounting of Safety Covers on Push Button Indicators. Fisher, H.T.
November 26, 1963

B. Illuminated Indicators

1. Lamp Test of Incandescent Bulbs in Illuminated Displays. Langdoc, S.E.
May 29, 1963
2. Dimming of Illuminated Indicators and Decimal Readouts on IMCC Consoles.
Langdoc, S.E.
May 29, 1963
3. 72-Event Indicator Modules. B. Costis
August 18, 1967

4. 72-Event Indicator Module Brightness and Heat Level Study. B. Costis
August 18, 1967

IV. Televised Displays (3 reports, 4 memos, 2 figures concerning evaluation of display formats and equipment)

A. Evaluation of Televised Displays

1. A Profile Technique for Display Selection and Evaluation. Fisher, H.T.
PHO-TN100
May 22, 1963
2. Visual Display Parameters Required of a Console Mounted TV for Optimum Operator Perception. Fisher, H.T.
April 27, 1963

B. Character Design

1. Design of the Characters for the Charactron System. Fisher, H.T.
September 6, 1963

C. Flicker

1. Critical Fusion Frequency. Fisher, H.T.
November 8, 1963

D. Phosphor Evaluation

1. Preliminary Results of Color Phosphor Evaluation. Keizer, L.
February 7, 1966

E. Human Information Processing of Televised Information

1. Information Handling Rates for MOCR. Pittock, A.J.
June 7, 1963

F. Legibility of Displays on 2 Television Systems with Different Lines of Resolution

V. Group Display System

A. Group Display Requirements

(report concerning letter size, margins, symbol design, brightness ratios, resolution, and registration)

1. MOCR Group Display Requirements. Miller, G.E.
April 30, 1963

B. Viewing Angles

(2 memos, 2 figures and 1 drawing showing viewing angles between 17 consoles and 5 group display screens)

1. H. E. Analysis of MOCR Visual Angle and Line of Sight Parameters.
Fisher, H.T.
April 11, 1963

2. Bend Angle Study for MOCR Personnel. Islander, S.J.
July 30, 1963

C. Projection Plotting Stylus Evaluation. B. Costis
March 3, 1967

VI. Lighting Requirements: Ambient Light and Glare

(5 reports, 11 figures concerning MOCR ambient lighting requirements, glare on TV monitors, and anti-glare monitor coatings)

A. Ambient Light and Glare

1. A Study of Potential Lighting Problems in Operations and Support Areas of the IMCC. Langdoc, S.E.
January 3, 1964

2. IMCC Lighting Change Requirements. Langdoc, S.E.
May 29, 1963

3. Agent for Anti-Glare on TV Monitor Faces. Hendrickson, H.
July 9, 1963

4. Successive Glare of TV Monitor Images. Fisher, H.T.
August 27, 1963

5. Methods for Resolving Cathode Ray Tube Glare in the IMCC. Fisher, H.T.
April 8, 1964

VII. Pneumatic Tube Console Subsystem

(4 memos, 1 figure, and 2 drawings concerning pneumatic tube design)

A. Pneumatic Tube Configuration

1. Pneumatic Tube Housing Configuration. Fisher, H.T.
May 22, 1963

2. Advantages of Desk Top Loading and Delivery of the Carrier from the Pneumatic Tube Consoles in the MOCR. Paul, A.N.
July 31, 1963

3. MOCR Pneumatic Tube Design. Fisher, H.T.
October 31, 1963

4. MOCR Pneu-Tube Configuration. Oberholtzer, G.W.
November 13, 1963

VIII. Voice Intercom System

(1 memo stating change in dimensions)

- A. Review of Voice Intercom System, Amendment No. 1; Specification No. 1S1303-00204. Fisher, H.T.
September 23, 1963

IX. MOCR and SSR Room Layout

(1 memo on SSR layout, 1 report describing MOCR full-scale model)

A. SSR

- 1. Vehicle Subsystems Staff Support Room Layout. Oberholtzer, C.W.
May 8, 1963

B. MOCR

- 1. Preliminary Plan for Semi-Functional MOCR Mockup. Fisher, H.T.
June 7, 1963

X. Logic Cards Coding Analysis

A. Color Coding (2 memos)

- 1. Transmittal of Logic Card Color Coding Proposal to NASA. Marguglio, B.W.
November 8, 1963
- 2. Color vs. alpha-numeric Coding for Logic Cards. Parris, H.L.
November 13, 1963

XI. Flight Controller Training Program by Human Factor Instructors

A. Training Plan for Flight Controllers (4 reports 1 memo)

- 1. Flight Operators Familiarization Training Program. Human Factors Dept.
August 13, 1963
- 2. Flight Controller Training in Display Laboratory. Feeley, T.
February 19, 1965
- 3. Curriculum for Flight Controller Orientation/Familiarization Course.
Mission Operation Support Laboratory

XII. Digital Television Equipment

- A. Human Factor Evaluation of Color TV Displays. B. Costis, R. Wheaton
TO 921-4C-DT17
October, 1967

B. Proposed Studies of Digital Television Equipment and Display Formats

- 1. Evaluation of Computer Input Devices
- 2. Character Fonts for Digital Television Equipment
- 3. Display Density - A re-evaluation of RTCC Interim Facility D/TV Display
Formats for Digital Television Systems.