

TELEVISION MANAGEMENT PLAN

1.0 INTRODUCTION

1.1 Objective

The Television Management Plan for the Skylab Medical Experiments Altitude Test (SMEAT) is a document intended as a comprehensive plan covering the use of television in all experiments, safety, medical monitoring, and any contingency circumstances.

1.2 Scope

This plan is applicable to all phases of the SMEAT Program including pretest, test, and post-test, and is the controlling document for all TV coverage of the SMEAT Program. After final approval, any changes to this document can be made only with the approval of the SMEAT Steering Committee.

1.3 TV System Description

The SMEAT closed circuit TV system provides TV monitoring and recording of activities inside the chamber for medical experiments, medical surveillance, and safety purposes. The basic system is composed of five cameras in the crew bay chamber area, one camera in the outer lock, the Building 7 video control console (Room 114), the MSC video control center (Building 8), approximately nine monitors in the SMEAT test control areas of Building 7, and three monitors in the Building 36 control center. Of the five cameras in the crew bay, four fixed mounted cameras will monitor the wardroom, the experiments area, and the second level. The fifth will be a portable camera with tripod.

1.3.1 Chamber TV System

1.3.1.1 Camera Location and Mounting

Figure 1 illustrates the camera location inside the chamber. As indicated, three cameras, (E2, F1, and P1) are equipped with 20 to 80 mm zoom lenses. Cameras E1, L1, and W1, utilize fixed 10 mm wide-angle lenses. The zoom lenses are remotely controlled from the Building 7 console. The portable camera (P1) will normally be stowed. The cameras on the pan and tilt mounts may be manually repositioned by the crewmen. The output from each crew bay area camera (E1, E2, F1, W1), is "hardlined" to a monitor in the 20-ft chamber control room. In addition, the output from each of the cameras is switchable for recording and display. Cameras E1, and F1, have been designated as the cameras to be recorded during emergencies unless otherwise specified by the Test Director. Procedurally, the crew bay area mounted cameras will be kept operating at all times except for the target voltage. When the target voltage is turned up, an instant picture is received from the camera which permits a fast response to emergency situations. The lock camera, L1, will be kept on continuously.

1.3.1.2 Camera Description

The basic camera is a Cohu Model 2000 environmentally sealed camera. The camera housing design is certified to following explosion resistance specifications - MIL-E-5272C, Procedure IV, paragraph 4.13.5 and MIL-STD-810, Method 511, Procedure II.

Prior to chamber installation, the camera housings are sealed and leak checked. Power to the crew bay area cameras is fused using the STB-SOPM as a guideline.

1.3.2 Television Control Areas

The control areas for the SMEAT closed circuit TV system are the video control console in Room 114, Building 7, and the MSC video control center at Building 8. The Building 7 console is the remote control station for TV cameraa and monitor operations. Building 8 provides video recording, GMT superimposing on video signals, GMT distribution, and video distribution outside of Building 7 and Building 8 areas. Both video control areas are to be manned on a continuous basis during the SMEAT.

1.3.2.1 MSC Audio and Video Control Center (Building 8)

The MSC Video Control Center in building 8 contains the TV monitoring, recording, and processing equipment capable of handling SMEAT TV requirements. Only TV operational personnel have access to this area.

1.3.2.1.1 Audio and video recordings between Buildings 7, 8, and all other viewing areas as approved by the SMEAT steering committee shall be channeled through the MSC Control Center. In addition to the above, Building 8 shall provide the following:

1. Video recording playbacks and all entertainment film showings to the 20-ft chamber entertainment color monitors.
2. Live classroom closed circuit loop TV from Room 114 in Building 7 to the 20-ft chamber.
3. Twenty-four (24) hour instantaneous dual recording coverage in case of an emergency.

4. Maintain a kinescope and tape materials file and storage.
5. Install, operate and maintain all TV equipment.

1.3.2.1.2 Video Recroding

Two video tape recorders (VTR) located at the Building 8 video control center will be used for recording. Routine operations will be that one of the machines will run continuously with the second in a standby mode. At any time the console operator is required to be absent from machines, both machines would be left running. This method permits video recording to be initiated by the Building 7 console operator when he switches the camera output to the VTR. On the video tape there is also recorded a GMT timing signal and a test intercom audio track.

1.3.3 Greenwich Mean Time - GMT

GMT will be superimposed on one of the monitor images in the 20-ft chamber control room. Additionally, this same signal will be continuously available to the test subjects for viewing on their recreational TV monitors.

1.3.4 System Power

The Building 7 video system is powered by public utility power.

1.3.5 Television Display Monitors

Video monitors for SMEAT chamber TV will be as follows:

1.3.5.1 Building 7 Control Room - Six each monitors in the 20-ft chamber control room (SE corner).

1.3.5.2 Building 7 Medical Monitoring Console - Three monitors in the medical monitoring console (Room 114).

1.3.5.3 Additional Monitors - Monitors as required in the Building 7 and Building 8 video control areas.

1.3.5.4 Chamber TV Monitors - Two color monitors viewable by the test subjects through the chamber viewports. These monitors will have available commercial channels 2, 8, 11, and 13. In addition to the commercial channels, two closed circuit channels A and B are provided.

1.3.5.5 Building 36 - Three monitors shall be located in the Operations Control Center in Room 240, Building 36. One monitor in the EO control console and two in the M151 display console. An additional monitor is located in the Data Control Console, Room 240, Building 36. The M151 Display Console will receive and display the video signal from two separate chamber cameras simultaneously.

1.3.5.6 Building 2 - Monitors as required by the MSC management personnel.

2.0 TV SYSTEM OPERATIONAL GUIDELINES

The TV operations plan, as presented in Section 7.0 of the Experiments Operations Plan, MSC Document MSC-06858, dated May 15, 1972, contains the basic TV guidelines for the SMEAT test and are not superceeded by this Document. Additional guidelines as presented in this document are intended to supplement the TV Operations Plan and provide explanatory material and details not contained in the Experiment Operations Plan.

2.1 TV Operations Plan

The TV Operations Plan is included as Appendix A of this document.

2.2 Additional Guidelines

2.2.1 Medical Surveillance

Three TV monitors are available at the Medical Control Console at the Medical Officer's station in Room 114, Bldg. 7. All regularly scheduled TV

will be received at the Medical Control Console. This will include safety monitoring and experiment monitoring. The Medical Officer shall have the option of requesting additional directed TV monitoring if in his opinion there exists a threat to the health of any crew members. Crew members may request direct video and audio communication with the Medical Officer at any time during the test. All physician to patient type communications shall be strictly closed loop and will not be distributed to any station other than the Medical Control Console. A physician shall be present at the Medical Control Console in Building 7, or at the Control Console in Building 36 for all sessions of the M092, M093, and M171 experiments

2.2.2 Experiment Television Coverage

Television coverage of each experiment, as specified in the TV Operations Plan, shall be monitored by the PI or the PCS or his designated representative. At the discretion of the PI or his representative, a kinescope of the experiment session can be requested from the Building 8 Video Control Center for inclusion in the Building 36 experiment data archives. No kinescope shall be released from Building 36 without approval of the Test Operations Management Committee (TOMC).

2.2.2.1 M151 Time and Motion Experiment

The successful accomplishment of the M151 SMEAT DTO requirements necessitates that a representative for the M151 Experiment be stationed in the building 7 chamber control room (Room 103A) in close proximity to the Test Director (TD). This is necessary to enable the M151 experiment observer to designate which of the two cameras activated for each activity will be taped. An M151 observer will be present in the Building 7 control room only during the performance of experiments

or activities that are to be used for data sessions as called out in the M151 SMEAT DTO and the FDF.

In addition to the M151 observer in Building 7, M151 will also station an observer, during the daped data sessions, in building 36. The Building 36 facility will also be used by M151 to monitor any other required runs of major medical experiments. No requirement exists for an M151 experiment observer to be present at the Building 7 facility at these additional times.

2.2.2.2 Major Medical Expeeiments

Television coverage of the major medical experiments shall include all sessions, with the exception of those included in the Skylab Simulation Test period.

2.2.2.3 General DTO Coverage

The initial performance of each DTO shall be televised for monitoring by the PI or his designee in Building 36. Additional TV coverage shall be as specified in the applicable DTO requirements. In the event that non-scheduled TV coverage is required by the PI, such coverage shall be scheduled after approval of the crew, the TD and the TOMC.

2.3 Television Monitoring Access

Television monitoring access to the SMEAT Test shall be controled to insure that operational control areas are kept free of any interference, to restrict access to sensitive medical data, to afford privacy to the crew, and to provide personal physician-patient communications.

2.3.1 Procedures

The SMEAT Steering Committee shall designate those areas approved for SMEAT television reception and those individuals who are not members of the operational team that have access to the areas. The Chairman of the SMEAT Steering Committee shall notify the MSC Audio and Video Control Center (Building 8) via memorandum of the approved areas and personnel.

Monitoring of SMEAT TV shall require the designated person to call the Building 8 Audio and Video Control Center at Extension 5213 or 5291 and request coverage. On completion of the monitoring, the designated person is requested to immediately inform the Audio and Video Control Center so that coverage can be discontinued.

2.3.2 Monitoring Areas

The following areas have been approved for SMEAT TV monitoring:

1. Building 7 - Control Rooms
2. Building 8 - MSC Audio and Video Control Center
3. Building 36 - Experiment Operation Control Room and Data Control Center
4. Building 2 - Management Monitoring Area

2.3.3 Personnel Access to Monitoring Area

The following have been approved for access to the monitoring areas:

1. The SMEAT Test team members as required to conduct the test.
2. Additional personnel with TV monitors adjacent to desks as follows:

Dr. C. C. Kraft	Building 2
Mr. S. A. Sjoberg	" 2
Mr. G. W. S. Abbey	" 2
Dr. K. K. Slayton	" 2
Dr. M. A. Faget	" 2
Mr. A. C. Bond	" 2
Mr. K. S. Kleinknecht	" 2
Mr. R. E. Smylie	" 7A
Mr. R. S. Johnston	" @

Additions to these lists shall require the approval of the Chairman of the SMEAT Steering Committee.

2.2.4 Contingency and Emergency TV Coverage

2.2.4.1 Contingency TV coverage is defined as unscheduled TV coverage arising from unforeseen occurrences. This includes such events as additional experiment coverage, medical coverage, safety monitoring, problem areas, and additional Public Affairs Office coverage. Contingency coverage shall be agreed upon by the person defining the problem or requesting the coverage, by the Test Director and by the crew. Such TV coverage shall be approved by the TOMC.

2.2.4.2 Emergency TV Coverage

Emergency TV coverage shall be initiated at any time there is an immediate threat to the crew or the test. Emergency coverage shall be initiated by the TD at his own volition or upon the request of the Medical Officer or the Safety Officer. During an emergency, the sequence of operations to initiate video recording and monitoring is as follows:

A visual alarm light in conjunction with emergency audio intercom is received by the Building 7 video console operator. He then actuates his emergency switch which results in the following:

1. The four fixed mounted cameras are displayed on their respective control room monitors.
2. The previously designated camera is recorded on the already running VTR.
3. The Building 8 video operator is alerted to start VTR recording of the second previously assigned camera.

In the case of an emergency occurring during video taping on some test event, there could be additional switch actuations (a maximum of two) required of the Building 7 video console operator.

3.0 M151 TV SUPPORT PLAN

3.1 Change Control

3.1.1 Criteria

3.1.1.1 Pretest

1. If the flight plan were revised and if one or more of M151's data sources were deleted, M151 would substitute a different experiment or activity to replace the deleted data source. For example, should M171 be deleted, MO93 could be substituted for it.
2. If the flight plan were revised and any of M151's data sessions rescheduled, M151 might need to choose a different session to film. For example, if two of M151's data sessions of different activities or experiments were scheduled to occur at the same time, a different session of one of those data sources would have to be chosen.

3. If procedural changes caused a data source to be of little or no value to M151, a different activity or experiment would be chosen.

3.1.1.2 Real Time: Should a data session not be documented, either because of an anomaly in the performance of the activity or experiment, or poor quality of the kinescope, M151 would have to substitute a later session to document.

3.1.2 Procedures

Pretest: If it is necessary to make any changes in the M151 film schedule, M151 will make input into the flight planners by CCBD if necessary.

Real Time: If a data session is not documented and another session is to be substituted for it, M151 will make a request for a substitute data session at the daily planning meeting on the day following the original data session.

3.2 Sessions

3.2.1 Timeline Designations

3.2.1.1 M151 will observe and tape (Figure 1)

1. M092/171 days 2+3, 6, 12, 18, 26+27, 36, 42, 48,
a total of 8 performances by each crewman.

2. Portable camera setup/Food Prep/SMMD.

Breakfast days 3, 6, 11, 20, 40, 51, 55. Lunch days 2, 4, 13, 21, 32, 41, 52, 56

Dinner days 1, 5, 12, 22, 33, 42, 53, 54.

3. Shower setup and stow

4. IMSS Day 13, 31

3.2.1.2 M151 will observe all sessions of M092/093/171 (whether being taped or not).

3.2.2 Camera selection Viewing Protocol

Azimuth and elevation will be determined during in-chamber training sessions and will appear in the checklist as part of the FDF.

3.2.3 Camera selection Recording Protocol

3.2.3.1 Time - Start/stop: Will be determined before the test and will appear in the TD's timeline and the FDF. A sufficient TV viewing time will be added prior to and following the documented session in order to insure that all preparations are complete so that no activity is inadvertently lost.

3.2.3.2 Azimuth and elevation: Will be determined before the test and will appear in the TD's timeline and the FDF checklist. Azimuth and elevation must be verified by a crewman before each M151 data session.

3.2.3.3 Camera designation

1. Present taping plan:

- a. M092/171 - cameras 2 and 3
- b. Portable camera setup - cameras 2 and 3
- c. Food prep - camera 1
- d. SMMD - portable camera
- e. Shower - camera 3
- f. IMSS - camera 1

2. At any time, only one camera will be used for taping even if two are on. However, two cameras may be used for taping at different times during one filming session.

3. M151's viewing facility at building 36 will have the capability of displaying the picture from two cameras simultaneously. However, only one camera will be taped at any one time. Real time capability to change taping camera exists and can be accomplished by M151 personnel telephoning from Building 36 to Building 8.

3.2.3.4 Indexing, storage, distribution/accountability, and transmittal: M151 Personnel will log out kinescopes and voice tapes which will be kept at M151's off site location (Vanguard Building, Clear Lake City) until after the end of SMEAT, at which time they will be returned to Building 36 for medical archival storage. M151 requires that all original video taped of M151 data sessions be kept for at least 48 hours so that M151 personnel can ascertain the quality of the kinescopes.

3.2.4 Reports

M151's post mission report on TV use will include the extent of TV use, and the value of the system used in the SMEAT Program to the successful collection of data.

3.3 M151 Success Criteria

3.3.1 Data Session

There are two major criteria by which M151 personnel will measure the success of a filmed data session. The first is the successful documentation and completion of the planned activity by the crewman. The second is the quality of the TV transmission (and the kinescope made from same).

M151 personnel will be able to make immediate determination of success related to the first criteria after observing the activity from the M151 SMEAT

monitor station in Building 36. If one of the planned data sessions is not performed for any reason during the test, the M151 Experiment Manager will be available for consultation on a real time basis for selection of an alternative activity source.

The second criteria can only be judged after the kinescope of the activity has been delivered to M151 and viewed or its equipment at its analysis laboratory.

Failure to meet either of these criteria will cause an input to be made by M151 personnel at the daily planning meeting on the day after the unsuccessful data session.

3.3.2 Experiment Results

There are two major criteria for judging the overall success of data collection. These criteria are whether the M151 DTO requirements of quantity and specific sessions are met. Failure to document the specific sessions (especially the early ones) called for in the DTO will have a negative impact on experiment results, in that specific sessions were chosen so that it would be possible to plot adaptation curves over the entire 56-day time interval. Although plots will still be obtainable, they will not be as reliable as hoped. Failure to obtain the called-for amount of data will seriously impact experiment results. However, because M151's Functional Objectives are not all dependent on one data source, low success with one FO will not influence the others and therefore will still allow for completion of the other EO's and for valuable results. If one of M151's data sources is cancelled completely before the test, the M151 Experiment Manager will be available for consultation on a real time basis, and a reasonable substitute could be found without critically impacting the experiment.

4.0 EXPERIMENT TV SUPPORT PLAN

4.1 Change Control

4.1.1 Criteria

The criteria for real time changing or adding to the scheduled television coverage of SMEAT chamber DTO activity are as follows:

1. The first scheduled conduct of a DTO is to be televised. Should it be impractical to televise this session the second will be televised.
2. In the event that a PI/PCS or their representative monitoring a DTO performance feel additional TV coverage is necessary they will initiate the procedures as outlined in paragraph 4.1.2 to request additional television coverage.
3. At any time an equipment failure, flight plan change, procedural anomaly or other circumstance prohibits or degrades a scheduled TV coverage, another session will be substituted.

4.1.2 Procedures

The following procedures shall be used to modify scheduled TV coverage of DTO's. Additions or changes to DTO TV coverage will be requested at the daily planning meeting. The EO will notify the TD for

WE NEED COMPLETION OF 4.1.2

AND

ALL OF 4.2

4.3 Camera Selection Viewing Protocol

Azimuth and elevation will be determined in training sessions and during the dry run and shakedown tests, and will appear in the checklist as part of the FDF.

4.4 Camera Selection Recording Protocol

4.4.1 Time - Start/stop. Adequate viewing time will be provided prior and post conduct of the DTO requirements to validate preparation procedures and to insure no necessary data is inadvertently lost. Specific times will be determined during training, dry run, and shakedown run for inclusion in the checklists and FDF.

4.4.2 Camera Description

A preliminary copy of the DTO camera descriptions appears as Appendix B. This list will be updated as additional information becomes available following the training sessions, dry run and shakedown run.

4.4.3 Indexing, Storage, Distribution/accountability, and Transmittal

Each use of the television viewing cameras will be taped. If no request to preserve the taped pictorial data is transmitted to Building 8 immediately after a camera recording session or if there is no pre-established tape preservation plan, TV tapes will be erased within hours. TV recordings for which preservation is established shall be converted into kinescope film for 16 mm playback in Building 36.

Kinescopes shall be stored in Building 8. They shall be indexed by calendar date, the spanning GMT interval, and a general title of the recording session. A log of the available kinescopes shall be maintained by the SMEAT Experiments Data Manager.

Should a need arise to review a specific kinescope, the prospective viewer shall be provided access to the SMEAT Experiments Data Manager's TV log at

Building 36. After acquiring the TV Log kinescope designation, the prospective viewer and the SMEAT Experiments shall prepare a TV data request form. The SMEAT Experiments Data Manager shall make provisions to have the selected kinescope delivered and projected at Building 36. Subsequent to viewing, the SMEAT Experiments Data Manager shall return the kinescope to Building 8.

Should the need arise to have a copy made of the kinescope, a DRF shall be prepared by the originator, coordinated for approval by the Director, Life Sciences Directorate, and forwarded to the SMEAT Experiments Data Manager for processing. After a kinescope copy is made, it shall be stored in the SMEAT Data Management Archive until such time that the Director authorizes removal for either an experimenter's personal use or destruction. A kinescope disposition log shall be maintained by the SMEAT Experiments Data Manager. Should a kinescope be transferred for personal use, accountability shall be assumed by the user with a transfer receipt. All kinescope data shall be maintained on site. Temporary removal shall be approved by the Director.

Kinescopes shall be destroyed at a time designated by the Director and presumed to be after the Skylab Program. At that time, kinescopes retained for personal use shall be returned to the archives and destruction certified by the Data Manager.

4.4.4 Reports

The PI/PCS or Primary Experiments Manager shall include in their post SMEAT reports an evaluation of TV coverage for each DTO. No specific report is required with the exception of DTO 71-1.

5.0 SAFETY TV MONITORING

A Test Safety Officer (TSO) will be assigned to "Safety Monitor" the SMEAT test program in Crew Systems Division's 20-foot chamber facility.

A TSO will be present and an active part of the test team only for selected periods of the test activity. These periods will include times of high test activity and any activities recognized to be of an unusually hazardous nature. In addition, the TSO or a representative of the Safety Office will make spot checks periodically on all shifts. There will also be a representative of the Safety Office on call at all times during the proposed test activity.

It should be noted that the Safety Office support contractor will be performing normal industrial safety functions and inspections on an increased frequency and will be available as required for special studies or problems.

APPENDIX A

7.0 TV OPERATIONS PLAN

7.1 BACKGROUND

The closed circuit TV monitoring system was implemented for experiment evaluation and medical surveillance purposes. The major experimental use is for time and motion studies of crew activities. Medical surveillance TV usage includes medical observation of the crew and monitoring of equipment inside the chamber.

7.2 SYSTEM DESCRIPTION

The closed circuit TV system provides monitoring and recording of activities inside the chamber. The TV system consists of five cameras inside the crew bay compartments, one camera in the outer lock of the chamber, the Bldg. 7 video control console (Room 114), the MSC video control center (Bldg. 8), and approximately nine monitors in the test control and data rooms of Bldg. 7. Four of the five cameras located in the crew bay compartment are fixed mounted types for monitoring the wardroom, the experiments area, and the second level work station. The fifth camera is portable with tripod provisions. The outer lock monitoring camera is a fixed mounted type.

Control areas for the closed circuit TV system are the video control console in Room 114, Bldg. 7 and the MSC video control center in Bldg. 8. The Bldg. 7 video control console is the main station for TV camera and monitor operations. Bldg. 8 provides video recording, GMT superimposition, GMT and video distribution external to Bldg. 7 and Bldg. 8 areas. Each video control area will be manned on a continuous basis.

Video recordings are to be accomplished by video tape recorders (VTRs) located in the Bldg. 8 Video Control Center. Operating methods allow video recordings to be initiated by the Bldg. 7 video control console operator. Also recorded on the video tape in Bldg. 8, are timing signal and the CapCom to Test Subject intercomm audio link.

7.3 TV SCHEDULE CRITERIA

The television use schedule for SMEAT chamber monitoring is based on the following criteria:

- Normal TV Monitoring
 1. Continuous coverage for the dry run.
 2. Continuous coverage for the shakedown test.

APPENDIX A
(continued)

7.3 TV SCHEDULE CRITERIA (Continued)

3. Continuous coverage for the first 48 hours of the actual test.

4. For the first week of test; coverage of all experiments plus other major activities and specified medical surveillance monitoring.

5. Following the first week of test; specified medical surveillance plus specified experiment monitoring as required by applicable Detailed Test Objectives (DTO's).

• Problem TV Monitoring

TV coverage of any "Problem Area" as agreed to by the person(s) defining the problem, the Test Director, and the Crew.

• Contingency TV Monitoring

TV coverage anytime there is an immediate threat to the Crew or Test. This would include anytime an alarm is initiated within the chamber.

• Medical Surveillance TV Monitoring for SMEAT is as follows:

1. Three daily scan runs of 30 minutes duration with all cameras, including the portable camera to view otherwise inaccessible areas. One run is to be shortly after breakfast and one in mid afternoon (approximately 2100 GMT). The other will be shortly before the crew retires for the evening. The SMEAT Crew Timeline should be referenced for actual scheduled times.

2. Medical Surveillance monitoring will include all M092, M093, and M171 experiment runs with the experiment compartment cameras.

3. Requirements for additional Medical Surveillance monitoring is to be evaluated and specified at a later time.

Access to the viewing of chamber activities will be restricted to those personnel with a valid viewing requirements.

TV monitoring will normally be limited to the Chamber Test Control Room and Data Acquisition Room (DAR) of Bldg. 7. The video signal will be sent to the Bldg. 36 Remote Data Display Room via the MSC Facility TV and Audio Distribution Center (Bldg. 8).

APPENDIX B
(preliminary)

<u>ACTIVITY</u>	<u>CAMERA DESIGNATIONS</u>
IMSS-1	W1
IMSS-2	W1
IMSS-3A	W1
IMSS-3B	W1
IMSS-3C	W1
IMSS-4A (Preparation & Processing)	W1
IMSS-4B (Processing)	W1
IMSS-4C	W1
IMSS-4D	W1
IMSS-5 (Preparation)	W1
1st 48 HOURS	E1 E2 F1 P1 W1
SAFETY (30 minute periods)	E1 E2 F1 P1 W1
CHAMBER (Sleep Period)	E1 E2 F1 W1
ORAL	E1 E2 W1
MICRO	E1 E2 W1
FOOD PREP - M151	W1
SHOWER - SETUP	E2
SHOWER - STOW	E2
SMMD - M151	P1
EMM	W1
EN-1	E1 E2 F1 W1
EN-2	E1 E2 W1

Appendix B (Cont.)

<u>ACTIVITY</u>	<u>CAMERA DESIGNATIONS</u>
EN-3	E1 E2 W1
EN-4	E1 E2 W1
EN-5	E1 E2 W1
M071	P1
M074	P1
M092/M093	E1 E2
M092/M171-M151	E1 E2
M110	E1 E2 W1
M133 (Donning & Doffing)	E1 E2 P1 W1
M487	E1 E2 P1 W1
CO ₂	E1 E2 P1 W1
T003	E1 E2 W1
Food Transfer	P1
OBS	E1 E2
CO	TBS

	DAY																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18 19 20
M092/171		PLT	CDR SPT			x						x						x
Shower								S						S				
IMSS(1)													I					
Food Prep/SMMD/ Portable camera setup	D	L	B	L	B	D					B	D	L					
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37 38 39
M092/171							PLT	CDR SPT									x	
Shower	S						S									S		
IMSS(1)												I						
Food Prep/SMMD/ Portable camera setup	D	L	B									B	L	D				
	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
M092/171				x						x								
Shower			S								S							
IMSS(1)																		
Food Prep/SMMD/ Portable camera setup		B	L	D									B	L	D	D	B	L

x = All crewmen

Figure 1.