

**CENTER SERIES****MISSION CONTROL CENTER / REAL TIME COMPUTER COMPLEX**

Contained in this subseries are documents related to the JSC Mission Control Center (sometimes called the Integrated Mission Control Center, or IMCC) and the Real Time Computer Complex. Of particular interest are the contractor reports from Philco-Ford for the MCC and IBM for the RTCC. The remainder of the material consists of RFP's, correspondence, and memoranda related to these subjects. Apollo software for guidance and navigation receives particular attention occupying three folders of documents originating with the Apollo Guidance Software Task Group. The great majority of the documents were produced between 1962 and 1973, although some material exists from as late as 1986. Most of the materials are filed alphabetically by subject. Four boxes of documents contain materials related to individual programs. Of particular interest are a nearly complete set of RTCC Computer Complex Supervisor's Reports from Gemini and Apollo missions. Also of note are Mission Operations Training Sessions that describe hardware elements within the MCC. \*NOTE: A very useful reference tool is the chronology of "Major Implementation and Operations Milestones for the MCC" and "The MCC Development History" that are both filed at the beginning of the first box.

**Inventory**

<b>SubHeading:</b>	<b>Box Number: 01</b>	
SUBJECT FILES	Contractual History of Major Implementation and Operations Milestones (MCC)	January 10, 1986
SUBJECT FILES	Loree, Ray; MCC Development History	August 1990
SUBJECT FILES	ADP Acquisition Plan, Telemetry Processing Computers for MCC	April 23, 1979
SUBJECT FILES	Apollo Guidance Software Task Force (3 folders)	1968
SUBJECT FILES	Apollo Guidance and Navigation	1961 - 1971
SUBJECT FILES	Apollo Operational Control and Information Flow Design and Development Contract MSC-62-12 Contract Evaluation	February - March 1962
SUBJECT FILES	JSC Special ADP (Automatic Data Processing) Analysis Plan	April 1976
SUBJECT FILES	Command Hazards / Command Safety Systems	1968, n.d.
SUBJECT FILES	Communications Services for the IMCC (AT&T Reading File)	1962 - 1963
<b>SubHeading:</b>	<b>Box Number: 02</b>	
SUBJECT FILES	Computation and Data Reduction Division Organization, Functions, and Accomplishments	1963
SUBJECT FILES	JSC Computers	1972 - 1976
SUBJECT FILES	CSC Executive Summary & Final Report for the NASA MSC Database Requirements Study	July 30, 1971
SUBJECT FILES	Ground Computer Complex	1962
SUBJECT FILES	Human Factors Engineering in the Design of the Mission Control Center (notes)	c.1964
SUBJECT FILES	IBM Tour Book, Manned Spaceflight Control Center (MCC)	January 10, 1965
SUBJECT FILES	Management of Automatic Data Processing Facilities and Related Contracts by NASA (GAO Report)	April 24, 1963
SUBJECT FILES	Management Plan for the Manned Space Flight Network	February 5, 1963
<b>SubHeading:</b>	<b>Box Number: 03</b>	
SUBJECT FILES	MIT Correspondence	1967
SUBJECT FILES	MIT Correspondence	1968
SUBJECT FILES	MIT Correspondence	1969

SUBJECT FILES	MCC-H Dual Mission Support Capability (Mission Control Center)	1965 - 1966
SUBJECT FILES	MCC Mission Configuration / Systems Description	January 1971
SUBJECT FILES	MCC Modification Issue (historical)	November 1987
SUBJECT FILES	Mission Control Center Correspondence	1961 - 1962
SUBJECT FILES	Mission Control Center Correspondence	1963 - 1964
SUBJECT FILES	Mission Control Center Correspondence	1965 - 1973, n.d.
<b>SubHeading:</b>	<b>Box Number: 04</b>	
SUBJECT FILES	Mission Control Center Photographs	n.d.
SUBJECT FILES	Mission Control Center Press Information and Fact Sheets	1963 - 1965, n.d.
SUBJECT FILES	Mitre Corporation - Mission Control Systems Effectiveness Analysis, Final Report, 2 volumes	June 10, 1966
SUBJECT FILES	MSC Facilities - Integrated Mission Control Center Program Outlook Summary	1963 - 1964
SUBJECT FILES	NASA - Industry Apollo Technical Conference, Presentation on Mercury Flight Control	July 5 - 6, 1961
SUBJECT FILES	Philco (PHO-TR175) Command Format for the High Speed Data Link	March 15, 1966
<b>SubHeading:</b>	<b>Box Number: 05</b>	
SUBJECT FILES	Philco Corporation, Manned Spaceflight Control Center (MCC) Maintenance and Operations Activity Indoctrination Booklet	July 1964
SUBJECT FILES	Philco, MCC Operational Configuration, NAS9-1261, Vol. 1	April 25, 1975
<b>SubHeading:</b>	<b>Box Number: 06</b>	
SUBJECT FILES	Real Time Computer Complex	1971
SUBJECT FILES	RTCC IBM Monthly Progress Report, Nos. 1,2,7-11,13-14	1963 - 1964
SUBJECT FILES	Real Time Computer Complex for NASA Manned Spacecraft Center (IBM Proposal)	September 1, 1962
SUBJECT FILES	RTCC Computer Procurement	1966 - 1971
SUBJECT FILES	Real Time Computer Complex Statement of Work	May 1963
SUBJECT FILES	Redefinition / Conversion Contract No. NAS9-996 Design, Development, Implementation, Maintenance and Operation of the Real Time Computer Complex (RTCC) IBM Corporation	September 3, 1971
SUBJECT FILES	Review of Philco Function (MSC DU-3-73)	April 10, 1973
SUBJECT FILES	Scientific Mission Control Center	1966
<b>SubHeading:</b>	<b>Box Number: 07</b>	
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	WDL-TR-E112-2, Philco Western Development Laboratories, Facility Requirements and Building Specifications, Contract NAS9-366, (Integrated Mission Control Center) (with revisions dated 8/27/62)	July 1, 1962
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	WDL-TR-E120, Philco, IMCC Systems and Performance Requirements Specification (Contract NAS9-366) 2 volumes	September 7, 1962
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Kaiser Engineers, Design Criteria and Concepts for Integrated Mission	September 1962

	Control Center, Manned Spacecraft Center, NASA, Clear Lake, Harris County, Texas	
<b>SubHeading:</b>	<b>Box Number: 07A</b>	
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	MSC Requirement for Manned Space Flight Support Mission Control Center Implementation, Operation, and Ground Operational Support Systems Integration	September 1962
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Request for Proposal and Amendments, Mission Control Center Implementation, Operation, and Ground Operational Support Systems Integration	November 1962
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Kaiser Engineers, Basis for Design for Integrated Mission Control Center Manned Spacecraft Center, NASA, Clear Lake, Harris County, Texas	December 1962
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Philco - IMCC Program Plan	c. 1962
<b>SubHeading:</b>	<b>Box Number: 07B</b>	
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Request for Proposal, Design and Implementation of the NASA MSC Real Time Computer Complex	1962, n.d.
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Report of the Source Evaluation Board for the Integrated Mission Control Center	Dec 1962 - Jan 1963
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	C. C. Kraft MCC RFP Information File	1962 - 1963, n.d.
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Mission Control Center (IMCC) Procurement Plan and Contract Evaluation	1962 - 1963, n.d.
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Integrated Mission Control Center Implementation Negotiated Contract NAS9-1261 and Supplemental Agreements	1963
MCC DESIGN, CONSTRUCTION, AND IMPLEMENTATION	Philco IMCC (Mission Control Center) Contract Review NAS9-1261	1963
<b>SubHeading:</b>	<b>Box Number: 07D</b>	
MCC MAINTENANCE MANUALS	PHO-EM248, Maintenance Manual, Video Waveform Monitor, PHO-0S1002	February 15, 1965
MCC MAINTENANCE MANUALS	PHO-EM278, Maintenance Manual, Video Waveform Monitors, PHO-IP1034, PHO-IP1049, PHO-IP1051	August 30, 1973
MCC MAINTENANCE MANUALS	PHO-EM299, Maintenance Manual, Biomedical Display Unit, PHO-VC1684	November 30, 1974
MCC MAINTENANCE MANUALS	PHO-EM423, Maintenance Manual, Telemet Co. Television Test Generators	August 15, 1974
<b>SubHeading:</b>	<b>Box Number: 07E</b>	
MCC MAINTENANCE MANUALS	SISO-EM422, Maintenance Manual, Monochrome and Color Video Mixing Amplifier and Control Equipment	October 15, 1975
MCC MAINTENANCE MANUALS	SISO-EM4160, Maintenance Manual, SC Electronics, Incorporated Monochrome Video Monitors Models IOM915, 12M918, and 5M916RM3	July 15, 1980
MCC MAINTENANCE MANUALS	PHO-EM111, Maintenance Manual, Communications Line Switch Change 6	November 30, 1985
<b>SubHeading:</b>	<b>Box Number: 08</b>	
MISSION RELATED	Gemini Missions RTCC Computer Complex Supervisor's Reports (GT-V, GT-VI, GT-VII, GT-VIII, GT-X, GT-XII)	1965 - 1966
MISSION RELATED	Apollo Missions RTCC Computer Complex Supervisor's Reports	1966 - 1973

<b>SubHeading:</b>	<b>Box Number: 09</b>	
MISSION RELATED	PHO-TR170A, Apollo / Saturn Missions Trajectory Data Processing Requirements Applicable to MCC - Houston Real - Time Computer Operations (including changes)	1967 - 1970
MISSION RELATED	AS-205 (EORP) Real - Time Program System Parameters	1968
MISSION RELATED	Apollo Launch Events Charts	n.d.
MISSION RELATED	Ground Data Systems Division Skylab Experience Report	1974
<b>SubHeading:</b>	<b>Box Number: 10</b>	
MISSION RELATED	PHO-TR499, MCC Functional Specification for Skylab, Contract NAS9-1261, Revision A	March 28, 1973
MISSION RELATED	PHO-TR516, Skylab Mission Operations Planning Systems (MOPS) Terminal System Procedures Handbook	n.d.
MISSION RELATED	PHO-TR560, Apollo Soyuz Test Program, Mission Program Requirements for the Real - Time Computer Complex	February 1, 1974
<b>SubHeading:</b>	<b>Box Number: 10A</b>	
MISSION RELATED	JSC-10013, Mission Control Center System Specification for the Shuttle Orbital Flight Test (OFT) Timeframe	February 26, 1976
<b>SubHeading:</b>	<b>Box Number: 11</b>	
MISSION OPERATIONS TRAINING SESSIONS	Air to Ground Voice Data Flow Workbook (Operations Era) Introduction to TDRSS, Advanced Training Series	May 1984
MISSION OPERATIONS TRAINING SESSIONS	Ground Systems Command and Control Familiarization Manual, Basic Training Series	January 25, 1980
MISSION OPERATIONS TRAINING SESSIONS	Ground Systems Command Data Flow Workbook, GND CMD 2101A, Advanced Training Series	May 10, 1979
MISSION OPERATIONS TRAINING SESSIONS	Ground Systems Data Links Familiarization Manual (Operations Era) GDL T/M OPS 1107, Basic Training Series	July 15, 1983
MISSION OPERATIONS TRAINING SESSIONS	Ground Systems Telemetry Data Flow Workbook, GND TM 2101A, Advanced Training Series	March 28, 1979
MISSION OPERATIONS TRAINING SESSIONS	Introduction to Flight Control User Tools, UT Intro 2101, Advanced Training Series	May 1, 1979
MISSION OPERATIONS TRAINING SESSIONS	Manual Select Keyboard (MSK) Workbook, Ground Systems User Tools, UT MSK 2102A, Advanced Training Series	April 4, 1983
MISSION OPERATIONS TRAINING SESSIONS	MCC Digital Television Displays Workbook, Ground System User Tools, UT Display 2102, Advanced Training Series	December 15, 1978
MISSION OPERATIONS TRAINING SESSIONS	Opaque Telesvisor Workbook, Ground Systems User Tools, UT OPQ TV 2102, Orbital Flight Test	August 1, 1978
MISSION OPERATIONS TRAINING SESSIONS	Payload Support Console Handbook, Core, All Flights (JSC-19068)	November 1, 1985
MISSION OPERATIONS TRAINING SESSIONS	Pneumatic Tube System Workbook, Ground Systems User Tool, UT P-Tube 2102A, Advanced Training Series	July 1, 1983
MISSION OPERATIONS TRAINING SESSIONS	Summary Message Enable Keyboard (SMEK), UT SMEK 2102, Space Transportation System	November 15, 1978

MISSION OPERATIONS TRAINING SESSIONS	Voice Keysets Workbook Ground Systems, User Tools, UT Keyset 2102A, Advanced Training Series	July 13, 1979
<b>SubHeading:</b>	<b>Box Number: 12</b>	
VOICE SWITCHING SYSTEM / MCC	PHO-TN110, Automatic Voice Switching System Computer Sizing Study, NAS9-1261	February 24, 1967
VOICE SWITCHING SYSTEM / MCC	PHO TR-332, MCC-H Voice Switching System Study Final Report, Contract NAS9-1261	September 22, 1967
VOICE SWITCHING SYSTEM / MCC	PHO-TR320, Volume II, Automatic Voice Switching System Requirements Control Document, System Software Requirements, Contract NAS9-1261	October 27, 1967
VOICE SWITCHING SYSTEM / MCC	SS-08736, Automatic Voice Switching System Specification, Contract NAS9-1967	December 15, 1967
<b>SubHeading:</b>	<b>Box Number: 13</b>	
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, Mission Systems - General (vol. 1)	November 29, 1966
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, AS-500 Mission Planning, Mission Systems, Volume 1	November 29, 1966
<b>SubHeading:</b>	<b>Box Number: 14</b>	
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, AS-500 Mission Planning, Mission Systems, Volume 2	August 28, 1968
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, AS-500 Systems Integration, Mission Systems, Volume 1	November 29, 1966
<b>SubHeading:</b>	<b>Box Number: 15</b>	
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, AS-500 Systems Integration, Mission Systems, Volume 2	December 15, 1967
IBM / RTCC APOLLO PROGRAMMING SERIES	IBM RTCC Apollo Programming Series, AS-200 Systems Integration, Mission Systems, Volume 2	December 15, 1967
Oversize - Stored on Shelves	Apollo and ASTP Real - Time Program System Parameters (computer printout)	1968 - 1974
Oversize - Stored on Shelves	U.S. Army Engineer District, Fort Worth and Kaiser Engineers, Plans for Construction of the Integrated Mission Control Center, Manned Spacecraft Center for the National Aeronautics and Space Administration, Clear Lake, Harris County, Texas, Volume I, IIA, IIB, IV, V / Phase II	February 1963