DEPARTMENT OF THE AIR FORCE
Headquarters Air Force Technical Applications Center
Patrick AFB FL 32925-6001

CENTER REGULATION 55-3

25 July 1986

Operations

AERIAL SAMPLING OPERATIONS

This regulation defines requirements and provides procedures for the conduct of aerial sampling missions directed by this organization.

TABLE OF CONTENTS

Supersedes CENR 55-3, 21 September 1984 (See signature page for summary of changes.)
No. of Printed Pages: 96
OPR: DOR (MSgt K. C. Brauchle)
Approved by: Col T. H. Niquette
Editor: Sgt M. J. Brown
Distribution: X (See Attachment 4)

Chapter 11 - Reports

Chapter 12 - Radiological Safety

Chapter 13 - Decontamination/Sanitization

Chapter 14 - Sample Disposition

Chapter 15 - OLYMPIC RACE Operations

Figures

Table

Attachments

Chapter 1

TASKS AND RESPONSIBILITIES

1-1. Purpose. This chapter outlines the tasks and responsibilities concerning AFTAC aerial sampling operations.

1-2. Tasks of HQ AFTAC and Subordinate Units:

a. Headquarters AFTAC will:

(1) Determine the aerial sampling, detection, and collection requirements of the Atomic Energy Detection System (AEDS).

(2) Establish tasking criteria (flight level, time, and area) to satisfy these requirements.

(3) Advise appropriate commands and subordinate units of aerial sampling, detection and collection requirements, and tasking criteria.

(4) Maintain documentation of mission non-accomplishment (MNA).

(5) Provide Air Operations Officer(s), Special Equipment Operators (SEO) as required.

(6) Conduct annual visits/briefings to flying support organizations.

(7) Provide liaison with major air commands for aerial sampling operations.

(8) Maintain a data base of airborne sampling missions for historical reference.

b. The Tech Ops Div will:

(1) Coordinate base support and courier resources as required.

(2) Provide Air Operations Officer(s), SEO(s), and laboratory technician(s).

(3) Provide ARE support and depot maintenance.

(4) Provide the local flying organization with the names of assigned and TDY SEOs for each mission and assure they are placed on the flight orders.

(5) Determine sampling tracks and transmit them to SAC and MAC as required.

(6) Ensure coverage of debris trajectories as directed by this headquarters.

(7) Provide formal/informal training to SEOs, U-2 pilots, and Air Operations Officers.

(8) Conduct aircrew mission briefings and debriefings.

(9) Conduct semiannual visits/briefings to flying support organizations.

c. The Pacific Tech Ops Area will:

(1) Maintain liaison with major air commands for aerial sampling operations.

(2) Coordinate base support and courier resources as required.

(3) Provide assistance to deployed forces as required.

(4) Through Det 407:

(a) Determine sampling tracks and transmit them to SAC and MAC as required.

(b) Ensure coverage of debris trajectories as directed by this headquarters.

(c) Coordinate and support U-2 sampling operations through EL 476.

(d) Provide an Air Operations Officer, SEO(s) and laboratory technicians as required.

(e) Establish and initiate courier services as required.

(f) Provide support flying organizations with names of assigned and TDY SEOs for each mission and assure they are placed on the flight orders.

(g) Conduct aircrew mission briefings and debriefings.

(h) Conduct semiannual visits/briefings to flying support organizations.

(5) Through Det 460:

(a) Determine sampling tracks and transmit them to SAC and MAC as required.

(b) Ensure coverage of debris trajectories as directed by this headquarters.

(c) Coordinate and support polar sampling operations as required.

(d) Establish and initiate courier services as required.

(e) Provide support flying organizations with the names of assigned and TDY SEOs for each mission and assure they are placed on the flight orders.

(f) Provide liaison support for Air Operations Officers and SEOs.

(g) Conduct aircrew mission briefings and debriefings.

(h) Provide an SEO, as required, to organizations conducting aerial sampling operations.

d. European Tech Ops Area will:

(1) Maintain liaison with major air commands for aerial sampling operations.

(2) Coordinate base support and courier resources as required for aerial sampling operations.

1-3. Mission Requirements Coordination:

a. AFTAC air operations field personnel will coordinate all sampling requirements with the flying support unit. This coordination will include, as soon as practicable after tasking notification, an estimate of the coverage required, AOI requirements, timing, duration of operation, and logistic requirements.

b. The tasked flying support unit will be responsible for providing the requested coverage from locally controlled resources or by requesting through its headquarters the deployment of additional aircraft to meet mission requirements.

1-4. Individual Responsibilities:

a. It is the responsibility of each individual performing or directing aerial sampling operations to comply with the intent of procedures and requirements specified in this regulation.

b. Any person having knowledge of a need to change an existing requirement or procedure, or to establish a new requirement or procedure will advise HQ AFTAC/DOR in writing through the appropriate command channels. Submit recommended changes using AF Form 847, Recommendation for Change of Publication (Flight and Standardization Manuals).

1-5. References:

a. HQ USAF COMBAT CATCH Plan.

b. HQ USAF CONSTANT DOME Plan.

c. HQ USAF CONSTANT FISH Plan.

d. HQ USAF CONSTANT GLOBE Plan.

e. CENR 60-1.

Chapter 2

OPERATIONS

2-1. Purpose. This chapter specifies the general requirements for aerial sampling operations. In addition, it specifies the content and format of the Flight Crew Information File (FCIF) and the AFTAC mission numbering system.

2-2. Responsibilities. Mission procedures and techniques used by SEOs in the performance of aerial sampling operations will conform to the requirements of this regulation. The inflight procedures specified in this regulation apply to all personnel operating atmospheric research equipment (ARE) in support of AFTAC requirements. HQ AFTAC will maintain the master log (CEN Form 15, Mission Data Sheet) for all operating locations not supported with a permanent AFTAC air operations unit. Detachments and temporary operating locations will maintain CEN Forms 15 for locations within their geographical area.

2-3. Mission (Sortie) Identifiers. Identify all sorties flown in support of AFTAC collection requirements using a four part sortie identification system.

a. The first part will consist of a two digit group identifying the aircraft type. This group will consist of 02 for U-2, 03 for P-3, 30 for C-130, 35 for C-135 and 52 for B-52.

b. The second part will consist of location identifier(s).

(1) For round robin sorties, the second part will consist of the International Civil Aviation Organization (ICAO) identifier designating sortie departure location.

(2) For other sorties, the second part will consist of the ICAO identifier designating sortie departure location followed by the ICAO identifier of the termination location.

(3) Obtain the ICAO identifiers from the applicable IFR Enroute Supplement or the International Civil Aviation Organization DOC 7910/xx "Location Identifiers".

c. The third part will consist of the ordinal number of the flight for the type of aircraft and departure base. Ordinal numbers will begin with 001 for each aircraft type from each departure base. The numbering system will be by fiscal year commencing with 001.

d. The fourth part will consist of an alphabetical suffix. Add this suffix to each mission number to designate a specific type of sortie. Normally, use only one of the following for each mission number.

(1) AFTAC Funded Sorties. These sorties are approved by this headquarters and specifically generated to fulfill AFTAC collection requirements:

SUFFIX	TYPE
A	Deployment/Redeployment Sortie (Positioning of an aircraft to include rotators)
B	Periodic Background Sampling Sortie
D	Domestic Operations Sortie
E	PONY EXPRESS Operations Sortie (against an active closure area)
F	Optical Sortie (other than Pony Express)
M	Maritime Operations Sortie
P1	Special Operations Background Sortie
P2	Special Operations Trajectory Oriented Sortie
P3	Special Operations Long Range Collection Sortie
S	Special Operations Substantial Results or Peculiarities Sortie
T	Dedicated Aircrew Training Sortie
V	Miscellaneous Sampling Sortie

(2) MAC/23AF Initiated or Funded Sorties. These are sorties generated by MAC/23AF to support other programs not tasked by AFTAC (e.g. VOLANT CROSS, etc.). On these missions use the following designator:

SUFFIX	TYPE
W	For all MAC/23AF funded sorties.

2-4. Mission Tasking. To provide a positive means to track tasking, all AFTAC-initiated sorties will be assigned a tasking identifier. The tasking identifier will consist of the last two digits of the fiscal year and a four digit number assigned sequentially by AFTAC/DOR. Example: 86-0250.

a. Tasking messages - All mission tasking, including SEO trainers, will be via PROREP 1 from AFTAC/DOR. Each PROREP 1 will include a tasking identifier for each sortie tasked. Missions tasked for multiple levels will include a tasking identifier for each level.

b. Tasking expiration - All mission tasking messages, except for P-2 sorties, will contain a tasking expiration time. This time will be based on the criteria listed in paragraph 2-5 below. Tasking will expire if the AOI has not begun by the expiration time.

2-5. Mission Accomplishment Data. To aid in the evaluation of mission effectiveness, field units will provide full details concerning all sorties which do not meet full mission objectives as stated in HQ AFTAC tasking. Reporting will be via PROREP procedures as set forth in Chapter 11. Final determination of mission non-accomplishment rests solely with HQ AFTAC. HQ AFTAC/DOR will maintain records to indicate mission degradation (DMA) or non-accomplishment (MNA). HQ AFTAC will use the following criteria to determine DMA/MNA.

a. P1, P2, P3, S, D, B sorties - When less than the required AOI is covered (as determined by HQ AFTAC) or the sortie is not flown within the time specified below, an MNA will be assigned.

(1) P1, P3, S, and D sorties - When the start of the AOI coverage is not within $\pm$ 12 hours of the time tasked by HQ AFTAC, an MNA will be assigned.

(2) P2 Sorties:

(a) Degraded Mission Accomplishment (DMA) - When the start of the AOI coverage is not within minus 30 minutes/plus one hour of the time originally tasked by HQ AFTAC or an AFTAC field unit, a DMA is charged. A DMA will be charged if the IP time is not within minus 30 minutes/plus one hour based on the original time even if new AOIs and IP times have been planned due to mission delays. Changes caused by SUPA changes will not be charged as DMA.

NOTE: Due to the time critical nature of P-2 sorties, every effort should be made to launch as close to schedule as possible.

(b) Mission Non-accomplishment (MNA) - If the aircraft cannot reach the IP within 12 hours of tasked time, an MNA will be assigned. P-2 tasking will expire 12 hours after the IP time originally specified by the field unit planning the mission. MNA data for P-2s will be based on the original IP time even if a new IP time and track is developed due to a delay.

(3) Background (B) Sorties.

(a) When the start of the AOI coverage is not within -24 hours/+48 hours of the time tasked by HQ AFTAC, an MNA will be assigned. Exception: Southern Hemisphere/Indian Ocean backgrounds: When the start of the AOI is not within $\pm$ 120 hours of the time tasked by HQ AFTAC, an MNA will be assigned.

(b) E Sorties - If the aircraft is not on station for the entire tasked window a DMA will be assigned. If the aircraft doesn't cover any of the tasked window or is not on station for an event during the tasked window an MNA will be assigned.

(c) V Sorties - MNA criteria will be included in the implementing directives.

(d) D Sortie Standbys - If a mission capable aircraft is not available or capable of takeoff at the required time (ref USAF Constant Dome Plan) an MNA will be assigned. A launch order is not required to assign an MNA.

(e) Other - If the aircraft is not available/capable of supporting tasked trainers, etc, an MNA will be assigned for each lost sortie.

2-6. Abbreviations. In addition to the abbreviations authorized by AFM 11-2, the following abbreviations peculiar to AFTAC sampling operations are authorized:

AOI	Area of Interest
ARE	Atmospheric Research Equipment

a. Atmospheric Nuclear Events. Part 1 of the first SUPA for an atmospheric event will be transmitted as soon as possible following alert initiation to facilitate mission planning. Remaining parts will follow as soon as they are completed by WE. Part 1 of subsequent SUPAs will be transmitted twice daily at times specified in close coordination between AFTAC/DOR and WE to best support field planning requirements.

b. Underground Nuclear/Special Events. SUPA messages, when required, will be transmitted either once or twice a day. The initial once per day SUPAs will be sent no later than 0000Z and contain debris trajectories developed from previous data. If a P-2 sortie requirement exists, twice daily SUPA transmissions will begin when a debris trajectory is forecast to move into an accessible sampling area within 72 hours. The initial twice daily SUPAs will be sent no later than 1200Z and 0000Z. When a debris trajectory is forecast to move into an accessible sampling area within 36 hours and a P-2 requirement exists, the SUPAs will be transmitted at times specified in coordination between DOR and WE to support field mission planning requirements. If a P-2 requirement is deleted prior to the trajectory reaching the 36 hour forecast accessibility point, DOR will usually direct SUPA transmissions to stop and establish P-3 requirements. WE will continue to follow the debris trajectories in-house and use various analytical techniques to determine when/where air possibly containing debris may reach an accessible sampling area.

c. Message Processing. DOR will monitor adequacy of SUPA transmissions. Delay and/or nonreceipt of a SUPA should be reported via telecon to this HQ (DOR/WE). WE will coordinate any significant SUPA addition or forecast change with the on-site forecasters and, if necessary, transmit a follow-up message titled:

SUPA_____FOR ALERT_____AMENDED

This message will contain only the added or corrected information applicable to the trajectory level(s) specified within the message.

3-7. SUPA/PRELIM SUPA Message Format.

a. Alert Code. aaPPn LaLaLoLoLo (or LaLaLaLoLoLoLo) Qddtt.

aa = Type of trajectory.

55 = Computed (actual) trajectory.
99 = Forecast trajectory.

PP = Constant pressure or gradient level/nominal flight level

93 = Gradient/025	30 = 300 MB/300	07 = 70 MB/600
85 - 850 MB/050	25 = 250 MB/340	05 = 50 MB/680
70 = 700 MB/100	20 = 200 MB/390	03 = 30 MB/780
50 = 500 MB/180	15 = 150 MB/450	01 = 10 MB/910
40 = 400 MB/240	10 = 100 MB/530	

n = Type of trajectory.

0 = Original trajectory leaving a site.
1, 2, 3, or 4 = Split from original trajectory.
5 = Lowered trajectory from a higher level.
6 = Lifted trajectory from a lower level.
7, 8, or 9 = Trajectory initiated from an IFP.

LaLa(La) = Latitude to nearest degree for all positions except the final "actual" (55) position which is coded to the nearest tenth of a degree.

LoLoLo(Lo) = Longitude to the nearest degree for all positions except the final "actual" (55) position which is coded to the nearest tenth of a degree.

NOTE: The above latitude/longitude convention applies to routine cases. Any analysis position may be coded to the nearest tenth of a degree if deemed necessary to delineate trajectory positions.

Q = Longitudinal Quadrants.

Northern Hemisphere	Southern Hemisphere
7 = 0 thru 180 West	5 = 0 thru 180 West
1 = 0 thru 180 East	3 = 0 thru 180 East

dd = Day of the month.

tt = Hour of the day.

NOTE: Plot SUPAs using a dot (.) for the 0600Z and 1800Z positions, an "X" for the 1200Z position, and a circled "X" annotated with the date (x)18 for the 00Z position. Connect actual (55) trajectory points with a solid line and forecast (99) trajectory points with a broken line.

b. SUPA Msg Example:

55700 3561083 12006 3521100 12012

99700 99XXX

55500 3171166 12006 3041215 12012

99500 31128 12018 31134 12100

32140 12106 32147 12112

c. Remarks:

(1) When no further information will be transmitted for a particular trajectory level, the word "LAST" will be sent at the end of the trajectory to which it applies. A trajectory may be subsequently reinstated, if required.

(2) When a trajectory is not deemed to be of significant operational interest, the forecast position (99) will not be sent. Normally, trajectories which are forecast to become accessible for sampling in excess of 72 hours will not have an associated forecast portion. The indicator 99XXX means that a forecast will not be sent.

Chapter 4

INFLIGHT OPERATING TECHNIQUES

4-1. Purpose. This chapter establishes the basic techniques, procedures, criteria, and inflight reports used by SEOs on sorties flown for Special, Domestic, Maritime, and Miscellaneous Sampling Operations. Standard terms used while performing assigned duties are also defined.

4-2. Definition of Terms:

a. Area-of-Interest (AOI). That portion of the flight track which affords the best probability of debris collection. It consists of time, area, and altitude (planned sampling altitude plus or minus 2000 feet to compensate for Air Traffic Control flight restrictions, weather deviations, etc.).

b. Decay Check. A timed check of an exposed filter paper to distinguish between natural and man-made radioactivity.

c. IFP Sample (Except PONY EXPRESS). Two simultaneous filter papers of 30 minutes duration (atmospheric) or 60 minutes duration (underground), and concurrent pairs of 30 minute spheres. Paper duration will coincide with the time required to pump the appropriate sphere sets. A minimum of one IFP sample should be collected from each IFP contact. Additional IFP samples should be collected from any area that produces an increase in the rate of collection (as indicated by an increase in the rate of rise of the B/400A readings).

d. Short Duration Exposure (SDE). A U-1 filter paper exposed for a period not to exceed one hour. When collected simultaneously with whole-air samples, the SDE will correspond with two sets of sequentially pumped spheres.

e. Long Duration Exposure (LDE). U-1 filter paper exposed for a period not to exceed three hours or three sequential SDEs. LDE coverage should be planned to cover equal segments of the track. Within AOIs plan LDE changes to coincide with SDE changes.

f. Thirty-Minute Spheres. Whole-air samples collected by pumping one or more spheres simultaneously. If spheres rated to 3000psi are used, one compressor will be activated for each sphere being pumped. If spheres rated to 1500psi are used, one compressor will be activated for each pair of spheres being pumped. In order to allow for inherent variations in pump rates and times, and still retain filter paper/whole-air sample correlation, spheres will be pumped a maximum of 30 minutes or until cut-off, whichever occurs first.

4-3. Collection Procedures. Collection procedures are divided into two parts. Enroute to/returning from the AOI and within the AOI.

a. Enroute to/Returning from the AOI. Sampling is required enroute to and returning from the AOI. Exposure patterns are as follows:

(1) Begin FI-2 exposure at 2000 feet (AGL) on initial climb-out and terminate at 2000 feet (AGL) on final descent. FI-2 changes will be made at the discretion of the SEO. If a U-1 foil malfunctions, the SEO should consider using the FI-2 as a supplementary sampling foil using the exposure criteria for the U-1 foil. Turn in all exposed I-2 papers to the laboratory.

(2) Begin a single LDE at level off. LDE coverage should be planned to cover equal segments of the enroute/return track. Terminate LDE upon start of final descent.

b. Exposure within the AOI:

(1) Particulate and whole-air collection requirements are covered in chapters for each specific type of operation.

(2) For altitude deviations from the AOI (climbs or descents exceeding planned altitude by 2000 feet), stop collecting particulate and whole-air samples and:

(a) Use LDE coverage until returning to the AOI if a long delay is anticipated. Upon returning to the AOI, start new particulate and whole-air samples.

(b) Use FI-2 exposure for short delays; e.g., navigator celestial observations. Upon returning to the AOI, continue the samples started prior to the deviation and terminate them when appropriate exposure parameters are met. Annotate forms to document the exposure break.

4-4. Intercept Procedures. Normally the D-500 will provide the first indication of debris. When an increase in the D-500 gross rate is observed, check the directional indicators to determine the relative location of the debris. Vector the aircraft in the indicated direction until contact with the debris has been established, indicated by an abrupt gross rate increase on the B/400A.

NOTE: D-500 directional indications are relative to the aircraft floor; therefore, changes in aircraft attitude must be taken into consideration.

a. A gross rate increase of two or more divisions, with accompanying directional indications, should be considered as significant and investigated.

b. If gross rate indications do not increase with a maximum climb/descent of 5000 feet or a lateral movement of 20 nautical miles on either side of the flight track, return to the original flight track. These restrictions do not apply if the gross rate increases. The limits of deviations from planned tracks can vary with unique situations.

c. Normally, a rapid increase in the amount of radioactivity measured by the B-400A indicates a positive contact with the debris. The following steps outline the procedures to be followed upon contact:

(1) Cross-check B/400A readings and D-500 indications.

(2) Note aircraft position and flight level winds.

(3) Vector the aircraft to the area of highest intensity, using D-500 gross rate and directional indications.

(4) Establish an orbit, allowing the aircraft to drift with the wind.

(5) Collect IFP sample(s) of appropriate duration.

NOTE: Adjust the orbit in response to B400A/D-500 indications; however, attempt to keep the aircraft within the debris cloud while collecting IFP samples.

(6) Transmit an inflight contact report.

(7) Initiate a decay check, as required.

4-5. Reintercept Procedures. If contact with a debris cloud is lost during a suspected contact, the navigator can assist in vectoring the aircraft back to a point where reintercept is planned. Maximum utilization of the D-500 to reintercept the debris cloud may minimize the necessity of using the following search patterns:

a. Initiate an orbit at the point where the navigator expects reintercept, even if detection equipment indications are negative. If positive contact has not been established after one complete orbit, reverse the orbit.

b. If positive contact is not established after reversing the orbit and:

(1) If D-500 is operational, initiate an expanding-box search pattern.

(2) If D-500 is not operational, climb/descend (in orbit at 500 feet per minute) covering a minimum of 2000 feet above and below original contact altitude. If positive contact is not established, return to original contact altitude and initiate an expanding-box search pattern.

c. The expanding-box search pattern is accomplished by flying a series of legs turning 90 degrees in the same direction after each leg. The first two legs should be 2 minutes in length, the third and fourth should be 4 minutes in length, and the fifth leg should be 6 minutes in length. If positive contact is not established, proceed to a point known to be down wind and ahead of the suspected position of the debris cloud and establish a sawtooth search pattern.

d. The sawtooth search pattern consists of a series of legs going back and forth across the wind flow, with each leg angled slightly upwind.

4-6. Cloud Sizing. Cloud sizing is used to determine the physical size of a debris cloud. If directed to size a cloud use the following procedures:

a. Horizontal sizing is accomplished by flying either up or down wind while in contact with the debris cloud. Upon exiting the cloud, as indicated on the B-400A, execute a 90/270 turn and note the time contact is re-established. Continue flying along the wind axis until contact is lost and note this time. The total time in contact with the cloud, in hours, multiplied by the TAS will give you the dimension along with wind axis in nautical miles. To obtain the other horizontal dimension execute another 90/270 turn and reenter the cloud. When you reach the center, determined by flying one half the time it took to fly through the entire cloud, execute a 90 degree turn. Continue on this heading until contact is lost. Execute a 90/270 turn, re-enter the cloud and continue as described above to determine the dimension of the cloud perpendicular to the wind axis.

b. Vertical Sizing. To determine the vertical size of the cloud return to the approximate center of the cloud after performing the horizontal measurements. Establish an orbit in the cloud's center and begin a descent at 500 feet per minute. When contact with the cloud is lost as determined by the B-400A begin a climb at 500 ft per minute. Note the altitude where contact is reestablished and continue until contact is lost and note the altitude. This will determine the vertical dimension of the cloud.

4-7. Decay Check Procedures. The half-life of natural radioactivity (Pb214 most commonly observed) is approximately 30 minutes and a timed check of an exposed filter paper will distinguish between natural and fission products. The decay check is conducted at the SEO's discretion and is accomplished as follows:

a. Record background readings of the decay check tube prior to beginning, and after completion of the decay check.

b. Place the exposed FI-2 paper in the decay check assembly.

c. The initial reading should indicate the maximum meter deflection without pegging the meter, on the highest scale attainable. This may be accomplished by changing B/400A range switch and moving the filter paper in relation to the Geiger Mueller tube.

d. Record the indication on the Rustrak tape and note the time and scale/division on the CEN Form 47.

NOTE: Exercise care to ensure that the same B-400A scale is used for all readings and that the filter paper is not moved after the initial readings have been recorded.

e. To establish a valid decay check, a minimum of three CRM readings (excluding the initial reading) are taken at 20 minute intervals.

f. SEOs should interpret a 50% decrease in observed B/400A readings as indicative of the decay of natural radioactivity. If the indications stay approximately the same, or decrease less than 50%, fresh fission products are probably present.

NOTE: Be sure to consider background readings when determining percent of decay.

4-8. Air Refueling and Fuel Dumping Procedures.

a. Air Refueling. Upon arrival at air refueling altitude and prior to the air refueling control point (ARCP), terminate sampling and power down ARE. The utility light may remain on at the discretion of the SEO. Resume sampling operations upon departing air refueling track.

b. Fuel Dumping. Accomplish Descent Checklist prior to fuel dumping.

4-9. Inflight Reports:

a. During any WC-135/130 or B-52 mission, SEOs will transmit an inflight report (air-to-ground) whenever:

(1) An IFP condition is encountered. Send a separate report for each significant increase or additional contact.

(2) An ARE malfunction occurs which could adversely affect mission accomplishment.

(3) A visual contact is established.

(4) Departing an IFP contact area.

b. During U-2 OLYMPIC RACE missions, pilots will transmit an inflight report (air-to-ground):

(1) Whenever conditions in 4-9a(1), (2), or (3) are encountered.

(2) At the IP and hourly thereafter, detailing sortie status.

c. Transmit these reports in the clear, via phone patch, to the nearest AFTAC field operations unit. Field units will retransmit the Alpha, Charlie, and Delta report(s) to this headquarters via immediate precedence message. Use the inflight report format and include all participating AFTAC operations units as information addressees.

d. Inflight Report Formats:

(1) ALPHA REPORT - (Inflight Contact, Fig 4-1). The Alpha report will be submitted for each contact. Preparation instructions:

ALPHA REPORT/Aircraft Call Sign/Mission Identifier

(a) Position

(b) Time of Contact/Loiter time available.

(c) Altitude (expressed in thousands of feet) to the nearest hundred feet/wind direction/velocity.

(d) B/400A deflection/scale/D-500 deflection/scale (prior to contact)(background level). SEE NOTE

(e) Highest B/400A readings in contact, deflection/scale/time in minutes. SEE NOTE.

(f) Highest D-500 readings in contact, deflection/scale. SEE NOTE.

(g) Intentions/Remarks. Will be provided from the following phonetic identifiers, additional remarks may be included in clear text as appropriate.

Identifier	Remarks
Quebec	Performing decay check
Romeo	Orbit
Sierra	Search local area
Tango	Continue track
Uniform	Return to base
Victor	Orbit for maximum collection
Whiskey	Initiate Reintercept Procedures
Yankee	IFP based on EDO indications
Zulu	Break orbit

NOTE: B/400A and D-500 readings will be reported as a percentage of full scale deflection.

(2) BRAVO REPORT - (Inflight malfunction, Figure 4-2). A Bravo report will be submitted for each significant malfunction. Preparation Instructions:

BRAVO REPORT/Aircraft Call Sign/Mission Identifier

(a) Position.

(b) Malfunction. This entry will be composed of three or more phonetic identifiers. The first item will indicate the equipment on which the malfunction occurred. The second will identify the type of malfunction. The third will identify SEO intentions.

1. Equipment Identification:

Identifier	Remarks
Alpha	One U-1 foil
Bravo	B/400A
Charlie	D-500
Delta	Pressure System
Echo	Both U-1 foils
Foxtrot	Additional detection equipment
Golf	Additional collection equipment
Hotel	Optics Equipment

2. Equipment malfunction:

Identifier	Remarks
Kilo	Inoperative
Lima	Intermittently operative

3. Intentions:

Identifier	Remarks
Papa	Continue on track
Quebec	Abort
Romeo	Continuing collections with reduced capability

(c) Remarks. Additional clear text remarks as appropriate.

(3) CHARLIE REPORT - (Visual sighting, Figure 4-3). A Charlie report will be submitted for each significant observation. Preparation instructions:

CHARLIE REPORT/Aircraft Call Sign/Mission Identifier

(a) Position.

(b) Time of sighting.

(c) Altitude of cloud to the nearest 500 feet (Add Echo suffix if estimated).

(d) Thickness in feet (add Echo suffix if estimated).

(e) Length in nautical miles (add Echo suffix if estimated).

(f) Width in nautical miles (add Echo suffix if estimated).

(g) Color.

(h) Remarks. Clear text remarks as appropriate.

(4) DELTA REPORT - (Inflight summary, Figure 4-4). A Delta report will be submitted upon departure from each contact area. Preparation Instructions:

DELTA REPORT/Aircraft Call Sign/Mission Identifier

(a) Position.

(b) Altitude/wind direction/velocity.

(c) B/400A highest readings. Deflection/Scale/Time in minutes.

(d) Intentions (will be provided from the following phonetic identifiers).

Identifier	Remarks
Echo	Decay Check Results - Negative
Foxtrot	Decay Check Results - Positive
Golf	Minimums complete
Hotel	Return to base
India	Abort
Juliett	Continue on track

(e) Remarks. Clear text remarks as appropriate.

(5) ECHO REPORT - (Inflight Status). This status report is for U-2 sorties only. Pilots will make this report at the IP and at one hour intervals thereafter. The format and preparation instructions are contained in Chapter 15.

ALPHA REPORT/LARK 81/35-RJTY-001P3

A. 4050N 17000E

B. 1830Z / 2 PLUS 30

C. 30.7 / 290 / 45

D. 15 / 2 / 30 / 2

E. 80 / 5 / 10

F. 25 / 4

G. ROMEO TANGO, will size after collection.

Figure 4-1. Sample of ALPHA Report.

BRAVO REPORT/LARK 81/35-RJTY-001P3

A. 3900N 17115E

B. BRAVO KILO ROMEO

C. SPARE ALSO INOP

Figure 4-2. Sample of BRAVO Report

CHARLIE REPORT/LARK 81/35-RJTY-001P3

A. 3930N 16900E

B. 1822Z

C. 45.0 ECHO

D. 500 ECHO

E. 15 ECHO

F. 3 ECHO

G. LIGHT BROWN

H. Appears to be dissapating

Figure 4-3. Sample of CHARLIE Report.

DELTA REPORT/LARK 81/35-RJTY-001P3

A. 3930N 16845E

B. 29.5 / 280 / 30

C. 70 / 7 / 04

D. HOTEL

E. Sizing Complete. Cloud 50 by 20 miles, top 30.5, bottom 27.0

Figure 4-4. Sample of DELTA Report

Chapter 5

SPECIAL OPERATIONS

5-1. Purpose. This chapter specifies sortie profiles and collection criteria used for sorties flown against foreign nuclear atmospheric and underground events.

5-2. Sortie Profiles. SPECIAL OPERATIONS are required to collect samples of particulate and gaseous debris resulting from foreign nuclear events. These operations are normally conducted in three phases.

a. Phase One (P-1) background sorties are initiated whenever there is a requirement to determine the particulate and/or gaseous background levels in the atmosphere. These sorties are flown prior to the debris reaching an accessible sampling area. Flights will normally cover a standard millibar level on a single track extending 500 to 1000 nautical miles on either side of a selected point within the primary sampling area. The midpoint of the track is determined by the forecast path of the suspected debris parcel at the specific altitude of interest. P-1 sorties may be required at one or more millibar levels 24 to 48 hours prior to the arrival of the debris. Mission timing, millibar levels(s), and AOI(s) will be determined by this headquarters.

b. Phase Two (P-2) trajectory oriented sorties will be initiated against the trajectories indicated by SUPA. Sortie requirements at each millibar level will be determined by this headquarters. The flight track and timing will be determined by field units based on SUPA and local weather conditions encountered at the field location. Follow-on P-2 sorties (second, third, etc) should sample a portion of the airmass that was not intercepted on the previous P-2 at a given level.

c. Phase Three (P-3) long range collection sorties may be required under the following conditions:

(1) At the conclusion of P-2 sorties and/or as a result of the analysis of the samples collected on these sorties.

(2) If the SUPA trajectories do not become accessible within a reasonable length of time or enter circular patterns that could result in debris exiting at a number of different points.

(3) After debris trajectories have passed or against general outflow patterns. Flights will normally be conducted along a single track at a standard millibar level 500 to 1000 nautical miles on either side of a selected point upon the predominant outflow or trajectory path. The timing, millibar level(s), and AOI(s) will be determined by this headquarters.

5-3. Collection Procedures:

a. Exposure pattern enroute to/returning from the AOI: Exposure will be as specified in paragraph 4-3a.

b. Exposure pattern within the AOI for foreign underground events. Upon reaching the IP:

(1) Start new U-1 LDE coverage.

(2) Start U-1 SDE coverage.

(3) Start whole-air collection.

(a) P-1, P-2 and P-3. Pump pairs of 30 minute spheres.

(b) Other pumping profiles may be directed.

(4) If IFP contact is established, collect IFP samples. Continue the collection to the maximum extent possible or as briefed.

c. Exposure pattern within the AOI for foreign atmospheric events. Upon reaching the IP:

(1) Start new U-1 LDE coverage.

(2) Start U-1 SDE coverage.

(3) Start whole-air collection:

(a) P-1. Pump pairs of 30 minute spheres throughout the AOI.

(b) P-2. At or before the IP, and at the altitude of interest, collect one pair of 30 minute background spheres. If IFP conditions are not encountered, no additional spheres are required.

(c) P-3. Pump pairs of 30 minute spheres throughout the AOI.

NOTE: When concurrent spheres are required, SDEs of less than 60 minutes may be experienced if sphere automatic cut-off occurs in less than 30 minutes.

(4) If IFP is established, collect one or more IFP samples.

(a) If B/400A indications are less than maximum scale 7 in 10 minutes, collect one sample before searching for a better contact.

(b) If B/400A indications exceed maximum scale 7 in 10 minutes collect two samples, then reestablish original flight track. (Based upon Alpha and Delta Report information, HQ AFTAC may recall aircraft prior to completion of the AOI.).

d. If the sampling aircraft has only one operable U-1 foil, modify the sampling patterns as follows:

(1) For IFN (within the AOI) - atmospheric or underground. Obtain SDEs not to exceed 60 minutes. Concurrent whole-air samples are required IAW paragraph 5-3b or c.

(2) For an IFP sample - atmospheric. Obtain two sequential papers not to exceed 30 minutes, concurrently with two sequential pairs of 30 minute spheres.

(3) For an IFP sample - underground. Obtain one paper not to exceed 60 minutes concurrently with two sequential pairs of 30 minute spheres.

5-4. Inflight Reports. Submit inflight reports as required in Chapter 4.

5-5. Sample Disposition. Sample disposition will be IAW Chapter 14.

Chapter 6

DOMESTIC OPERATIONS

6-1. Purpose. This chapter specifies the collection procedures used for sorties flown against US nuclear activities.

6-2. US Underground Collection Procedures:

a. Exposure patterns enroute to/returning from the AOI are the same as those specified in Paragraph 4-3a.

b. Collection profiles within the AOI upon reaching the IP:

(1) Start new LDE coverage for the AOI.

(2) Start SDE coverage for the AOI.

(3) Start pairs of 30 minute spheres.

(4) If IFP conditions are encountered:

(a) Collect IFP samples using atmospheric duration criteria if B/400A indications exceed maximum scale seven in ten minutes or less. Collect two IFP samples prior to collecting at a different altitude or continuing track.

(b) Collect IFP samples using underground duration criteria if B/400A indications are less than maximum scale seven in ten minutes.

(5) If the sampling aircraft has only one operable U-1 foil, use the exposure pattern(s) specified in paragraph 5-3d.

6-3. Miscellaneous Domestic Programs. Detection and collection procedures for sorties supporting space launches/recoveries and other developmental test programs will be as established in separate implementing directives (frag orders) for each program.

6-4. Inflight Reports. Submit inflight reports IAW Chapter 4.

6-5. Sample Disposition. Sample disposition will be IAW Chapter 14.

Chapter 7

PONY EXPRESS

7-1. Purpose. This chapter specifies the normal detection, collection, and equipment delivery procedures used for PONY EXPRESS Operations.

7-2. Detection Procedures. Debris resulting from these events will not normally produce indications on the B/400A or D-500 detection systems. Therefore, the visible cloud or debris pool will be the only positive location indicator.

7-3. Collection Procedures. Particulate and whole-air samples will be required from the air mass containing debris. Obtain whole-air samples using spheres which have not been pumped since depot cleaning. Obtain water samples from visible debris pools.

a. Collection exposures enroute to and returning from AOI are not required except as noted in paragraph 7-5.

b. A pre-event background sample will be obtained for each mission flown. Background samples are contingent upon sampler time on station prior to projected event time. Time permitting, obtain two pre-event background samples, one at 1000 feet and one at 5000 feet in the AOI. Expose one paper at each altitude for five minutes. The lower altitude has priority. A pair of spheres should be pumped for 30 minutes beginning when the first background paper is exposed. Variations in altitude while pumping the spheres is acceptable. When background and event papers are exposed on the same sortie, separate the background papers from the event papers using an unused filter assembly.

c. Single Visible Cloud. If a cloud is visible, maneuver the aircraft (e.g. Figure eight, orbit, or 90/270) to penetrate the cloud as frequently as possible until the cloud dissipates. Attempt to sample at various altitudes with the first pass just below the visible cloud's bottom, the second at the center, and successive passes at ascending altitudes.

NOTE: The SEO must be advised when the aircraft enters and exits the visible debris cloud; therefore, close coordination is necessary between the pilot or observer and SEO.

(1) Start collecting a pair of spheres 30 seconds prior to cloud entry and pump continuously (using the same spheres) until 30 seconds after the final pass through the cloud.

NOTE: While collecting whole-air samples from single or multiple visible clouds, use as many compressors as possible to obtain maximum pressure. Special laboratory processing will be performed on spheres containing less than 500 psi.

(2) The U-1 foils will have a long and short filter exposure pattern.

(a) Both long and short patterns start approximately ten seconds prior to cloud entry. The short terminates five seconds after exiting. Expose new filters in the same pattern on subsequent passes.

(b) The long U-1 paper exposure terminates five seconds after last exit of a single cloud.

(3) The FI-2 filter exposure will coincide with the long U-1 filter exposure.

(4) Continue the above collections until the debris cloud is no longer visible.

d. Multiple Visible Clouds.

(1) A minimum of one pass will be made at each cloud.

(2) Start collecting a pair of spheres 30 seconds prior to the first cloud penetration and stop 30 seconds after exiting. Purge the pressure system between all collections. Accomplish purging by pumping two designated purge spheres for a minimum of one minute or until a new sample is started, whichever occurs first. Use a new set of spheres on each subsequent pass (e.g., the second, and third pass). After the third pass, terminate whole-air collection efforts against this test.

(3) To reduce the possibility of cross-contamination, use separate U-1 foils for each cloud. Alternating U-1 filter exposure from one U-1 to the other should reduce the possibility of this cross-contamination (e.g., the F-1 foil would be used in cloud "A", followed by the F-2 foil in cloud "B", and continue alternating foils through subsequent passes). Commence exposure ten seconds prior to cloud entry and terminate five seconds after exiting. Use a new filter on each pass.

NOTE: Annotate cloud pass and identify the corresponding filter papers. Plot the number of passes between clouds (e.g., cloud "A" - two passes, cloud "B" - two passes). The pilot or observer must inform the SEO ten seconds before the aircraft enters a cloud, when it exits, and when sampling a new cloud.

(4) FI-2 exposure will correspond with the U-1 start and stop times, using a new filter on each pass.

(5) Continue the above filter collection procedures until the visible debris clouds dissipate.

e. Non-Visible Cloud.

(1) Request the navigator note the impact time, estimated impact point, and surface winds, then vector the aircraft to a point downwind and slightly ahead of the air mass containing the debris.

NOTE: Conduct surface sampling at 300 feet.

(2) Upon reaching the downwind point, establish a heading perpendicular to the wind axis and hold this heading for 30 seconds. Then initiate a 180 degree turn (30 degree bank) in the upwind direction. Establish one minute legs across the wind axis and make all turns in an upwind direction.

(3) Start simultaneous fifteen minute U-1 filter exposures with a concurrent pair of pumped spheres.

(4) FI-2 exposure will coincide with U-1 exposure.

(5) Continue the above sampling pattern until the navigator determines that the aircraft has passed through and is upwind of the air mass which should contain the debris. This sampling pattern should be flown for a minimum of 15 minutes to insure collection of sufficient whole-air samples.

(6) After completion of this pattern, sampling against this specific event will be considered complete.

7-4. Water Sampling.

a. Background Sample. A pre-event background water sample is required from the AOI. A background sample is not required if a sample has been obtained from the AOI within the previous seven day period. Only one sample is required for background. A clean bucket will be used to collect the background water sample. This bucket may be subsequently used to collect an event sample.

b. Debris Pool Sampling.

(1) If impact is observed, or an identifiable debris pool is sighted, mark the location with smoke marker and sea dye marker downwind from the pool.

(2) Obtain at least three water samples from the debris pool. If time and conditions permit, try to obtain additional samples from areas of significant interest (i.e., floating debris, oil, surface discoloration). Use a different bucket for each debris pool sampled.

NOTE: Personnel handling water samples must wear plastic gloves to preclude contaminating themselves or the samples. Use one pair of gloves for each sample. Dispose of gloves IAW Chapter 13.

(3) If the debris pool remains visible, diagram the area(s) sampled.

7-5. Post-Event Sampling. Post-event sampling is not required if pre-event background samples have been collected IAW paragraph 7-3b or 7-4a. If operational constraints precluded obtaining pre-event background samples obtain a background sample in the vicinity of the collection using the procedures specified in paragraph 7-3b or 7-4a. Obtain the water sample using a clean bucket. Air samples should be obtained upwind from the event sample if possible.

7-6. Post-Test Purging Procedures:

a. Purge both U-1 foils to the maximum extent possible prior to landing, and then again at the beginning of the next mission. Collect one 30 minute sample prior to reaching the designated AOI.

b. Use similar purging procedures for the FI-2 foil if used.

c. Purge each compressor used during the collection to the maximum extent possible prior to landing, and then again at the beginning of the next mission. Collect two spheres using the purged compressor(s) the last 30 minutes prior to reaching the designated AOI.

7-7. Sample Downloading Procedures. Download collected samples progressing from filters containing least debris to most debris to minimize cross-contamination (e.g. Background, Post-test Sample, cloud passes in reverse order due to dissipation, etc.). Specific order for downloading will be determined through close coordination between the cockpit observer and the SEO and entered in the AFTO Form 781.

7-8. Documentation Procedures. Record times to the nearest minute on all forms and paperwork. Proper correlation of sample data requires that cloud entry times and water sample times be as accurate as possible. All SEOs and and operations officer should insure that they have an accurate time hack prior to take-off.

a. Turn on the inflight voice recorder approximately fifteen minutes prior to event time. Make periodic time hack's (every ten minutes) and record at least two minutes of WWV prior to and after the event.

b. SEOs/Ops Officers will be responsible for recorder set-up, connection, and recording initiation.

c. The recorder will be used as an aid in determining actual time within the debris cloud. For this purpose, an observer on the flight deck must comment over the interphone when entering and exiting the debris cloud. Recordings will be turned in during post-mission debriefing.

7-9. Sample Disposition. Sample disposition will be IAW Chapter 14.

Chapter 8

MARITIME OPERATIONS

8-1. Purpose. This chapter specifies the detection and collection procedures used for sorties flown against foreign underwater nuclear tests.

8-2. Maritime SUPA. Forecast positions of the nuclear debris pool (FPDP) will be prepared by the US Navy Fleet Numerical Oceanographic Center (FLENUMOCEANCEN) and transmitted to field operating locations once each 24 hours. This FPDP message gives position forecasts for 12 hour movements normally covering a three day time span. Coordinates within the message text will be expressed in whole degrees and tenths of whole degrees. Decimal points will not be utilized within the text. Maritime SUPA messages will be consecutively numbered for each alert and will utilize the following format:

FPDP Msg No. 01, Alert 680, follows in clear text:

Time	Position
2612Z	165N 1094E
(Day) (Time)	(Lat)(Long)

NOTE: In the event US Navy surface forces are required, this headquarters will determine the requirements and conduct all coordination necessary to ensure the accomplishment of these maritime operations.

8-3. Detection Procedures. The D-500 receiver will be the primary detection system for locating radioactive pools. Flight tracks will be planned to search the area forecasted to contain the debris pool.

a. The desired flight altitude in the area of interest will be approximately 500 feet.

NOTE: Operations will be conducted only during daylight and under VFR conditions.

b. When positive indications are noted on the D-500, the SEO will request the immediate release of a smoke marker.

c. After the smoke marker has been released, an expanding box search pattern will be flown to locate the point of greatest radioactive intensity within the debris pool. The expanding box will consist of two 2-minute and two 4-minute legs. Mark with a smoke flare each area detected by the D-500 which has a greater intensity than previous detections. Collect samples from the area of greatest radioactive intensity.

d. If no areas of greater radioactivity are noted, return to the original contact point and collect samples.

8-4. Collection Procedures. The seawater sampling system consists of a rapid-fill container with a free-fall line. Samples will be obtained by HC-130 aircrews in accordance with procedures and techniques established by MAC.

a. Collect a minimum of five samples, covering equal segments of the sampling track within the area of forecasted debris pool.

b. Upon positive contact with the debris pool, collect five additional samples from the area of contact.

8-5. Sample Disposition. Sample disposition will be IAW Chapter 14.

Chapter 9

MISCELLANEOUS SAMPLING/COLLECTION OPERATIONS

9-1. Purpose. This chapter specifies requirements, sortie profiles, and collection criteria for background, special event, training, special project, and other miscellaneous missions.

9-2. Background Missions. Sampling missions are required on a periodic basis to monitor the ambient background levels exiting the Eurasian landmass. Background missions are not required when a P-1, P-2 (underground), P-3, or special background sortie has been flown in the same geographical area, altitude, and timeframe as the background requirement. Specific requirements are as follows:

a. Far East Background Requirements. The Far East background requirements will be tasked by HQ AFTAC. IP times will be provided via PROREP 01. Background missions will be required in this area as follows:

(1) Particulate and whole-air samples will be collected between 2,500 and 10,000 feet (10,000 desired) approximately once each seven days from airflow exiting the Eurasian landmass to the east. This mission will be referred to as the "Weekly Background."

(2) Particulate and whole-air samples will be collected between 25,000 and 35,000 feet (29,000 desired) once each thirty days from outflow exiting the Eurasian landmass to the east. This mission will commonly be referred to as the "Monthly Background."

(3) Detachment 407, in conjunction with their local weather support unit, will determine areas to be sampled. Flight tracks will cover a minimum of 500 miles on both sides of a central outflow point.

b. Polar Background Requirements. Aircraft will normally deploy from CONUS bases to accomplish this requirement. Every two weeks particulate and whole-air samples are required between 2,500 and 10,000 feet from airflow exiting the Eurasian landmass to the north. Timing, altitude(s), and AOI(s) will be tasked by HQ/AFTAC.

c. High Altitude Background Requirement. Requirements exist for particulate and whole-air samples to be collected quarterly between 40,000 feet and the maximum attainable altitude with the U-2 aircraft. Scheduling, specific altitudes, and AOI will be determined by HQ AFTAC.

d. Special Background Requirements. Requirements exist for periodic background particulate and whole-air samples between 2,500 and 40,000 feet not covered by weekly, monthly, or polar background sorties. Frequency of mission requirements, altitudes, and AOIs will be determined by HQ/AFTAC.

e. Particulate and whole-air collection criteria for the Far East, Polar, Special, and CONSTANT GLOBE background sorties are as follows:

(1) Enroute to the AOI. Sample collection enroute to and returning from the AOI will be as specified in paragraph 4-3a.

(2) Within the AOI.

(a) Far East/Polar/Special Background Sorties:

1. SDE and LDE filter papers.

2. Pump pairs of 30-minute spheres.

(b) CONSTANT GLOBE Background:

1. SDE and LDE filter papers.

2. Pump single 30-minute spheres. (Use 3000 psi spheres).

(c) Sample collection criteria for the high altitude background sortie will be as briefed by the on-site AFTAC representative.

9-3. Special Events. Periodic sampling is required in response to Special Events not otherwise covered in this regulation. Notification and tasking will be provided on an as required basis by this headquarters. Collection criteria will be the same as specified for foreign underground events.

9-4. Additional Sampling. Sampling may be required due to substantial lab results or peculiarities not associated with a specific event (S mission). Collection criteria will be the same as specified for foreign underground events.

9-5. Training. "T" sorties are flown in support of aircrew initial/currency/proficiency training and/or the Standardization/Evaluation Program. Specific sampling criteria will be as directed by the Flight Examiner/Instructor, or local procedures. Samples collected will not be processed unless an actual IFP condition is encountered.

9-6. Other Sampling Sorties. "A, V, and W" sorties are flown for missions not covered above. These missions provide the relocation of resources, MAC aircrew training, weather support, specific projects, and equipment development and evaluation.

a. Sampling criteria for "A & W" sorties:

(1) FI-2 exposures will begin at 2000 ft AGL and end at 2000 ft on final descent.

(2) U-1 exposure will be accomplished using LDE criteria from level off until start of final descent.

(3) Flight Examiners/Instructors may modify the above exposure when Stan/Eval flight checks or SEO training is conducted.

(4) "A" and "W" sorties may have a second training purpose. Indicate this in the mission identifier by adding (T). Example: 35-KMCC-PNHL-055A(T). Sequential U-1 coverage of the flight must be forwarded to the laboratory.

b. Sampling criteria for "V" sorties: Sampling criteria will be developed locally or as established in implementing directives (e.g., frag orders). Frag order will include collection guidance, sample and equipment handling instructions, radiation safety information, logistic requirements, etc.

9-7. IFP Sampling. If IFP indications are encountered during any of the above sampling operations, collect IFP samples using the following duration criteria:

a. If B/400A indications exceed maximum scale 7 in 10 minutes use atmospheric procedures.

b. If B/400A indications are less than maximum scale 7 in 10 minutes, use underground procedures.

9-8. Inflight Reports. Submit inflight reports as required.

9-9. Sample Disposition. Sample disposition will be IAW Chapter 14.

Chapter 10

FORMS AND DATA RECORDS

10-1. Purpose. This chapter provides instructions for the preparation, use, and disposition of forms and data records required to support aerial sampling operations.

10-2. Computer Data Base.

a. HQ/DOR will maintain a data base to document the airborne sampling mission. Mission data will be recorded for all WC-135, WC-130, HC-130, P-3 and B-52 flights on which an AFTAC crewmember was performing official duties.

b. The data base will include:

(1) Mission number.

(2) Takeoff and landing times.

(3) Total time.

(4) Alert/SE.

(5) Results. IFN/IFP.

(6) SEO(s) - on board.

c. Reports. Maintain capability to generate reports:

(1) Sorted by:

(a) Type aircraft.

(b) Type sortie.

(c) Launch base.

(d) Dates.

(e) Alert number.

(f) SEO number.

(2) Totaled by flying time for:

(a) Type aircraft.

(b) Type sortie.

(c) Alert Number.

(d) SEO number.

10-3. Supply of Forms. Obtain Center Forms which are prescribed in this regulation through HQ AFTAC/DAP as required with one exception. Obtain CEN Form 25 through normal supply channels from Tech Ops Div (FB4300).

10-4. CEN Form 7 - Currency Record.

a. Purpose. To document currency performance by individual operators.

b. Requirement. Form will be maintained at each location where individual is assigned.

c. Preparation Instructions (Figure 10-1). Enter date each task is performed. Add ID number to name block. Use fiscal year.

10-5. CEN Form 8 - Flight Crew Information File.

a. Purpose. To ensure a standardized system and to provide the SEO with pertinent information prior to a mission.

b. Requirement. Stan/Eval personnel are responsible for completing the form.

c. Preparation Instructions (Figure 10-2):

SEQUENCE	DATA
1	Stan/Eval unit or Unit NCOIC
2	Aircrew members
3	Self explanatory
4	Self explanatory
5	Information to be disseminated
6	As appropriate; ie, HQ msg, T.O. XXX, etc.
7	Date and time item becomes effective
8	Determined by field units

10-6. CEN Form 9 - Air Medal Mission Credit Log.

a. Purpose. To provide a log for individual flights creditable toward the Sustained Activity Air Medal (SAAM).

b. Requirement. Form maintained at location where individual is assigned. Each individual is responsible for completion and certification by supervisor.

c. Preparation Instructions (Figure 10-3):

SEQUENCE	DATE
1-6	Self-explanatory
7	Annotate 70N, PONY EXPRESS, or Special Operations and Alert, Special Event Number as applicable

10-7. CEN Form 13 - Sphere Identification:

a. Purpose: To identify individual spheres from a specific sampling sortie.

b. Submission requirement: SEOs are responsible to identify all pumped spheres with a completed CEN Form 13 during or immediately subsequent to collection. Attach one half of each completed tag to the sphere and the second half of the tag to the sphere container.

NOTE: On-site AFTAC personnel will complete this requirement for all U-2 sampling sorties.

c. Preparation Instructions (Figure 10-4):

SEQUENCE	DATA
1	Mission Identifier plus ID number from Sortie Data Sheet

NOTE: The ID number consists of the sample number suffixed with "A", "B" (or "C" if applicable) (corresponding to the appropriate sphere serial number) taken from Sortie Data Sheet.

2	Altitude from Sortie Data Sheet
3	Enter sphere serial number stamped on sphere neck

10-8. CEN Form 14 - P. E. Sortie Data Sheet.

a. Purpose. To provide a sortie record of particulate and whole-air collection data, ARE malfunctions, and remarks. It is used as a worksheet while completing associated CEN forms during PONY EXPRESS operations.

b. Submission requirements. SEOs will complete two copies of the Cen Form 14 for each specific event. Forward one copy with the associated whole-air samples to the appropriate laboratory facility. File the second copy with FOL Data Records.

c. Preparation Instructions (Figure 10-5):

SEQUENCE	DATA
1	Mission Identifier
2	Closure area mission is covering/AFTAC test designator/geographic coordinates of event impact or detonation.
3	Landing DTG (Zulu)
4	Aircraft Serial Number (Last three digits)
5	Spheres/altitude
6	SEOs grade, surname, and number
7	Takeoff DTG (Zulu)
8	Total flight time expressed in hours and tenths of hours
9	Additional equipment (GSM-5, cameras, etc.)
10	Altitude of collection (to the nearest 100 feet)
11	Predominate true air speed
12	Outside free air temperature during collection
13	Pressure platform line number
14	Start and stop times for whole-air collections to the nearest minute
15	Total panel PSI collected for each sample (to the closest 50 PSI.)
16	Sphere serial numbers
17	Foil - Sequential filter number for each individual foil
18	Start and end times for filter exposure to the minute. Hours are derived from sequence (14)
19	Leave Blank
20	Sequential entry from a single number set

d. Preparation Instructions (Figure 10-6):

SEQUENCE	DATA
21	Corresponding number from sequence (20), Figure 10-5, and elaborating remarks
22	ARE malfunctions entered in AFTO Form 781 and problems/malfunctions of additional equipment listed in sequence (9) Figure 10-5

10-9. CEN Form 15 - Mission Data Sheet:

a. Purpose. To provide operating locations with a record of mission data for reporting and reference purposes.

b. Requirements. SEOs/AFTAC on-site representatives are responsible for recording all mission identifiers utilized and associated data for reporting purposes.

c. Submission Requirement. The CEN Form 15 will be forwarded to this headquarters at the end of each fiscal year.

d. Preparation Instructions (Figure 10-7):

SEQUENCE	DATA
1	Mission Identifier
2	Month (Numerical)
3	Takeoff DTG (Zulu)
4	Landing DTG (Zulu)
5	Total Flying Time (hours and tenths)
6	Alert/SUPA No./Level (i.e. 643/03/700MB)
7	Aircraft Tail Number (last three digits)
8	Remarks (include tasking n 10-10.

10-10. CEN Form 19 - Mission Data.

a. Purpose. To ensure a standardized system of control for filing CEN Form 14 or 47 (as required) and Rustrak Recorder Charts for the B/400A and D-500.

b. Submission Requirements. SEOs will deliver the CEN Form 19 with corresponding Rustrak tapes, and CEN forms to the local AFTAC air operations representatives upon landing.

c. Preparation Instructions (Figure 10-8):

SEQUENCE	DATA
1	Mission Identifier
2	Aircraft serial number (last three digits)
3	Takeoff DTG (Zulu)
4	Landing DTG (Zulu)
5	Aircraft Serial Number (Last three digits)
6	SEOs grade, surname, and ID number
7	ID number of SEO performing task
8	List additional equipment and ID number of SEO operating the equipment, i.e., STAR CAST
9	Remarks for local use (e.g., total spheres/level, alert number, malfunction, etc.)

10-11. CEN Form 25 - Aerial Data Sheet.

a. Purpose. To record pertinent data for exposed filter papers.

b. Submission requirement. SEOs are responsible for completing this form for each I-2 and U-1 filter paper exposed. Each U-1 filter paper loaded will have the filter position and mission identifier entered on the appropriate CEN Form 25. SAC and MAC maintenance personnel are responsible for uploading/downloading and delivering all operational U-1 filter papers to the local on-site AFTAC representative or facility.

c. Preparation Instructions (Figure 10-9):

SEQUENCE	DATA
1	Sequential number (for flight)

NOTE: The sequential paper number will be written in the appropriate line to identify which U-1 or FI-2 foil/paper is being exposed (WC-135/130). Foils in the F-52 pod are numbered F-1 through F-5, left to right, followed by sequential filter number (automatic foils only). F-4 foil (U-2) papers will consist of sequential number only.

2	Mission Identifier
3	Foil Type/Serial Number (S/N required on the first filter envelope for each foil)
4	Predominant true air speed
5	Predominant free air temperature (required on PONY FXPRESS only)
6	Rank and surname of operator
7	(1) Aircraft Tail Number (only required on first LDE filter) (2) MB level (AOI only) (3) Information/comments regarding operational problems affecting filter paper exposures (4) Sequential number of LDE/SDE
8	Zulu date, hour, minute, month, and last two digits of year exposure started
9	Latitude and longitude degrees and minutes exposure started (cross out non-appropriate cardinal point)
10	Altitude to the nearest 500 feet exposure started (expressed in thousands of feet)
11	Predominant altitude, to the nearest 500 feet, of paper exposure. (expressed in thousands of feet)
12	Zulu date, hour, and minute exposure terminated
13	Number of minutes of exposure (three digit group)
14	Latitude and longitude degrees and minutes exposure terminated (cross out non-appropriate cardinal point)
15	Altitude to the nearest 500 feet exposure started (expressed in thousands of feet)

10-12. CEN Form 32 - Pre/Post Mission Swipe.

a. Purpose. To provide pertinent data for individual swipe tests accomplished to monitor the residual contamination on aircraft and sampling equipment.

b. Submission requirement. Complete one swipe envelope for each swipe accomplished. Perform swiping as outlined in Chapter 13 of this regulation.

c. Preparation Instructions (Figure 10-10):

SEQUENCE	DATA
1	Mark out non-applicable title
2	Mission Identifier (if applicable)
3	Location of Swipe

4	Foil/POD Serial Number
5	Zulu DTG when swipe taken
6	Aircraft Tail Number (last three digits)
7	As required

10-13. CEN Form 38 - FCIF Certification Record.

a. Purpose. To ensure all flying personnel are aware of the latest information posted in the FCIF prior to participating in flight operations.

b. Requirements. A CEN Form 38 will be maintained in each standardization/evaluation unit for all assigned and TDY flying personnel.

c. Preparation Instructions (Figure 10-11):

SEQUENCE	DATA
1	Current FCIF Item Number
2	Date FCIF Volume I reviewed
3	Individual's Initials
4	Current FCB
5	Date FCB was reviewed
6	Individual's Initials
7	Month/year review was accomplished
8	Individual's Initials
9	Individual's last name, first name, middle initial, and grade

10-14. CEN Form 40 - Olympic Race Sortie Data Sheet.

a. Purpose. To provide a record of Olympic Race sortie particulate and whole-air collection data, and ARE malfunctions; used with Rustrak charts to analyze results.

b. Submission Requirements:

(1) On-site AFTAC representative will prepare two copies.

(2) Forward one copy with the associated whole-air samples to the appropriate laboratory facility.

(3) File the second copy in a CEN Form 19 (with corresponding Rustrak tapes) at the AFTAC unit responsible for sortie.

c. Preparation Instructions. See example (Figure 10-12 and 10-13) and follow general preparation instructions for CEN Form 47.

10-15. CEN Form 47 - Sortie Data Sheet.

a. Purpose. To provide a record of sortie particulate and whole-air collection data, and ARE malfunctions; used with the Rustrak charts to analyze mission results.

b. Submission Requirements:

(1) SEOs will prepare two copies.

(2) Forward one copy with the associated samples to the appropriate laboratory facility.

(3) File the second copy in a CEN Form 19 (with corresponding Rustrak tape) at the AFTAC unit responsible for sortie.

c. Preparation Instructions (Figure 10-14):

SEQUENCE	DATA
1	Sortie Identifier
2	Alert Designator
3	Sequential Number of Flight (against the alert)
4	SUPA Number Planned Against
5	Total Flight Time (Hours & Tenths) (From AF Form 369)
6	Organization and Rank/Surname of Planner
7	Support Unit Track Passed to
8	Zulu Time Passed to Support Unit
9	Planned Takeoff/Time
10	Takeoff DTG (Zulu) (From AF Form 369)
11	Landing DTG (Zulu) (From AF Form 369)
12	SEOs Grade, Surname and Number
13	Aircraft Call Sign
14	Aircraft Tail Number (Last Three Digits)
15	Planned AOI
16	Planned Sampling Level(s)
17	Indicate Actual Track Flown if Different from Planned Track
18	Remarks (Include tasking identifier)
19	B/400A and D-500 Rustrak chart numbers to identify remarks other than filter paper or sphere changes
20	Brief comments explaining Rustrak chart number

NOTE: The numbers in columns 19 and 24 (Figure 10-15) will be sequential entries from a single number set. If an entry in either column corresponds to, or elaborates on an entry in another column, the same number will be used in both columns.

21	Brief comments to explain equipment malfunctions entered in AFTO Form 781.

d. Preparation Instructions (Figure 10-15):

SEQUENCE	DATA
22	Sortie Identifier
23	Initialed by Stan/Eval or supervisory personnel after review/quality control check
24	Rustrak chart numbers used to indicate filter paper and/or sphere changes (entire line pertains to this Rustrak chart number).
25	Time (Zulu) collection started/ended (filter paper insertion/ extraction, sphere start/stop)
26	Altitude (in thousands of feet) when collection started/ended (to the nearest 500 feet)
27	Predominant true air speed (knots) for the collection period

28	Spot wind (direction/velocity) at time of entry. Not required for F1-2 entries at 2000 ft AGL

NOTE: Winds will normally be recorded as "True Winds". Sorties flown in the polar areas may record winds in "Grid". Grid entries will be recorded in the following manner: G 190/15. All "Grid" winds will be converted to "True" prior to transmitting inflight reports.

29	Latitude and longitude (degrees and minutes) collection started/ended

NOTE: Cross out non-appropriate cardinal points. The first entry in longitude or latitude after crossing "0" or "180" meridian, or the equator will reflect a new longitude or latitude suffix.

30, 31, 32	Indicate sequential filter number for filter insertion. Indicate "out" for filter extraction not immediately followed with a filter insertion.

*NOTE: For B-52 sorties, line thru the column headings (item 30, 31 and 32 Fig 10-15), and document filter exposures by using the foil number and paper number (F-3-1, F-5-7, etc). Use the first column for F-1 and F-2, the second column for F-3 and F-4, and the last column for F-5.

33	Indicate the sequence order of collection of sphere sets
34, 35	Serial number(s) of sphere(s) pumped

NOTE: If required, document third sphere serial number in the "Remarks" column (37).

36	Laboratory use only
37	Enter any appropriate remarks relating to paper/sphere change (IP, end AOI, turn point, etc). Enter either 1500 or 3000 psi spheres, as appropriate, for first pumping entry.

10-16. CEN Form 72 - (S) PONY EXPRESS Observation Checklist (U).

a. Purpose. To provide a record of individual observations made during an actual PONY EXPRESS event. To be used as a reference in mission studies.

b. Submission Requirement. Crew members will completge this form in flight and deliver it to the local AFTAC Air Operations Representative.

c. Preparation Instructions. Details applicable to form completion will be discussed at a crew briefing prior to launch.

10-17. CEN Form 80 - Airborne Radiation Monitor (ARM) Data Log.

a. Purpose. To document radiation readings on sampling aircraft IAW Chapter 12.

b. Submission Requirement. Forward one copy of form with alert summary.

c. Preparation Instructions (Figure 10-16):

SEQUENCE	DATA
1	Sortie Identifier
2	Type survey meter used
3	Total time in contact (in minutes)
4	Aircraft tail number (last three digits)
5	Obtain first reading prior to IP at operational altitude to record background levels. Readings taken at 15 minute intervals after contact are recorded in mR/hr and will continue until 30 minutes after departing contact (as defined in the ARM checklist)

NOTE: Attach one copy of the flight authorization for all crewmembers on the mission.

10-18. Rustrack Recorder Chart (B/400A and D-500).

a. Purpose. To provide a visual record of B/400A and D-500 indications throughout the sortie and to be used in conjunction with mission studies.

b. Submission Requirement. The SEOs will deliver the Rustrack chart(s) to the local AFTAC Air Operations Representative.

c. Preparation Instructions. The following minimum information is required:

(1) Mission identifier (chart heading).

(2) Draw line with applicable remark number to identify:

(a) Foil being monitored

(b) All filter paper changes

(c) All sphere changes

(d) Scale changes

(e) Climbs and descents, level-off

(f) Any entry necessary to explain sudden changes in indications (changing monitor, IFP, malfunctions, etc.)

(g) Orbits, sounding, sizing, etc.

10-19. CEN Form 30 - Sonobuoy/Water Sample Identification Data Sheet.

a. Purpose. To provide a record of water sample data.

b. Submission Requirements. An AFTAC crewmember will prepare two copies. Forward one copy with associated water samples to the laboratory. Retain one copy with other mission paperwork.

c. Preparation Instructions (Figure 10-17):

SEQUENCE	DATA
1	Sortie identifier
2	ZULU takeoff DTG from AFTO 369
3	ZULU landing DTG from AFTO 369
4	Total flight time in hours
5	AFTAC event number
6	Rank, surname, and number of SEO(s)/Ops Officer(s).
7	Not used
8 & 9	Enter appropriate data for device deployed.
10	Enter appropriate data

10-20. Forms Disposition. Forms described in this chapter will be maintained IAW table in Attachment 1.

FY 86 CURRENCY RECORD

TYPE CURRENCY	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr
PREFLIGHT	18 Oct 85	7 Jan 86								
TAKEOFF	18 Oct 85	7 Jan 86								
AOI	18 Oct 85	4 Feb 86								
LANDING	26 Nov 85	4 Feb 86								
POST FLIGHT	26 Nov 85	4 Feb 86								
OTHER EQUIPMENT										

NAME	RANK
JONES, THOMAS T. 99	SSgt

CEN FORM JAN 84 7

Figure 10-1. Sample of Currency Record

FLIGHT CREW INFORMATION FILE		
FROM: (1)	TO: (2)	DATE (3)
SUBJECT (4)		
(5)		
AUTHORITY (6)	POSTING DATE/TIME (7)	WITHDRAWAL DATE (8)

CEN FORM JUL 81 8

Figure 10-2. Sample of Flight Crew Information File Sheet.

AIR MEDAL MISSION CREDIT LOG

PRIVACY ACT STATEMENT

AUTHORITY: 10 U.S.C. 8012; F90061
PRINCIPLE PURPOSE: Used for recording and certification of Sustained Activity Air Medal (SAAM) eligible flights.
ROUTINE USES: Certification of aerial accomplishments toward award of SAAM.
DISCLOSURE IS VOLUNTARY: However, failure to furnish information requested may result in denial of award recommendation.

NAME	RANK	SSAN
(1) DARWIN P. NELSON	(2) SGT	(3) 666-54-0123

(4) DATE	(5) MISSION IDENTIFIER	(6) SUPERVISOR CERTIFICATION	(7) REMARKS
12 DEC 85	35-RJTY-033 P1	[signature]	SE 86-02
5 JAN 86	35-KMCC-P-EI-029B	[signature]	70 N

CEN FORM FEB 83 9

Figure 10-3. Sample of Air Medal Mission Credit Log.

SPHERE IDENTIFICATION

IDENTIFIER (1) 35-APPH-FJDG-001B/3A IDENTIFIER 35-APPH-FJDG-001B/3A

ALTITUDE (2) 10.0 ALTITUDE 10.0

SPHERE (3) N6230 SPHERE N6230

PREVIOUS EDITION IS OBSOLETE

CEN FORM OCT 81 13 CEN 13 PT I

☆ GPO 548-396-1982

CEN 13 PT II

Figure 10-4. Sample of Sphere Identification Tag.

MISSION IDENTIFIER	P. E. SORTIE DATA SHEET	LDG DTG (3)	ACFT NO. (4)
(1) 30-PMDY-012E		19/0616Z JUN 85	554
(5) SPHERE/ALTITUDE	CLOSURE AREA/EVENT NO./EVENT COORDINATES (2) SOUTHERN/85-2/27-55N 176-05E	TO DTG (7)	TOTAL TIME(8)
2/01.0 2/05.0 2/0.3-0.5	SPECIAL EQUIPMENT OPERATOR(S) (6) SSGT PIKE (90) AIC Peek (94)	18/1905Z JUN 85	11.2
	ADDITIONAL EQUIPMENT (9) 35MM CAMERA		

SAMPLE	(10) ALT (M)	(11) TAS (K)	(12) TEMP (C)	SPHERE DATA: (13) SPHERE NO.		TIME (14) START HR	START MIN	START SEC	END MIN	END SEC	(15) Panel PSI X100	(16) SERIAL NO.(S)		PAPER DATA: (17) FOIL 1-2	FOIL F-1	FOIL F-2	(18) TIME START MIN	START SEC	END MIN	END SEC	TIME (19) IN CLOUD (SEC)	(20) REMARKS NO.
BKGD NO. 1	01.0	180	+21	1	2	23	35	-	05	-	15.0	E2915	N0910	1	1	-	35	-	40	-		
NO. 2	05.0	230	+7	3	4	00	20	-	50	-	14.5	0014	E2915	2	-	1	20	-	25	-		
PASS NO. 1	0.3	160	+23	5	6	02	08	-	-	-	-	N0710	E2350	3	2	2	08	-	08	-		1
NO. 2	0.4	160	+23			-	-	-	-	-	-	↓	↓	↓	3	↓	-	-	-	-		
NO. 3	0.5	160	+23			-	-	-	-	-	-	↓	↓	↓	4	↓	-	-	-	-		2
NO. 4	0.5	160	+23			-	-	-	18	-	11.0	↓	↓	↓	-	↓	-	-	18	-		3
NO. 5																						
NO. 6																						
NO. 7																						
NO. 8																						
NO. 9																						
NO. 10																						
NO. 11																						
BKGD NO. 3																						

CEN FORM MAR 82 14

Figure 10-5. Sample of P.E. Sortie Data Sheet.

NO.	(21) REMARKS
1	Used 2 compressors for whole air samples, single cloud
2.	Cloud dissipating rapidly
3.	last pass, F-1 foil jammed during cycling between No. 4 and No. 5.

(22) MALFUNCTIONS

35mm film failed to advance during reentry sequence.

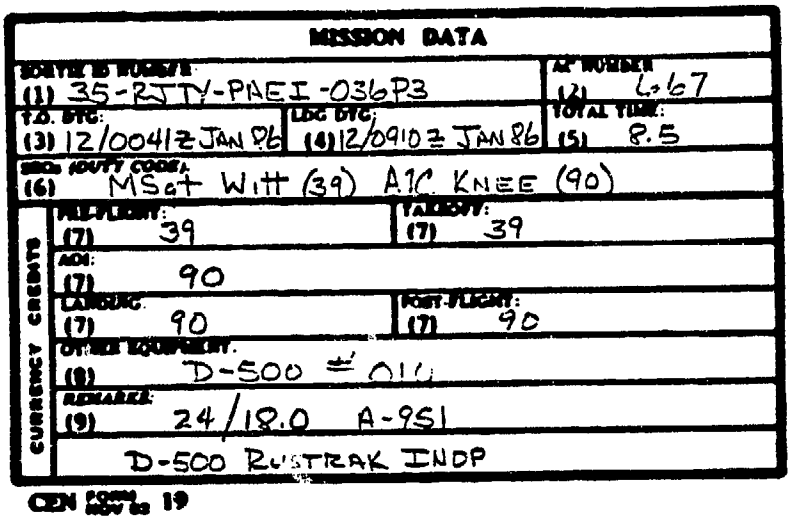
Right U-1 foil sheared geneva pin advancing from screen No. 4 and No. 5.

Figure 10-6. Sample of Reverse Side of P.E. Sortie Data Sheet.

MISSION DATA SHEET							
MISSION IDENTIFIER	MO	T/O DT (Z)	LDG DT (Z)	TOT	ALERT/MET/LEVEL	ACFT NO.	REMARKS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
35-RJTY-PAEI-036R3	01	120041	120910	8.5	A-951/NA/500MB	6667	86-0059 39,90

CEN FORM 15 JUL 81

Figure 10-7. Sample of Mission Data Sheet.



MISSION DATA

(1) 35-RJTY-PAEI-036P3

(2) 467

(3) T.O. DTG: 12/0041Z JAN 86

(4) LDG DTG: 12/0910Z JAN 86

(5) TOTAL TIME: 8.5

(6) MSGT WITT (39) A1C KNEE (90)

CURRENCY CREDITS

(7) PIC/FCIBMT: 39

(7) TAKEOFF: 39

(7) AOI: 90

(7) LANDING: 90

(7) POST-FLIGHT: 90

(8) OTHER EQUIPMENT: D-500 ≠ 011

(9) REMARKS: 24/18.0 A-951

D-500 RUSTRAK INDP

CEN FORM NOV 86 19

Figure 10-8. Sample of Mission Data Envelope.

AERIAL DATA SHEET

L.....
R. (1) 01

MISSION 35-RJTY-PACI-036P3(2)

FOIL TYPE U-1/509 (3)

TRUE AIR SPEED 380 (4) KNOTS

FREE AIR TEMP. — (5) °C

OPERATOR A1C KNUEE (6)

REMARKS ACFT 667 (7)

LDE #1 - OPS OUT

PAPER NUMBER

TROPOPAUSE DATA

/0000Z OBSERVATION

DATE

LOCATION	ALTITUDE
(1)	FT
(2)	FT
(3)	FT

/1200Z OBSERVATION

DATE

(1)	FT
(2)	FT
(3)	FT

(FOR FLIGHTS ABOVE 20,000 FT.)

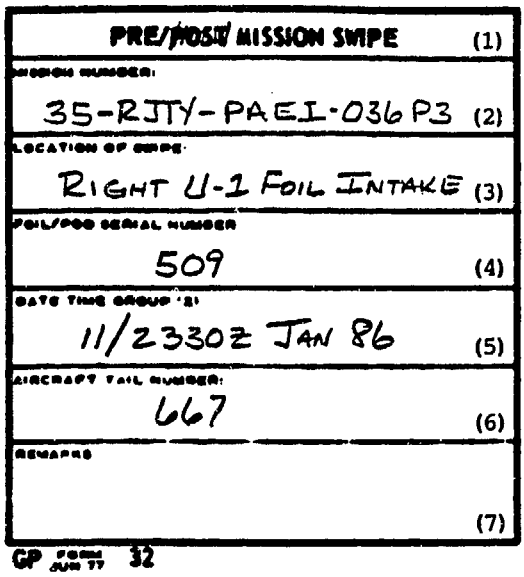
(8) START					(9)		(10)	(11)
12	01	10	JAN	86	36°25' N	144°03' E	33.0	33.0
Day	Hour	Min.	Month	Year	Latitude	Longitude	Alt.	Predominant Altitude

(12) STOP		(13)	(14)		(15)	"A" INFORMATION		
12	03	05	115	43°24' N	156°30' E	18.0			
Day	Hour	Min.	Duration	Latitude	Longitude	Alt.	1st 3 Digits	10s	Radio

PAG Form 25
Feb. '62
Revised

ROYAL BLUE 4/62 59.2M

Figure 10-9. Sample of Aerial Data Sheet.


PRE/POST MISSION SWIPE (1)

35-RJTY-PAEI-036 P3 (2)

RIGHT U-1 FOIL INTAKE (3)

509 (4)

11/2330Z JAN 86 (5)

667 (6)

(7)

GP FORM JUN 77 32

Figure 10-10. Sample of Pre/Post Mission Swipe Envelope.

FCIF CERTIFICATION RECORD

LAST NUMBER	DATE	INIT	LAST NUMBER	DATE	INIT	LAST NUMBER	DATE	INIT	FCB	DATE	INIT
(1)	(2)	(3)							(4)	(5)	(6)
86-3	9 FEB 86	[illegible]							1JAN	2 FEB 87	[illegible]
									SEMI - ANNUAL REVIEW MON	INITIAL	MON INITIAL
									(7)	(8)	
									[illegible]	[illegible]	

NAME AND GRADE (9)

CEN FORM AUG 81 38

Figure 10-11. Sample of FCIF Certification Record.

OLYMPIC RACE SORTIE DATA SHEET

SORTIE IDENTIFIER	T/O DTG	LDG DTG	TOTAL TIME	ACFT
02-PYSO-001B	06/2330Z DEC 85	07/0717Z DEC 85	7.8	332

OPERATOR	ALERT/LEVEL/SUPA/SPECIAL NUMBER	TRACK
MAJOR FAIRLESS		FLOWN AS PLANNED

FILTER	START TIME	N/S COORDINATES	E/W COORDINATES	STOP TIME	N/S COORDINATES	E/W COORDINATES	ALT B±	IAS	TAS	TEMP(C)	WIND D/V
01	2400	35-54	130-16	0100	38-19	138-08	-20.0	150	385	-56	276/88
02	0100	38-19	138-08	0146	39-04	144-22	-20.0	154	396	-54	263/80
03	0150	39-21	144-26	0250	36-00	137-24	-10.0	133	431	-58	244/84
04	0250	36-00	137-24	0350	31-10	132-50	-10.0	133	431	-59	260/62
05	0354	31-19	133-00	0454	36-20	133-17	+3.0	122	431	-67	260/60
06	0456	36-30	133-19	0556	37-00	127-19	+5.0	177	432	-59	270/70

BALL	START TIME	N/S COORDINATES	E/W COORDINATES	STOP TIME	N/S COORDINATES	E/W COORDINATES	ALT B±	TEMP(C)	PANEL PSI	BALL SN
01	2400	34-54	130-16	0030	37-01	134-12	-20.0	-56	2300	E1863
02	0100	38-19	138-08	0130	38-40	141-23	-20.0	-54	2200	N2255
03	0150	39-21	144-26	0220	38-30	142-59	-10.0	-58	2500	1285A
04	0250	36-00	137-24	0320	33-44	134-11	-10.0	-59	2600	N2338
05	0354	31-19	133-00	0424	33-29	133-10	+3.0	-67	2700	M2987
06	0456	31-30	133-19	0526	36-42	131-20	+5.0	-69	2500	N3078

	CHART ENTRIES/EXPLANATIONS				
1	B/400 TNOP PRIOR to T/O				

CEN FORM FEB 82 40

Figure 10-12. Sample of OLYMPIC RACE Sortie Data Sheet.

MISSION REQUIREMENT

SORTIE IDENTIFIER	SP NO.	ALERT EVENT	LEVEL	SUPA
OZ-RKSO-001B				

TRACK PLANNED BY	DESIRED T/O TIME
SGT POTTER/EL 476	07/0001Z DEC 85
TRACK PASSED TO	**TIME PASSED**
DET 2	01/0200Z DEC 85

POSITION	PLANNED TRACK LEVEL	POSITION	LEVEL
RKSO	OPS		
BUSAN	B-20.0		
KOMATSU	B-20.0		
MATSUSHIMA	B-10.0		
DOLPHIN	B-10.0		
MIHO	MAX		
CHEJU	MAX		
RKSO			

REMARKS: TASKING I.D. 36-0074

Figure 10-13. Sample of Reverse Side of OLYMPIC RACE Sortie Data Sheet.

SORTIE DATA SHEET

IDENTIFIER 35-PAEI.-00123 (22)

(24) RR NO.	(25) TIME	(26) ALT	FLIGHT DATA (27) TAS	(28) WIND D/V	(29) COORDINATES N	W	SAMPLE DATA (30) F-1	(31) F-2	(32) I-2	(33) SYS	(34) A SPHERE	(35) B SPHERE	(36) ASSOCIATED PAPER NO.	(37) REMARKS - REVIEWED BY (23)
1	1900	02.0			64 -40	147 -06	-	-	1	-	-	-		R/400A & D-OXI Sc 2 Monitor T.P.
2	1916	29.0	450	175/45	66-55	151 -32	-	1	|	-				Level Off
5	2206	05.0	440	G250/48	80-00	165-00E	1	2	|	1	0037	N3944		T.P. 850 MB AOI 1500 PSI Spheres
6	2235	05.0	330	G180/10	80-12	140-00	|	↓	|	2	N3893	N3959		
7	2305	05.0	330	G210/23	79-00	127-00	|	3	|	3	N3278	101		
8	2330	05.0	325	G200/12	81-12	115 -06	↓	↓	|	4	E1785	N0877		
10	2358	05.0	330	G170/10	85-00	100 -00	04	04	↓	-	STOP	STOP		END 850MB AOI
12	0005	02.5	-	- /-	85-00	100 -00	2	4	2	5	N1077	N3545		IP 930MB AOI
13	0035	02.5	315	L IV	81-09	115 -11	|	↓	|	6	E1620	0142		
14	0104	02.5	315	G240/30	79-00	127-03	|	5	|	7	1066	E6215		
15	0133	02.5	310	G215/10	80-12	140-32	↓	↓	|	8	0165	0003		
16	0202	02.5	315	G225/15	80-00	165-00	04	6	|	-	STOP	STOP		END 930MB AOI - CLIMB
19	0455	35.0	450	270/30	65-10	151 -27W		04	↓					
20	0520	02.0	315	—/—	64-40	147 -06			04					
				/	-	-								
				/	-	-								
				/	-	-								
				/	-	-								
				/	-	-								
				/	-	-								
				/	-	-								
				/	-	-								

CEN FORM OCT 84 47

Figure 10-14. Sample of Sortie Data Sheet.

RR NO.	ADDITIONAL REMARKS
(19)	(20)
3	Begin Descent to AOJ 2148Z
4	B/400A Sc 1, D-FCO Sc 1 2202Z
9	B/400A Sc 2 2340Z
11	B/400A Sc 1 0001Z
17	B/400A Sc 2, D-FCO Sc 2 0207Z
18	B/400A Sc 3 Level 35.0M 0215Z
	EQUIPMENT MALFUNCTIONS NONE

MISSION REQUIREMENT

SORTIE IDENTIFIER	ALERT	SP NO.	SUPA	TOTAL TIME
35-PAEJ-0001P3 (1)	988 (2)	3 (3)	NA (4)	10.75 (5)

TRACK PLANNED BY	TRACK PASSED TO	TIME PASSED
TSgt Jones/DE19606	OL-B (7)	1400Z 01 25 (8)

DESIRED T.O. DTG	ACTUAL T.O. DTG	LDG DTG
141900Z OCT 85 (9)	141859Z OCT 85 (10)	150320Z OCT 85 (11)

SPECIAL EQUIPMENT OPERATORS	CALL SIGN	ACFT NO.
TSgt Smith (77) SSgt Brown (88) (12)	ARK 51 (13)	667 (14)

POSITION (15)	PLANNED TRACK LEVEL (16)	POSITION (17)	LEVEL
PAEJ	OPS		
ARC BRAVO	850		
ARC CHARLIE	850		
ARC DELTA	930		
ARC CHARLIE	930		
ARC BRAVO	OPS		
PAEJ			

REMARKS:
(18) BAR FOUR TRACK. SPECIAL INTEREST ALERT. PUMP SPHERES UNUSED SINCE DEPOT OVERHAUL. TRACKING I.D. 86-0022.

Figure 10-15. Sample of Reverse Side of Sortie Data Sheet.

AIRBORNE RADIATION MONITOR (ARM) DATA LOG

SORTIE IDENTIFIER (1) 35-PAEI-EGUN-052P3	RADIAC INSTRUMENT (2) AN/PDR-27					TOTAL TIME IFP (3) 060	ACFT NO. (4) 665	
WC - 130/WC 135								
TIME OF READING (Z) (5)	BKGD	1925	1940	1955	2010	2025		
ALTITUDE (M)	24.0	24.0	24.0	24.0	24.0	24.0		
MIDDLE OF COCKPIT WINDOW (1 FT)	0.1	0.4	0.6	0.7	0.7	0.7		
VICTOREEN 886 AT COCKPIT	0	0	0	0	0	0		
ENGINEER'S SEAT 3 FROM FLOOR	0.05	0.2	0.3	0.6	0.5	0.5		
AC VENT - SEXTANT PORT (1 INCH)	0.04	0.1	0.3	0.4	0.7	0.7		
SPARE VICTOREEN 886 NEAR SEXTANT PORT	0	0	0	0	0	1.0		
AC VENT - ARE CONSOLE (1 INCH)	0.05	0.1	0.2	0.5	0.6	0.5		
AISLE ARE CONSOLE (1 INCH)	0.05	0.2	0.3	0.6	0.5	0.5		
VICTOREEN 886 AT I-2 FOIL ON CONSOLE	0	0	0	0	0	0		
AFT AC VENT (1 INCH)	0.05	0.09	0.2	0.4	0.6	0.6		
AFT AISLE (3 FT FROM FLOOR)	0.05	0.2	0.3	0.5	0.5	0.5		
B52								
TIME OF READING (Z)								
ALTITUDE								
MIDDLE COCKPIT WINDOW (1 FT)								
VICTOREEN 886 MIDDLE OF COCKPIT								
IP SEAT (3 FT FROM FLOOR)								
BETWEEN GUN/EWO (3FT FLOOR)								
AC VENT ARE CONSOLE (1 INCH)								
VICTOREEN 886 ON ARE								
BETWEEN NAV/RNAV (3 FT FLOOR)								
VICTOREEN 886 NAVS TABLE								
AC VENT DOWNSTAIRS (1 INCH)								
IN SEAT (1 - 3 FT)								

CEN FORM JAN 84 80

Figure 10-16. Sample of Airborne Radiation Monitor (ARM) Data Log.

SONOBUOY/WATER SAMPLE IDENTIFICATION DATA SHEET

SORTIE IDENTIFIER (1) 30-PMDY-012≡

T.O. DTG (2) 18/1100Z JUN 86 | TOTAL TIME (4) 9.5 | EVENT (5) 86-02 | SEO(S)/OFFICER (S) (6) MAJ FAIRLESS, (8) SSGT CLARK, (8)

LDG DTG (3) 18/2029Z JUN 86

SONOBUOY

DEP SEQ	S/N OR CHANNEL NO.	TIME (Z)	COORDINATES N/S	COORDINATES E/W	REMARKS: FREQ., TYPE	POOL NUMBER
A	(7)					
B						
C						

SMOKE/DYE MARKERS

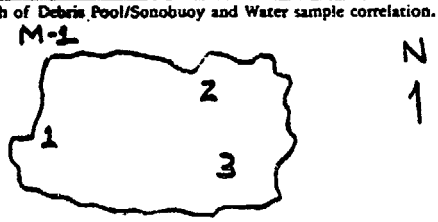
Marker No.	TYPE	TIME (Z)	N/S	E/W	REMARKS	POOL NUMBER
M-1	(8) SMOKE	18/1512	22-15	175-20	300 yds NW of Pool	1
M-2						
M-3						
M-4						
M-5						
M-6						

WATER SAMPLE

Samp No.	Bucket Serial No.	Shipping Cont. No S/N	TIME (Z)	COORDINATES N/S	COORDINATES E/W	REMARKS	POOL NUMBER
1	(9)027	12	18/1521	22-15	175-20	Approx 1/2 GAL	1
2	043	18	18/1530	-		LOST - ROPE BROKE	1
3	014	4	18/1541	22-15	175-20	APPROX 1 GAL	1
4							
5							
6							
7							
8							
9							
10							

REMARKS (Use this space and reverse side for map/sketch of Debris Pool/Sonobuoy and Water sample correlation.

(10)



CEN FORM 30 JUL 85 PREVIOUS EDITIONS ARE OBSOLETE

Figure 10-17. Sample of Sonobouy/Water Sample Identification Data Sheet.

Chapter 11

REPORTS

11-1. Purpose. This chapter establishes requirements and preparation instructions for reports required to support aerial sampling operations.

11-2. Plans, Requirements, and Operations Reports (PROREP):

a. Purpose. PROREPs are required to provide standardized tasking and reporting procedures, and periodic status reports. PROREPs are required for all Special, Domestic, Maritime, and Miscellaneous Sampling/Collection Operations. (Include the mission identifier for PONY EXPRESS missions in section Z6 of the OPREP-4.)

b. PONY EXPRESS missions will be reported via the OPREP system; PROREPs are not required. The mission identifier and SEO numbers should be included in Section Z of the OPREP-4.

c. Definition. PROREPs are divided into five types:

(1) PROREP 1 - Mission Tasking. The PROREP 1 will identify all mission requirements.

(2) PROREP 2 - Mission Set-up. The PROREP 2 will identify planned operations from field locations.

(3) PROREP 3 - Mission Departure. The PROREP 3 will identify phase two (P-2) departures.

(4) PROREP 4 - Mission Termination. The PROREP 4 will identify all mission terminations.

(5) PROREP 5 - Periodic Status Report. The PROREP 5 will provide a periodic status report from all field locations.

d. Preparation Instructions:

(1) PROREP 1 - A PROREP 1 will be transmitted to field units and flying support organizations as soon as requirements become valid. PROREP messages will include sample and equipment disposition when "V" sortie sampling is conducted. A separate message will be sent to request an ARE deployment kit if known that an FOL will be used. The PROREP will include:

(a) Tasking identifier(s).

(b) AOI requirement (type).

(c) AOI IP DTG.

(d) Sampling level.

(e) AOI (when applicable).

(f) Task expiration D

(g) Remarks (as required).

(2) PROREP 2 - A PROREP 2 will be transmitted as soon as a sortie plan is established for all missions. AIG 10386 will be included as an action addressee on all sorties landing at other than the departure base. A follow-up or amended PROREP 2 will be transmitted whenever a significant change occurs, or if departure is delayed two hours or more. The PROREP 2 will include:

(a) Tasking identifier(s) (from PROREP 1).

(b) Mission identifier.

(c) Planned departure DTG/estimated time enroute.

(d) Planned track/SUPA number (when applicable).

(e) Remarks (as required; e.g., associated purpose for "V" sorties.)

(3) PROREP 3 - A PROREP 3 will be transmitted as soon as possible, but not later than two hours following takeoff of a P-2 sortie. AIG 10386 will be included as an action addressee on all sorties landing at other than the departure base. The PROREP 3 will include:

(a) Tasking identifier(s) (from PROREP 1)

(b) Mission identifier.

(c) Takeoff DTG/estimated time enroute.

(d) Aircraft tail number (last three digits)/call sign.

(e) Remarks (as required).

(4) PROREP 4 - A PROREP 4 will be transmitted as soon as possible but not later than two hours following mission completion or expiration of tasking. AIG 10386 will be an action addressee on all PREREP 4s. The PROREP 4 will include:

(a) Tasking identifier(s) (from PROREP 1).

(b) Mission identifier.

(c) Takeoff DTG/tail number.

(d) AOI IP DTG.

(e) Landing DTG/total time (extracted from AF Form 369, AFORMS Aircrew/Mission Flight Data Document).

(f) Identification number of SEO(s) and operations officer(s) on flight. Example: 3/14/26/29.

(g) Remarks. Include IFP data not previously reported, aircraft maintenance status when available (to include a brief description), significant changes to planned tracks, reason for degraded or mission non-accomplishment, serious equipment malfunctions not previously reported, and associated purpose for all Volant Track sorties.

(5) PROREP 5 - A PROREP 5 will be transmitted whenever a change in personnel status or any other situation occurs which could create an adverse effect on mission accomplishment. Information required will include:

(a) Personnel Status (available for flying duty, DNIFs, leaves, etc.).

(b) Remarks (as required).

e. Submission Requirements. (PROREPs are exempt from minimize)

(1) AFTAC Addressees (for PROREPs not sent via AIG)

(a) Action

1. HQ AFTAC/DOR.

2. The unit at the scheduled recovery base.

(b) Info

1. All other AFTAC flying units.

2. HQ MAC/DOOS and 23AF/DOO when missions are delayed for maintenance and when MNA information is included in PROREPs.

(2) Precedence:

(a) Atmospheric events - IMMEDIATE.

(b) Other sorties - PRIORITY.

NOTE: HQ USAF Washington DC/XOORZ will be an INFO addressee on PROREP 1 messages for alerts and special events only).

NOTE: Circumstances may dictate higher than normal precedence messages. In accordance with AFR 100-20, communications centers must accept handwritten messages of IMMEDIATE precedence. Individual communications centers may accept handwritten messages of lower precedence. Ensuring HQ/DOR is aware of all information concerning the mission is the responsibility of the senior ranking deployed AFTAC individual.

(3) Classify all U-2 PROREPs as required by the AFTAC or SENIOR YEAR Security Classification Guide to insure protection of classified locations and/or aircraft capabilities.

(4) Routing:

(a) Make every effort to transmit PROREP traffic via AUTODIN (message). If unable, pass PROREP information to the nearest AFTAC field unit via telephone.

(b) Field units receiving PROREP data via telephone will transmit PROREP IAW para 11-2c and 11-2d.

11-3. Sphere/Maritime Sample Shipment Report:

a. Purpose. To provide shipping information on whole-air and seawater samples via TMO channels.

b. Submission requirements:

(1) This report will be submitted whenever spheres or maritime samples are shipped to a laboratory facility from a deployed location.

(2) Messages will be dispatched by IMMEDIATE precedence when samples are expected to arrive at the destination within 24 hours. PRIORITY precedence will be used for sample transit time in excess of 24 hours. Messages will be placed into communication channels within two hours following acceptance by transportation personnel or departure on mission aircraft.

(3) All shipment reports will include this headquarters (DOR/TNT) as info addressees.

c. Preparation Instructions. Prepare the Sphere/Maritime Shipment Report in the following format:

(1) Mission identifier(s) (on which collection(s) were made).

(2) Transportation control number.

(3) Departure point of shipment.

(4) Date and time of departure (Zulu).

(5) Name of carrier.

(6) Flight number.

(7) Destination.

(8) Date and time of arrival (Zulu).

NOTE: Repeat items 3 thru 8 as necessary to report complete itinerary.

(9) Airway bill number.

(10) Government bill of lading number.

(11) Weight of shipment.

(12) Cubic feet of items.

(13) Number of pieces.

(14) Remarks.

11-4. Alert Summary Report:

a. Purpose. To provide this headquarters a summary of sampling operations for specific alert/special event.

b. Submission Requirement. An alert summary will be submitted for all alerts/special events by each participating unit. Forward to headquarters a copy of those forms pertinent to atmospheric alerts or IFP sorties with the alert summary. Those forms not directly related to alerts will be retained at the field locations. Reports will be forwarded within 10 working days following alert/special event rollup.

c. Preparation Instructions:

(1) Synopsis of flying activity.

(2) Special comments on inflight activity.

(3) Detailed explanation of the cause and impact of delayed or aborted sorties.

(4) Other problem areas, comments, recommedations.

(5) Attach pertinent Mission Requirements Sheet(s) and Radiation Log(s).

11-5. Disposition. Reports described in this chapter will be maintained IAW table in Attachment 1.

Chapter 12

RADIOLOGICAL SAFETY

12-1. Purpose. This chapter specifies responsibilities and provides procedures for radiological safety for aircrew and ground support personnel.

12-2. References:

a. AFR 161-8, Aerospace Medicine - Control and Recording Procedures, Occupational Exposure to Ionizing Radiation.

b. AFR 161-28, Aerospace Medicine - Personnel Dosimetry Program and the USAF Master Radiation Exposure Registry.

c. 23AFR 55-5, Aircrew Radiological Safety

d. TO 00-110A-1, Guidelines for Identification and Handling of Aircraft and Material Contaminated with Fission Product Debris.

12-3. Definitions:

a. Dose - The quantity of ionizing radiation administered or absorbed.

b. Dosimeter - A device which measures radiation dose.

c. Roentgen, Rad, Rem - Units of ionizing dose. For the purpose of this regulation, these units may be considered equal.

d. Occupational Radiation Worker - An individual who requires routine access to restricted areas to perform the job. Sampling aircrew and ground support personnel are considered in this category.

e. Restricted Area - Any area containing ionizing radiation levels such that an individual continuously present in the area could receive a whole body radiation in excess of two millirem in one hour or 100 millirem in seven consecutive days. Sampling aircraft are considered restricted areas after a contact during SPECIAL, DOMESTIC, and PONY EXPRESS operations.

12-4. General. Aircraft and aircraft accessories may become contaminated with fission product debris as a result of participation in sampling operations. This contamination emits energy in the form of nuclear radiation which may be harmful to the human body. The extent of the damage to the body is governed by the amount and type of radiation received and the period of time over which the radiation is received. The body will tolerate some radiation; the exposure of personnel to radiation should always be kept to the lowest practicable level. Airborne radiation safety procedures are therefore required to reduce the exposure of aircrew personnel to potentially harmful radiation.

12-5. Responsibilities:

a. MAC and SAC will ensure all personnel under their command or within their jurisdiction comply with the radiation protection standards of AFR 161-8 and the USAF Film Dosimetry program as directed by AFR 161-28.

b. AFTAC units will:

(1) Ensure all personnel under their command or within their jurisdiction comply with the radiation protection standards of AFR 161-8 and the USAF Film Dosimetry program as directed by AFR 161-28.

(2) Assist MAC and SAC aircrews in determining the radiation level being encountered during sampling operations.

12-6. Radiation Protection Standards:

a. These radiation protection standards (from AFR 161-8) apply to sampling operations and activities conducted in support of HQ USAF COMBAT CATCH Plan unless specifically waived by the Air Force Surgeon General. These values are the maximum allowable.

b. The accumulated dose of radiation to the whole body, head and trunk, active blood forming organs, gonads, or lens of the eye shall not exceed:

(1) Three rem in any calendar quarter, or

(2) Five times (N-18) rem total lifetime dose where N equals the present age in years. The occupational exposure to radiation by personnel under 18 years of age is not permitted.

12-7. Radiation Measuring Devices:

a. The primary dosimeter for occupational radiation workers is the Thermo Luminiscent Dosimeter (TLD). Occupational radiation workers will:

(1) Obtain a TLD through the local base medical services.

(2) Wear a TLD at all times when within a restricted area.

(3) Ensure TLD is stored in the specific storage area designated by the organization commander when not in use.

b. The secondary dosimeter is the pocket ionization chamber dosimeter.

(1) Direct reading pocket dosimeters may be used to supplement but not replace the TLD program for occupational radiation workers. These direct reading instruments may be helpful in immediately determining the approximate radiation dosage received and to avoid exceeding the radiation exposure limits specified in AFR 161-8.

(2) Visitors to restricted areas, who are not occupational radiation workers, will wear direct reading pocket ionization chamber dosimeters instead of TLD. Positive reports will be made to the custodian of the individual's health record through the local director of base medical services.

c. Portable radiation survey meters can be used to determine the approximate radiation dosage received. Meters such as the AN/PDR-27 provide an immediate readout of radioactive level in milliroentgens per hour or roentgens per hour. To convert this reading to dose, the average value measured must be multiplied by the time of exposure in hours.

12-8. Radiation Safety Procedures. The following minimum safety precautions will be observed:

a. General Safety Procedures:

(1) TLDs and/or dosimeters will be worn by all personnel when working in restricted areas.

(2) Disposable gloves will be worn when working on equipment known to be radiologically contaminated. Place used plastic gloves in a single CEN Form 25 and turn into the local laboratory for disposition.

(3) Personnel will wash their hands thoroughly with detergent or soap as soon as possible after working on equipment known to be radiologically contaminated.

(4) Personnel with open cuts, sores, scratches, or wounds will not work on radiologically contaminated equipment.

(5) Personnel acquiring cuts, scratches, or open wounds while working on radiologically contaminated equipment will wash the affected area and seek medical treatment as soon as possible.

b. Airborne Safety Procedures:

(1) All occupational radiation workers will wear the TLD during sampling sorties.

(2) The special equipment operator will advise the aircraft commander to initiate the ARM checklist whenever the B/400A rate meter system registers scale six or higher; whenever 300cpm alpha activity is encountered; or whenever the gamma activity rises 15mR/hr above background. Additionally, use these procedures during suspected PONY EXPRESS contacts or similar sorties. When this occurs, the following additional safety precautions will be taken:

(a) Discontinue smoking and eating during the period of positive contact with radioactive debris.

(b) An aircrew member designated by the aircraft commander will conduct periodic monitoring of the level of radioactivity within the aircraft. Document readings on Cen Form 80.

(c) Use 100% oxygen to preclude the possible ingestion of alpha particle emitters. Continue using 100% oxygen for a minimum of 30 minutes after departing IFP contact.

NOTE: Personnel handling PONY EXPRESS water samples must wear plastic gloves to preclude contaminating themselves or the samples by alpha particle emitters.

(3) Place all IFP I-2 papers in a high speed box to limit the exposure to radiation. During preflight the SEO should ensure a high speed box is available for this purpose.

c. Identify screens, grids, separators, rings, and clamps denoting depot/laboratory inspection required by making the appropriate entry in the AFTO Form 781.

NOTE: The SEO will brief ARE maintenance personnel to use separate plastic gloves when downloading each IFP U-1 filter paper and to identify the filter assemblies and separators for return to depot for laboratory inspection.

Chapter 13

DECONTAMINATION/SANITIZATION

13-1. Purpose. This chapter specifies responsibilities and provides requirements for ARE and aircraft decontamination.

13-2. References:

a. AFR 161-8, Aerospace Medicine - Control and Recording Procedures - Occupational Exposure to Ionizing Radiation.

b. AFR 161-28, Aerospace Medicine - Personal Dosimetry Program and the USAF Master Radiation Exposure Registry.

c. AFR 160-132, Medical Services - Control of Radiological Health Hazards.

d. TO 00-110A-1, Guidelines for Identification and Handling of Aircraft and Material Contaminated with Fission Product Debris.

e. TO 00-110A-12, Procedures for Radiological Decontamination.

f. TO 1-1-1, Cleaning of Aerospace Equipment.

g. TO 12M5-4-5-2, F-52, ARE System Package (ARE Pod).

h. TO 12M5-4-3-1, FI-2, Assembly.

i. TO 12M5-4-2-12, Universal Foil.

j. TO 12M5-4-8-12, Electrical Pressure System PN 385524-9.

k. TO 12M5-4-1-151-1, Depot Level Decontamination.

13-3. General. Aircraft and accessories may become contaminated with radioactive debris as a result of aerial sampling operations. This contamination may cause any or all of the following conditions:

a. The aircraft may be contaminated at such a high level that it poses a possible radiation safety hazard to aircrew and ground personnel. Aircraft in this condition will not be used. Aircraft and equipment in this category will be handled by local disaster preparedness/bioenvironmental personnel.

b. Aircraft and accessories may become contaminated with nuclear debris but not to the extent that a radiation safety hazard exists. To eliminate any confusion during the required cleansing process of aircraft/equipment that falls into this category, the term "sanitization" will be used in lieu of "decontamination." The degree of sanitization required is entirely dependent upon the extent of contamination and the projected utilization for the aircraft/equipment. The most common instance requiring this type of sanitization occurs when an atmospheric nuclear event has been successfully sampled and both aircraft and ARE are contaminated. On-scene radiological safety personnel determine that a hazard does not exist. Even though both aircraft and equipment have been declared "clean", from a safety standpoint, a significant cleansing is still required before aircraft or equipment may be acceptable for future sampling requirements against underground events or special follow-on sorties. Both the aircraft and equipment must be "sanitized" to the level of residual activity in the atmosphere.

c. Aircraft and accessories may become contaminated with material sampled during PONY EXPRESS and/or selected Domestic Operations. Contamination of this nature will not normally be observed on ARE detection equipment or standard Air Force Radioactivity Measuring Equipment. On PONY EXPRESS Operations special detection equipment and a technician will be deployed to the Foward Operating Location (FOL) as a means of detecting possible radioactive contaminants collected during a sampling mission. Results will be a factor when determining the Aircraft Usability Factor code as described in paragraph 13-5.

13-4. Responsibilities:

a. MAC and SAC will decontaminate/sanitize aircraft, accessories, and ARE as required to ensure personnel safety and minimum cross-contamination of samples.

b. AFTAC units will:

(1) Assist in evaluating decontamination and sanitization efforts and interpret the measurements of contamination levels.

(2) Provide guidance to MAC/SAC on the level of sanitization required, the expected debris content of the atmosphere, and the type of AFTAC directed sampling sorties to anticipate. AFTAC personnel will encourage the use of the most suitable aircraft for each sortie considering the previously mentioned planning factors and operational requirements.

(3) Identify ARE which must be replaced with decontaminated/sanitized equipment. Field level cleansing procedures will be attempted in accordance with the appropriate Air Force Tech Order prior to returning the affected ARE to Depot for overhaul.

(4) Advise MAC/SAC on the proper disposition of contaminated ARE.

13-5. Aircraft Usability Factors. Once it has been determined that aircraft contamination levels pose no actual or potential health hazard, conditions may exist which could cause serious technical problems during laboratory analysis of follow-on sorties. This may also degrade sampling efforts against other current or subsequent alerts. Personnel should be cautioned to avoid such terms as "Hot" or "Contaminated Aircraft" since neither accurately describes an aircraft in this category. All references to suitability for follow-on sampling sorties/operations will be derived from the Aircraft Usability Factor (AUF) Codes. Field locations will determine the appropriate AUF Code if they have the capability to analyze swipes. Field units will inform HQ AFTAC/DOR/TNT of activity levels observed before and after washing and their intentions regarding AUF codes. HQ/TNT reserves the option of revising AUF codes as necessary and tasking aircraft rewash if mission requirements dictate. Specific AUF codes are:

a. AUF - 1. An aircraft suitable for all sampling efforts.

b. AUF - 2. An aircraft that is not suitable for use against an underground nuclear event.

c. AUF - 3. An aircraft which is not suitable for any aerial sampling operation.

d. AUF - 4. An aircraft that is not suitable for use against a PONY EXPRESS or Domestic event.

e. AUF - 5. An aircraft that is suitable for use only against a specified event.

NOTE: During PONY EXPRESS operations the special detection equipment results will aid in determining AUF codes.

13-6. Decontamination/Sanitization of ARE. Determination of replacement of ARE depends on the level of success of field decontamination/sanitization efforts and operational requirements. ARE which has been used to collect debris from an atmospheric event will normally be replaced prior to being used for sampling against underground events. Additionally, ARE which has successfully collected samples during PONY EXPRESS or domestic (LANSL/LANL) operations, will normally be replaced prior to sampling against subsequent PE missions, and either atmospheric or underground events.

a. Field level decontamination procedures will be as specified in the following technical orders:

(1) 12M5-4-2-12, U-1 Foil.

(2) 12M5-4-3-1, FI-2 Foil Assembly.

(3) 12M5-4-5-2, F-52 Foil, P-52 Platform.

(4) 12M5-4-8-12, Electrical Pressure System PN 385524-9.

NOTE: Field level decontamination procedures for U-2 ARE will be IAW appropriate SAC directives.

b. Depot level decontamination will be accomplished IAW T.O. 12M5-4-151-1.

c. MAC and SAC will periodically perform a minimum sanitization (routine washing) of sampling equipped aircraft and ARE in accordance with T.O. 1-1-1. This is required to prevent the gradual accumulation of dirt, grease, oil, and residual debris (present in the atmosphere) from contaminating subsequent samples.

d. Spheres used on Atmospheric, PONY EXPRESS, or Domestic (LANSL/LANL) collections will be returned for depot cleaning prior to reuse. Spheres used against underground events will be reused or returned to depot IAW T.O. 9P1-2-17-2 or as determined by local laboratory personnel.

e. AFTAC will perform a laboratory inspection on all screens that were used on an IFP sortie or were used to make a collection against a PONY EXPRESS event to insure control of contaminated ARE assets. The SEO will make the following entries in the AFTO Form 781 A.

(1) For IFP missions:

(a) "Screens and separator assemblies require depot laboratory inspection prior to use, except for missions against Alert XXX. For further missions against Alert XXX wash prior to use. Identify screens/separators as from mission identifier/alert foil serial number."

(b) "All ARE requires laboratory inspection prior to sampling except for missions against Alert XXX. Used on mission identifier/alert."

NOTE: If facilities are not available for washing screens operational consideration may necessitate use without washing.

(2) For collections against a PONY EXPRESS event:

(a) "All ARE requires laboratory inspection prior to use. Used on: mission identifier."

(b) "All screens and separators require laboratory inspection prior to use."

13-7. Periodic Monitoring Program (Swipe). The requirement exists to monitor sampling aircraft and equipment acceptability for AFTAC missions. The swipe program also provides documentation of background contamination levels for both aircraft and equipment.

a. Laboratory and operations personnel will jointly establish a local program to meet these needs. The following minimum requirements must be satisfied:

(1) Swipe each sampling aircraft before departure from home station or upon arrival at TDY location.

(2) Swipe, during post-flight, each aircraft encountering IFP conditions.

(3) Swipe, during preflight, aircraft flying PONY EXPRESS sorties.

(4) Swipe, during post-flight, aircraft that have collected particulate and/or whole-air samples from a PONY EXPRESS event.

(5) Swipe, during preflight, aircraft flying sorties involving radioactive fuel materials (e.g., LANL, LLNL).

(6) Swipe, during post-flight, aircraft following sampling operations involving non-radioactive fuel materials (e.g., LANL, LLNL).

(7) Swipe, during preflight, aircraft flying SEC-P sorties.

(8) Swipe, after aircraft has been washed (IFP conditions or PONY EXPRESS event or when designated in frag orders).

b. Areas to be "swiped" are as follows:

(1) WC-135:

(a) Fuselage, just forward of left overwing hatch.

(b) Fuselage, just forward of right overwing hatch.

(c) Fuselage, random location.

(d) Left U-1 foil inlet duct.

(e) Right U-1 foil inlet duct.

(f) F1-2 inlet duct.

(2) WC-130:

(a) Fuselage, just forward of left U-1 foil.

(b) Fuselage, just forward of right U-1 foil.

(c) Fuselage, random location.

(d) Left U-1 foil inlet duct.

(e) Right U-1 foil inlet duct.

(f) FI-2 foil inlet duct.

(3) B-52:

(a) Fuselage, just forward of F-52 pod.

(b) Fuselage, random location.

(c) Each foil inlet duct (five swipes total).

(4) U-2:

(a) Fuselage, just forward of foil.

(b) Fuselage, random location.

(c) Foil inlet duct.

c. Swipes of the fuselage areas will be accomplished by placing the fuzzy side of the FI-2 paper against the aircraft skin and rubbing in a circular motion, covering approximately one square foot of the fuselage.

d. Swipes of the sampling foils will be accomplished by placing the fuzzy side of the FI-2 paper against the inner surface of the foil inlet duct and rubbing around the inner circumference.

e. Plastic gloves will be utilized while swiping following an IFP mission. A separate plastic glove will be used for each swipe. Used plastic gloves will be placed in a single CEN Form 25 and turned in to the local laboratory for disposition.

f. Each FI-2 paper used will be placed in a separate CEN Form 32.

g. AFTAC field laboratories will analyze the swipes and advise HQ AFTAC/TNT of the status of the aircraft and ARE. HQ AFTAC/DOR, in close coordination with TNT, will determine acceptability/unacceptability of aircraft and ARE and will advise appropriate MAC/SAC and AFTAC field units of sanitization required and any significant changes.

NOTE: For PONY EXPRESS events the results of the swipes will be reported to the on-scene TNT Technical Advisor, who will forward recommendations the FOL OIC.

Chapter 14

SAMPLE DISPOSITION

14-1. Purpose. This chapter outlines guidance for disposition of samples at locations without an AFTAC laboratory facility.

14-2. Responsibilities. The senior deployed AFTAC representative is responsible for:

a. Contacting HQ AFTAC/DO/LG/TN (through the AFTAC Duty Officer) to determine if samples require shipment.

b. Proper packaging and identification of samples entered into transportation channels.

14-3. Shipment of Samples:

a. Specific guidance on sample shipment will be contained in implementing directives for PONY EXPRESS and special projects.

b. Samples will normally be retained with mission aircraft. In the event significant delays (24 hours or greater) in returning to a base with a laboratory occur or the mission is IFP, contact HQ/DO/LG/TN (through the AFTAC Duty Officer) for guidance on sample shipment.

c. Security of Samples. The classification or criticality of the sample may require that it be escorted during shipment. Armed Forces Courier Services (ARFCOS) may be used for samples that are not radioactive for purposes of transportation. Samples meeting the criteria of paragraphs 14-5b, or 14-7b(1) will not be entered in ARFCOS channels. A letter authorizing use of ARFCOS is contained in attachment 2 of this regulation.

d. See attachments 2 and 3 for additional information on shipping addresses, fund cites, waivers, etc.

e. If you have to ship samples, contact the transportation management office (TMO) on DOD installations, or the resident transportation expert, when dealing with non-DOD agencies, for assistance in preparing the necessary documentation. If problems arise contact the AFTAC Duty Officer for assistance.

14-4. Classification of Samples:

a. From US/UK Tests. Samples will be classified, CONFIDENTIAL RESTRICTED DATA, pending analysis.

b. From Foreign Tests. Samples will be UNCLASSIFIED if unidentified as to source or if identified by arbitrary numbers only. Alert or special event numbers are arbitrary.

c. From PONY EXPRESS. Samples will be UNCLASSIFIED if unidentified as to source or identified by arbitrary event number only.

14-5. Particulate Samples:

a. From Inflight Negative (IFN) sampling operations--These samples are not radioactive material for purposes of transportion and may be shipped via any mode that is appropriate, based on classification and desired speed of delivery.

b. From Inflight Positive (IFP) sampling operations--These samples are radioactive material for purposes of transportation. They may be shipped via mission aircraft. They may also be shipped via MAC channels by following the provisions of AFR 71-4 and the information contained in attachment 2 of this regulation. Under no circumstances will IFP samples be entered into commercial transportation channels without express written guidance from HQ AFTAC.

c. From PONY EXPRESS operations--Unless actual IFP indications are obtained, samples from PONY EXPRESS missions will be shipped IAW para 14-5a above. If actual IFP indications are obtained, ship IAW para 14-5b above.

d. From Special Projects--If special shipping instructions are required they will be contained in implementing directives.

14-6. Whole-Air Samples (Spheres). For purposes of transportation, whole-air samples are not radioactive material. They are considered hazardous cargo because they are compressed gas. If they are entered into transportation channels, they must be identified as non-flammable compressed gas (air). Certification of the shipping container (sphere) is contained in technical order 9P1-2-17-2. The required documentation for shipment of whole-air samples depends

upon the transportation mode used and assistance should be requested from the local transportation specialists. Regardless of the mode used, it is the shipper's responsibility to identify the cargo as hazardous (non-flammable compressed gas, air) when offering it for shipment.

14-7. Water Samples:

a. From PONY EXPRESS operations--These samples are not radioactive material for purposes of transportation and may be shipped via any mode that is appropriate based on classification and desired speed of delivery.

b. From maritime sampling operations:

(1) If positive contact is made, based on D-500 indications, shipment will be IAW para 14-5b above.

(2) If negative contact is made, based on D-500 indications, shipment will be IAW para 14-5a above.

14-8. Mission Data Forms. A copy of all pertinent mission data forms will accompany all sample shipments.

14-9. Additional Guidance. Additional guidance on sample shipment can be found in AFR 71-4 and Code of Federal Regulations Title 49.

Chapter 15

OLYMPIC RACE OPERATIONS

15-1. Purpose. This chapter specifies the normal interception and collection procedures used for high level sampling sorties flown against foreign nuclear atmospheric events. In addition, it specifies the basic techniques used by the U-2 pilots while performing their sampling duties.

15-2. Detection/Vectoring Techniques. Normally the D-500A will provide the first indication of the presence of radioactive debris. When an increase in the D-500A gross rate is observed, check the directional indicators to determine the relative location of the debris. Vector the aircraft in the indicated direction until contact with the debris has been established.

NOTE: D-500A directional indications are relative to the wing axis, therefore, changes in aircraft attitude must be taken into consideration.

a. A gross rate increase of five or more divisions, with accompanying directional indications, should be considered as significant and investigated.

b. If gross rate indications do not increase with a maximum climb/descent of 5000 feet or a lateral movement of 20 nautical miles on either side of the flight track, return to the original flight track. These restrictions do not apply if the gross rate continues to increase with accompanying directional indications. The limits of deviations from planned tracks can vary with unique situations. The on-site AFTAC representative will determine the parameters in these cases and brief the pilot.

15-3. Contact Procedures. Normally, a rapid increase in the amount of radioactivity measured by the B/400B indicates a positive contact with the debris. The following steps outline the procedures to be followed upon contact:

a. Continue straight ahead for one to two minutes, reduce vent, tighten face seal, and record the following IFP data:

(1) Zulu time of contact.

(2) Coordinates of contact in degrees and minutes.

(3) Altitude of contact.

(4) Flight level winds.

b. Establish a standard rate orbit, allowing the aircraft to drift with the wind.

c. Start new filter and ball collection.

NOTE: Disregard D-500A indications once positive contact has been verified by increasing B/400B indications.

d. Transmit inflight contact report. Transmit this report in the clear. Format is contained in OLYMPIC RACE Inflight Checklist (Figure 15-3).

15-4. Collection Procedures:

a. Collection procedures start at the initial point (IP). To start filter exposure, position door switch to open. Continue exposing the filter papers for a maximum of three hours duration or until IFP indications are observed. Pump one background ball at the IP. Place the power switch of the P-5 Ball Sampler Control Panel in the "ON" position.

NOTE: If Ball No. 1 reaches 2800 psi prior to the end of thirty minutes, manually turn system OFF to prevent automatic sequencing.

b. Inflight Positive (IFP) collection procedures.

(1) If B/400B indications exceed maximum scale 7 within 10 minutes of the initial contact, collect two 20 minute filter papers and simultaneously pumped balls, then return to base.

(2) If B/400B indications do not exceed maximum scale 7 within 10 minutes, collect two 20 minute filter papers with simultaneously pumped balls, then continue on the planned track using the same filter exposure outlined in paragraph 15-3a (Additional background ball is not required).

15-5. Reintercept Procedures. If contact with a debris cloud is lost, use original contact point and flight level winds to vector aircraft back to a point where reintercept is planned. At the expected reintercept point use the following search patterns until contact with the debris is reestablished.

a. Initiate a standard rate orbit regardless of detection equipment indications. If positive contact has not been established after one complete orbit, reverse the orbit.

b. If positive contact has not been made after reversing orbit, sound, covering 2,000 feet above and below the original contact altitude. Sounding is accomplished by climbing and descending at a rate of 500 feet per minute while maintaining orbit. If positive contact is not established, return to the original contact altitude and establish an expanding box search pattern.

c. The expanding box search pattern is accomplished by flying a series of legs turning 90 degrees in the same direction after each leg. The first two legs should be two minutes in length, the third and fourth legs should be four minutes in length, and the fifth leg should be six minutes in length. If positive contact is not established, proceed to a point known to be downwind and ahead of the suspected position of the debris cloud and establish a sawtooth search pattern.

d. The sawtooth search pattern consists of a series of legs going back and forth across the wind flow, with each leg angled slightly upwind.

15-6. Before Landing Procedures. Discontinue sampling collections upon completion of the assigned track or when returning to base after meeting criteria in 15-3b(1). Turn P-5 Ball System off and advance the F-4 foil through filter six. If inflight negative, leave the sampling hatch door closed. If inflight positive, purge the foil by placing the filter position switch up, and the door switch to open.

15-7. OLYMPIC RACE Checklists. These checklists provide the pilot with the appropriate information for the OLYMPIC RACE sampling missions. Some checklist items require a visual check of equipment operations from outside the aircraft at the same time the pilot is in the seat. The AFTAC representative or maintenance technician will assist in these checks. Unique mission requirements or malfunctions may require deviations from the checklist procedures.

a. Preflight Checklist - (Figure 15-1). This checklist will be accomplished by maintenance personnel during their normal aircraft preflight. All discrepancies will be corrected or the AFTAC on-site representative notified. In addition, the AFTAC representative and the U-2 Mobile Officer will perform this checklist together prior to launch.

b. OLYMPIC RACE Event Checklist - (Figure 15-2). This checklist contains all pertinent inflight sampling instructions and positive contact protective actions to be taken by the pilot. It also supplies the formats for the inflight reports and the flight data sheet form for the sampling profile.

c. OLYMPIC RACE Background Checklist - (Figure 15-3). This checklist contains all pertinent inflight sampling instructions as well as the sampling profile for the pilot. It also supplies the formats for the inflight reports and the flight data sheet.

15-8. Inflight Reports. Inflight reports are used during OLYMPIC RACE operations to advise of inflight contacts (Alpha Report), malfunctions (Bravo Report), visual sightings (Charlie Report) and inflight status (Echo Report). Transmit inflight reports in the clear to OLYMPIC RACE operations using UHF (when in range) or HFSSB. Transmit reports as soon as practicable following the contact, malfunction, or visual sighting. These reports provide the on-site AFTAC representative with information concerning the flight's progress.

a. Alpha Report. Provides notification of IFPs. This information is valuable for follow-on track planning and sampling requirements. Preparation Instructions (See Figure 15-4):

Sequence

(1) Enter call sign

(2) Enter Latitude/Longitude

(3) Enter Time of Contact/Loiter Time Available

(4) Enter Altitude (base plus/minus)/Wind Direction/Velocity

(5) Enter B/400B Deflection/Scale/D-500A Deflection/Scale prior to contact (Background Level) See NOTE.

(6) Enter B/400B readings in contact, Deflection/Scale/Time in minutes. See NOTE.

(7) Enter D-500A readings in contact, Deflection/Scale. See NOTE.

(8) Enter Intentions/Remarks: (From the following phonetic identifiers)

Identifier	Remarks
Romeo	Orbit
Sierra	Search local area
Tango	Continue track
Uniform	Return to base

NOTE: Report B/400B and D-500A readings as a percentage of full-scale deflection.

b. Bravo Report. Informs of malfunctions in the sampling equipment that could adversely affect the mission. Allows the AFTAC representative to decide whether to modify the sampling profile, or abort the mission and launch a make-up sortie. Preparation Instructions (See Figure 15-5).

Sequence

(1) Enter call sign

(2) Enter Latitude/Longitude

(3) Enter Malfunction. This entry will consist of a three or more item phonetic identifier. The first item will indicate the malfunctioning equipment; the second will identify the type malfunction; the third will identify pilot's intentions.

(a)	EQUIPMENT IDENTIFIER	REMARKS
	Alpha	Foil
	Bravo	B/400B
	Charlie	D-500A
	Delta	Ball Sampler
(b)	MALFUNCTION	
	Kilo	Inoperative
	Lima	Intermittently operative
(c)	INTENTIONS	
	Papa	Continue on track
	Romeo	Continue collection with reduced capability.

c. Charlie Report. During certain daylight hours and under favorable atmospheric conditions, it is possible to sight the debris cloud. This report provides HQ AFTAC with pertinent data concerning the debris cloud. Preparation instructions (See Figure 15-6):

Sequence

(1) Enter call sign

(2) Enter Latitude/Longitude

(3) Enter Time of Sighting

(4) Enter Altitude of cloud (to nearest 500 feet) (Base plus/minus).

(5) Enter Thickness (in feet).

(6) Enter Length (in nautical miles)

(7) Enter Width (in nautical miles)

(8) Enter Color

NOTE: Add Echo suffix to items (c) thru (f) if estimated.

d. Echo Report. Pilot will make this report at the beginning of the sampling track (IP) and to coincide with "ops normal" calls, not to exceed 90 minutes between reports. Request a phone patch direct to the designated AFTAC representative, if possible. Preparation instructions (See Figure 15-7):

(1) Enter call sign

(2) Enter latitude/longitude

(3) Enter time (Zulu)

(4) Enter altitude (base plus/minus)

(5) Enter wind direction/velocity

(6) Enter B/400B % deflection/scale

(7) Enter D-500 % deflection/scale

(8) Enter comments regarding sampler equipment status

NOTE: Report all B/400B, D-500A readings as percentage of full scale.

15-9. Sampling Equipment Data Sheet:

a. Purpose. Provides pertinent data for particulate and whole-air collections for each mission. In addition, they are used with the Rustrak chart to analyze the mission.

b. Preparation. Pilots will complete this form in flight and will deliver it with the corresponding Rustrak chart to the on-site AFTAC representative. Preparation instructions (see Figure 15-8):

SEQUENCE	DATA
1	Pilot's rank and surname.
2	Zulu date of takeoff.
3	Aircraft tail number (last three digits).
4	Zulu time of takeoff.
5	Zulu time of landing.
6	Zulu time starting a filter or ball.
7	Coordinates when a filter or ball started in degrees and minutes. (Cross-out non-appropriate cardinal points).
8	Zulu time stopping a filter or ball.
9	Coordinates when a filter or ball stopped in degrees and minutes. (Add cardinal points if different than item 7).
10	Altitude, base plus if necessary, to the nearest 500 feet when filter or ball ended.
11	True air speed when filter or ball ended.
12	True air temperature when filter or ball ended.
13	Wind direction in degrees and velocity at time filters ended.
14	Pressure, (pounds per square inch) indicated on P-5 system control pannel when a ball is stopped. Obtain reading prior to turning power off. If system automatically sequences use 2800 psi.

OLYMPIC RACE PREFLIGHT CHECKLIST

1. ME 5 amp circuit breaker (right CB panel - DEPRESSED).

2. Master Switch (MK IV Control Panel) - ON.

3. F-4 Foil - (Check Operation/Indicator Lites).

   a. Door Switch - CLOSED.

   b. Filter Indicator Lite - CHECK (No. 1 Illuminated)

   c. Filter Switch - UP.

   d. Filter Switch - DOWN.

CAUTION: Do not move filter up or down unless door closed lite is illuminated.

   e. Door Switch - OPEN.

   f. Door Switch - CLOSED.

4. P-5 Pressure Platform System.

   a. Sampler Power Switch - OFF.

   b. Sampler Ball Selector Switch - No. 1.

This system will not be operated during preflight. Check with ground crew if Sampler Ball Selector Switch is in any position other than No. 1.

5. B/400B/D-500A System:

   a. Air Sampling Power Switch - ON.

   b. B/400B Range Switch - SCALE No. 1.

   c. D-500A Function Switch - FUNCTION No. 2.

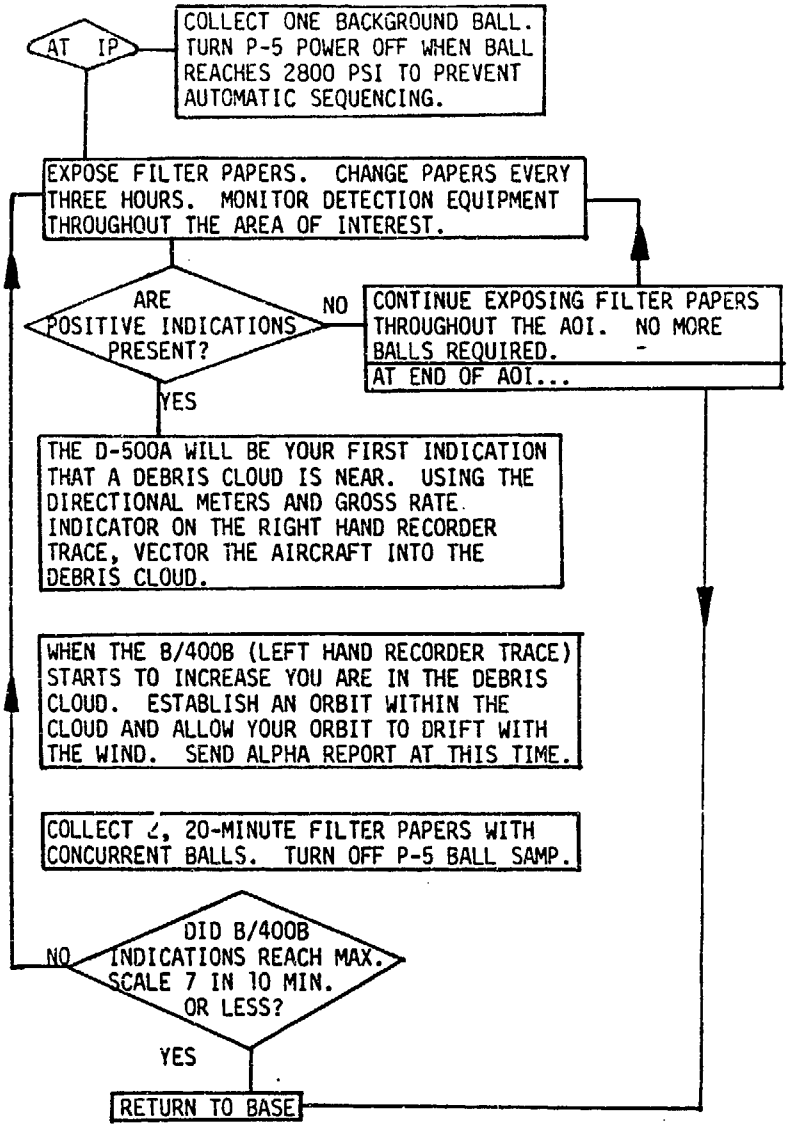
   d. Rustrak Recorder - CHECK (Both needles should have some deflection and the motor operating.)

   e. Directional Meters - CENTER (Use "Push to Turn" pots).

   f. B/400B Range Switch - SCALE No. 3.

   g. D-500A Function Switch - Function No. 3.

Figure 15-1. Sample of OLYMPIC RACE Preflight Checklist.



CHANGE FILTER PROCEDURES

Insure MARK IV Hand Control Master Switch is ON.

a. Door - Closed (light illuminated)
b. Filter - Up (light illuminated)
c. Filter Advance - Press button
d. Filter - Down (light illuminated)
e. Door - Open (light illuminated)
f. Record data on Flight Data Sheet

BALL START PROCEDURES

a. Power switch - ON
b. Record data on Flight Data Sheet

BALL STOP PROCEDURES

At 2800 PSI on Gauge, or after 1/2 Hour of Pumping

a. Record pressure on Flight Data Sheet
b. Power switch - OFF
c. Sampler switch - Select next ball
d. Record data on Flight Data Sheet

Figure 15-2. Sample of OLYMPIC RACE Event Checklist

Transmit inflight reports in the clear to OLYMPIC RACE operations using UHF (when in range) or HFSSB. Transmit the report as soon as practicable.

ALPHA REPORT (INFLIGHT CONTACT)

a. ALPHA REPORT/CALL SIGN_____
b. POSITION_____N/S_____E/W
c. TIME OF CONTACT_____
LOITER TIME AVAILABLE_____
*ALTITUDE (BASE +/-)_____
*WIND DIRECTION_____VELOCITY_____
d. PRECONTACT READINGS:
e. B/400B DEFLECTION_____/SCALE_____
f. D-500A CONTACT READINGS:
DEFLECTION_____/SCALE_____
g. INTENTIONS/REMARKS: (Use following)

FOR REMARKS:	USE:
ORBIT	ROMEO
SEARCH LOCAL AREA	SIERRA
CONTINUE TRACK	TANGO
RETURN TO BASE	UNIFORM

NOTE: Report all B/400B and D-500A readings as percentage of full scale.

BRAVO REPORT (MALFUNCTIONS)

BRAVO REPORT/CALL SIGN_____
a. POSITION_____N/S_____E/W
b. MALFUNCTION: EQUIP/MALFUNCTION/INTENT

FOR EQUIP:	USE:
FOIL	ALPHA
B/400B	BRAVO
D-500A	CHARLIE
BALL SAMPLER	DELTA
FOR MALFUNCTION:	USE:
INOPERATIVE	KILO
INTERMITTENTLY OPERATIVE	LIMA
FOR INTENTIONS:	USE:
CONTINUE TRACK	PAPA
CONTINUE COLLECTION	ROMEO

PERSONAL PROTECTIVE ACTIONS

At IP - Cover food and drink.

After Establish IFP - Reduce vent, tighten face seal.

Before Landing - Dump cabin pressure (below FL 250), leave faceplate down, gloves on, minimum vent.

Figure 15-2 (Continued). Sample of OLYMPIC RACE Event Checklist.

CHARLIE REPORT (VISUAL SIGHTING)

CHARLIE REPORT/CALL SIGN_____

a. POSITION_____N/S_____E/W

b. TIME_____Z

c. ALTITUDE OF CLOUD (BASE PLUS, TO NEAREST 500 ft)

_____

d. THICKNESS (IN FEET)_____

e. LENGTH (IN NAUTICAL MILES)_____

f. WIDTH (IN NAUTICAL MILES)_____

g. COLOR_____

NOTE: Add ECHO suffix if items "c" thru "f" are estimated.

ECHO REPORT (HOURLY RADIO CALL)

ECHO REPORT/CALL SIGN_____

a. POSITION_____N/S_____E/

b. TIME_____Z

c. ALT (Base Plus)_____WIND (D/V)_____

d. B/400B DEFLECTION/SCALE_____

e. D-500A DEFLECTION/SCALE_____

f. SAMPLER EQUIP STATUS_____

NOTE: REPORT B/400B AND D-500A READINGS AS PERCENTAGE OF FULL SCALE DEFLECTION.

FLIGHT DATA SHEET

PILOT: DATE: ACFT:
T/O: LDG:

Filter	Time	N/S	Position	E/W	Time	N/S	Position	E/W	Alt	T Temp	IAS	Wind
1												
2												
3												
4												
5												
6												
Ball											PSI x 1000	
1												
2												
3												
4												
5												
6												

REMARKS:

Figure 15-2 (Continued). Sample of OLYMPIC RACE Event Checklist.

OLYMPIC RACE BACKGROUND

AT LEVEL OFF:

a. CENTER DIRECTIONAL METERS. INSURE DRIFT SIGHT PANEL "MASTER" SWITCH IS ON.

b. BEGIN 1st PAPER (DURATION 1 HOUR)
**DOOR SWITCH OPEN

c. BEGIN 1st BALL (DURATION NOT TO EXCEED 2800 PSI or 1/2 HOUR)

d. RECORD DATA ON FLIGHT DATA SHEET

e. TRANSMIT ECHO REPORT

f. AT 2800 PSI or 1/2 HOUR TERMINATE BALL, RECORD DATA. (SEE PROCEDURES BLOCK)

1 HOUR AFTER LEVEL-OFF
a. CHANGE FILTER (SEE PROCEDURES BLOCK)

b. BEGIN 2nd BALL (SEE PROCEDURES BLOCK)

c. TERMINATE BALL AT 2800 PSI or 1/2 HOUR (SEE PROCEDURES BLOCK)

d. AT END OF 2nd HOUR;
-CLOSE DOOR
-RECORD DATA
-CLIMB TO FL_____
-TRANSMIT ECHO REPORT

AT 2nd FLIGHT LEVEL
a. CENTER DIRECTIONAL METERS

b. CHANGE FILTER (SEE PROCEDURES)

c. BEGIN 3rd BALL (SEE PROCEDURES)

d. TERMINATE BALL AT 2800 PSI or 1/2 HOUR (SEE PROCEDURES)

1 HOUR AFTER LEVEL-OFF AT 2nd FLIGHT LEVEL
a. CHANGE FILTER (SEE PROCEDURES)

b. BEGIN 4th BALL (SEE PROCEDURES)

c. TERMINATE BALL AT 2800 PSI or 1/2 HOUR (SEE PROCEDURES)

d. AT END OF THIS HOUR:
-CLOSE DOOR
-RECORD DATA
-CLIMB TO FL_____
-TRANSMIT ECHO REPORT

AT 3rd FLIGHT LEVEL
a. CENTER DIRECTIONAL METERS

b. CHANGE FILTER (SEE PROCEDURES)

c. BEGIN 5th BALL (SEE PROCEDURES)

d. TERMINATE BALL AT 2800 PSI Or 1/2 HOUR (SEE PROCEDURES)

CHANGE FILTER PROCEDURES

Insure Drift Sight Master Switch is ON.

a. Door - Closed (light illuminated)
b. Filter - Up (light illuminated)
c. Filter Advance - Press button
d. Filter - Down (light illuminated)
e. Door - Open (light illuminated)
f. Record data on Flight Data Sheet

BALL STOP PROCEDURES

At 2800 PSI on Gauge, or After 1/2 Hour of Pumping.

a. Record pressure on Flight Data Sheet
b. Power switch - OFF
c. Sampler switch - Select next ball
d. Record data on Flight Data Sheet

Transmit inflight reports in the clear to OLYMPIC RACE operations using UHF (when in range) or HFSSB. Transmit the reports as soon as practicable.

ALPHA REPORT (INFLIGHT CONTACT)

a. ALPHA REPORT/CALL SIGN_____
b. POSITION_____N/S_____E/W
c. TIME OF CONTACT_____Z
LOITER TIME AVAILABLE_____
*ALTITUDE (BASE +/-)_____
*WIND DIRECTION_____VELOCITY_____
d. PRECONTACT READINGS:
B/400B DEFLECTION_____/SCALE_____
D-500A DEFLECTION_____/SCALE_____
e. B/400B CONTACT READINGS:
DEFLECTION____/SCALE____/MINUTES____
f. D-500A CONTACT READINGS:
DEFLECTION_____/SCALE_____
g. INTENTIONS/REMARKS: (Use following)

FOR REMARKS:	USE:
ORBIT	ROMEO
SEARCH LOCAL AREA	SIERRA
CONTINUE TRACK	TANGO
RETURN TO BASE	UNIFORM

NOTE: report all B/400B and D-500A readings as percentage of full scale.

BRAVO REPORT (MALFUNCTIONS)
BRAVO REPORT/CALL SIGN_____
a. POSITION_____N/S_____E/W
b. MALFUNCTION: EQUIP/MALFUNCTION/INTENT

FOR EQUIP:	USE:
FOIL	ALPHA
B/400B	BRAVO
D-500A	CHARLIE
BALL SAMPLER	DELTA
FOR MALFUNCTION:	**USE:**
INOPERATIVE	KILO
INTERMITTENTLY OPERATIVE	LIMA
FOR INTENTIONS:	**USE:**
CONTINUE TRACK	PAPA
CONTINUE COLLECTION WITH REDUCED CAPABILITY	ROMEO

Figure 15-3. Sample of OLYMPIC RACE Background Checklist.

1 HOUR AFTER LEVEL-OFF AT 3rd FLIGHT LEVEL
a. CHANGE FILTER (SEE PROCEDURES)

b. BEGIN 6th BALL (SEE PROCEDURES)

c. TERMINATE BALL AT 2800 PSI or 1/2 HOUR (SEE PROCEDURES)

d. AT END OF THIS HOUR:
-CHANGE FILTER (SEE PROCEDURES)
-TRANSMIT ECHO REPORT
-RETURN TO BASE

BALL START PROCEDURES
a. POWER SWITCH - ON
b. RECORD DATA ON FLIGHT DATA SHEET

Figure 15-3. (Continued). Sample of OLYMPIC RACE Background Checklist.

ALPHA REPORT (INFLIGHT CONTACT)

ALPHA Report/Call Sign _____(1)_____

a. Position ___(2)_____N/S _____E/W

b. Time of Contact ___(3)___Z / Loiter Time Avl _____

c. Altitude (Base plus) ___(4)_/ Wind Direction _____/ Velocity _____

d. Pre-Contact Readings. B/400B Deflection ___(5)_____/

Scale _____, D-500A Deflection _____/ Scale _____.

e. B/400B Contact Readings, Deflection ___(6)_____/

Scale _____/ Time (minutes) _____.

f. D-500A Contact Readings, Deflection ___(7)_____/

Scale _____.

g. Intentions/Remarks: (Use following Identifiers) (8)

IDENTIFIER	REMARKS
ROMEO	Orbit
SIERRA	Search local area
TANGO	Continue track
UNIFORM	Return to base

NOTE: Report all B/400B, D-500A readings as percentage of full scale.

Figure 15-4. Sample of ALPHA Report (Inflight Contact).

BRAVO REPORT (MALFUNCTIONS)

BRAVO Report/Call Sign ___(1)_____

a. Position ___(2)____N/S _____E/W

b. Malfunction: (From the following) Equip/Malf/Intent (3)

1. Equipment Identification:

IDENTIFIER	REMARKS
ALPHA	FOIL
BRAVO	B/400B
CHARLIE	D-500A
DELTA	BALL SAMPLER

2. Equipment Status:

IDENTIFIER	REMARKS
KILO	Inoperative
LIMA	Intermittently Operative

3. Intentions:

IDENTIFIER	REMARKS
PAPA	Continue Track
ROMEO	Continue Collection With Reduced Capability

Figure 15-5. Sample of BRAVO Report (Malfunctions).

CHARLIE REPORT (VISUAL SIGHTING)

CHARLIE Report/Call Sign ___(1)_____

a. Position ___(2)_____N/S _____E/W

b. Time ___(3)_____ Z

c. Altitude of Cloud (Base plus, to nearest 500 ft) (4)

_____

d. Thickness (in feet) ___(5)_____

e. Length (in nautical miles) ___(6)_____

f. Width (in nautical miles) ___(7)_____

g. Color ___(8)_____

NOTE: Add ECHO suffix if items "c" thru "f" are estimated.

Figure 15-6. Sample of CHARLIE Report (Visual Sighting).

ECHO REPORT (HOURLY RADIO CALL)

ECHO Report/Call Sign_____(1)_____

a. Position_____(2)_____N/S_____E/W

b. Time_____(3)_____Z

c. ALT (Base Plus)____(4)____Wind (D/V)____(5)____

d. B/400B Deflection/Scale_____(6)_____

e. D-500A Deflection/Scale_____(7)_____

f. Sampler Equip Status_____(8)_____

NOTE: Report B/400B and D-500A readings as percentage of full scale deflection.

Figure 15-7. Sample of ECHO REPORT (Inflight Status)

PILOT: (1) DATE: (2) ACFT: (3)
T/O: (4) LDG: (5)

Filter	TIME	N/S Position	E/W	Time	N/S Position	E/W	Alt	T Temp	IAS	Wind
1	(6)	(7)		(8)	(9)		(10	(11, 12)	(13)	
2										
3										
4										
5										
6										

Ball PSI x 1000

1	(14)
2	
3	
4	
5	
6	

REMARKS:

Figure 15-8. Sample of U-2 Pilot Data Sheet.

OFFICIAL

RICHARD J. O'LEAR, Colonel, USAF
Commander

WALLACE L. HUFFAKER, CMSgt, USAF
Director of Administration

4 Attachments
1. Disposition Instructions
2. Packaging and Shipping Instructions
3. Letter of Instructions to Courier
4. CENR 55-3 Distribution

SUMMARY OF CHANGES
Incorporates changes received from the field. Changes I-2 and A mission U-1 exposure patterns. Specifies cloud sizing procedures. Changes PONY EXPRESS collection procedures. Clarifies and expands AUF codes and handling instructions for contaminated ARE. Updates instructions for preparation of forms.

DISPOSITION INSTRUCTIONS

Table A-1
Documentation Disposition Standards

If documents are or pertain to	Consisting of	Which are	Then identify on your Form 80 as	And destroy
Source, Support or Control Data	CEN Form 13 CEN Form 32	Used to facilitate or control work in progress, and not needed for record purposes	Table 11-1, R-4, AFM 12-50	After use
	CEN Form 14 CEN Form 19 CEN Form 40 CEN Form 47 CEN Form 72 B/400 and D-500 Rustrak Charts			After one year from date of preparation
	CEN Form 7 CEN Form 8 CEN Form 9 CEN Form 15 CEN Form 25 CEN Form 30 CEN Form 38 CEN Form 80			After purpose has been served
Reports, Controlled and Uncontrolled	Inflight Report Sphere Shipment Reports PROREP(s) Alert Summary Reports	At preparing, monitoring, or intermediate activities or information copies at any level.	Table 11-1, R-8, AFM 12-50	When no longer needed for managerial purposes

PACKAGING AND SHIPPING INSTRUCTIONS

1. Use the following procedures when shipping classified samples or when required to insure sample integrity.

a. Sealing High-Speed Boxes.

(1) A completed AF Form 310, Document Receipt and Destribution Certificate, will be placed between the lead liner and the outer case.

(2) The box car seal number will be recorded on the AF Form 310.

(3) An "EXEMPT FROM CENSORSHIP" label will be taped to the outside of the box. (NON-ARFCOS)

(4) When the courier signs the AF Form 12 (Accountable Container Receipt) they will be given the courier identification letter (format is contained in AFR 205-1), the informal letter (CENR 55-3, Atch 3), and the courier orders.

b. Sphere Cases.

(1) An address label will be placed on each sphere case.

(2) An "EXEMPT FROM SENSORSHIP" label will be taped to the outside of the sphere case.

c. Packaging Standards.

(1) All packing material will be opaque and taped with gummed KRAFT paper tape.

(2) The inner and outer wrapper will be labeled with the forwarding and return addresses.

(3) The originator control number will be located on the inner and outer wrapper.

(4) Classification markings will be IAW AFR 205-1.

(5) Plastic or steel bands may be used to secure large boxes.

2. Transportation of Samples. The following procedures will be used to insure expeditious handling of samples.

a. Contact TMO for assistance.

b. Use the following shipping address:

FB4300/DL Building 628
McClellan AFB, CA 95652-5000

c. Ship transportation priority 01/999 IAW HQ USAF COMBAT CATCH Plan.

d. For shipment of radioactive material provide TMO with the following: Two copies of the HQ USAF/LETT waiver and Item Manager's certification for the sample container. (NOTE: Applicable transport index is determined IAW AFR 71-4, chapter 12).

e. To insure spheres will be accepted for transportation via commercial air they should be shipped individually in lieu of being consolidated into bulk shipments.

f. Transportation Account Code (TAC). This code identifies the appropriate DOD agency and transportation account charged when reimbursement is required for the movement of material through government-controlled transportation facilities. TAC F8A0 will be used for spheres and seawater bottle shipments.

g. Fund Citation. This is needed when shipment will move via commercial means. The fund citation will be provided to the project officer by the area or division responsible for the specific operations.

h. Provide the TAC code or fund citation to TMO at the time the property is turned in for shipment.

i. Obtain a signed copy of the DD Form 1149 or 1348-1 from TMO which reflects date and time the shipment was processed through TMO.

j. Additional sphere handling procedures are provided in HQ USAF COMBAT CATCH Plan and TO 9P1-2-17-2.

k. Copies of these instructions may be reproduced for distribution to appropriate personnel.

3. Sphere/Maritime Sample Shipment Report. This report will be submitted IAW paragraph 11-3.

Letter of instructions to courier and courier departure message

1. Mission. You have been designated to act in an official capacity as a courier for _____. It is your responsibility to safeguard and deliver accountable material from _____ to _____. Your mission objective is to safely convey the material in your custody to its destination in the fastest manner possible and to avoid foreign customs examination of the material.

2. Departure Procedures:

a. Documents required. Prior to departing, you will insure that the following documents are in your possession:

(1) International Certificate of Vaccination (PHS Form 731).

(2) TDY orders, including excess baggage authorization.

(3) Armed Forces Identification Card (DD Form 2AF).

(4) Courier Letter.

(5) Outer surface of each item concerned is annotated: OFFICIAL UNITED STATES AIR FORCE COMMUNICATIONS, EXEMPT FROM CENSORSHIP, followed by the official signature of the officer who signed the courier letter describing the material.

(6) Airline tickets if military transportation is not available. Insure that 300 pounds of excess baggage is authorized.

b. Clothing Requirements. (As required).

c. Transportation. Transportation Request (TR) and plane tickets will be obtained for you and explained to you prior to your departure. Safeguard the copy of the TR (SF 1169) given you since it must be filed with your travel voucher upon completion of travel.

d. Funds. Every effort will be made to minimize the duration of your TDY. You must be prepared to defray the costs of food and lodging for this period. Maintain an accurate record of all reimbursable expenses by date, nature, and amount.

e. Firearms. The carrying of firearms is prohibited.

f. Security. You are expected to exercise self-censorship as necessary. It is requested that you refrain from seeking any information as to the nature of your accountable material and avoid speculations or gossip concerning it.

3. Courier Responsibilities: (As required)

a. Courier package(s). Contract personnel will notify you of your departure time. They will transfer a courier package(s) to you and require you to indicate receipt by signing an AF Form 12 (Accountable Container Receipt). The package(s) entrusted to you may be heavy wooden and metal carrying case(s). Prior to receipting for the packages(s) insure that the case (Hi-Speed boxes only) is sealed and that the seal number is accurately entered on the AF Form 12. You will insure that the censorship exemption certificate is affixed to each courier package.

b. Safeguarding of material. You will keep the courier package(s) in your personal custody and under continual surveillance at all times, except as noted below:

(1) You should request airline officials to permit you to take the case(s) aboard the aircraft. If such permission is refused or obviously not feasible, you may stow the case(s) in aircraft compartments. In such an event, you will witness storage of the material and securing of the compartment, and will emplane only when the aircraft is ready for departure. You will deplane immediately at each enroute stop to insure that the material is not erroneously off-loaded or otherwise tampered with. (NOTE: It is recommended that you advise airline representatives of your courier status and request their assistance in meeting the above requirements.) All such requests should be tendered with tact and diplomacy.

(2) If you are unable to follow your itinerary or if the material is lost, stolen, or otherwise subjected to compromise enroute, you will immediately report the circumstances by the most rapid means available to the nearest US Military Commander or US Government Activity.

c. Emergency Destruction of Material. If unauthorized seizure or other compromise of the couriered materials appears imminent and cannot be averted, you will break the seal and destroy the contents by burning. If such emergency destruction is necessary a full report by telephone or message will be submitted to the nearest US Military Commander or US Government Activity. This report will include:

(1) Reason for destruction.

(2) Location of destruction.

(3) Identification of carrying case by seal serial number.

(4) Method of destruction.

(5) Extent of destruction of items not completely destroyed.

4. Enroute to your final destination.

a. Arrival in CONUS. At first port of call in the CONUS and as soon as practicable after completion of processing fundamentals, attempt to obtain a firm ETA to Sacramento. Telephone this ETA to Tech Ops Div, McClellan AFB, Area Code 916, telephone 643-2699 (Autovon 633-2699). Any change in ETA because of flight cancellation or delays should be telephoned to McClellan AFB as soon as practicable.

b. Arrival in Los Angeles. If your aircraft lands in Los Angeles, you will be required to clear US customs at this point. Identify yourself as an official courier and request that airline officials permit you to accompany the baggage cart to the terminal area. Insure that the courier package(s) is properly sealed, identified with a customs exemption form and under your control at all times. After clearing customs either reboard the aircraft for San Francisco or proceed to a direct flight to Sacramento. (NOTE: If there is a substantial delay in obtaining connections direct to Sacramento, proceed on to San Francisco so that surface transportation can be used).

c. Arrival in San Francisco. If a connecting flight to Sacramento is to be used, proceed to the appropriate departure area. If an excessive delay (over 4 hours) is encountered in obtaining a connecting flight call 916-643-2699 (Tech Ops Div) to establish ground transportation requirements.

d. Arrival in Sacramento. If you arrive in Sacramento via auto, obtain the necessary directions to McClellan AFB. If you arrive via airplane call McClellan AFB 643-2699 and state that you are a courier awaiting transportation to your delivery point. Upon arrival at Building 628, McClellan AFB, ring the buzzer for the CQ. The CQ will contact the duty officer who in turn will designate an individual to receive the courier package(s). Insure that you receive a signed AF Form 12 before relinquishing custody of materials.

5. Return to _____.

a. Departure. Request directions to the base commercial transportation section and proceed there to obtain necessary TRs for return travel.

b. Arrival at _____. Upon return to duty, proceed to _____ for debriefing.

6. Courier Departure Message.

a. Purpose. To provide particulars on the courier, the material being couriered, and furnish the courier's itinerary to the recipient of the material.

b. Submission Requirement:

(1) A courier departure message will be submitted whenever a courier is utilized to transport samples from a deployed location to a laboratory facility.

(2) The message will be transmitted to the action addressee by immediate precedence with information copies to headquarters/DOR and TNT and other units along the courier route.

(3) This message will be transmitted within two hours after the courier has departed.

c. Preparation Instructions:

SEQUENCE	DATA
1	Name of courier
2	Grade of courier
3	Courier's departure point
4	Local DTG of courier's departure
5	Name of carrier
6	Flight Number/Aircraft Type/Tail Number
7	Destination
8	Local DTG of scheduled arrival
9	Mission identifiers which samples were collected

DISTRIBUTION

Organization	Number of Copies
JCS/JRC, Wash DC 20330	1
HQ USAF, Wash DC 20330	
IN	1
INYST	2
XOORZ	1
XOKC	2
PAX	1
USCINCPAC/J-3, Camp H M Smith, HI 96861	1
CINCLANT/J-3, Norfolk VA 23511	1
USCINCEUR/J-3, APO New York 09128	1
USAFSO/J-3, APO Miami 34001	1
HQ PACAF, Hickam AFB, HI 96853	
DO	1
DOX	3
DOOR	1
CINCPACFLT/3311, Pearl Harbor HI 96860	1
HQ USAFE/DOB, APO New York 09012	2
HQ AFCC/TPP, Scott AFB, IL 62225	2
HQ MAC, Scott AFB, IL 62225	
DOOS	1
XPPT	1
HQ SAC, Offutt AFB, NE 68113	
DOTU	1
DORS	1
LGXR	1
DOS	1
AAC/XPR, Elmendorf AFB AK 99506	1
AFLC/LOJ, Wright-Patterson AFB, OH 45433	1
HQ ESC/DOX, San Antonio, TX 78243	1
AWS/DO, Scott AFB, IL 62225	1
5AF/DO, APO San Francisco 96328	1
15AF/DO, March AFB, CA 92508	2
COMTHIRDFLT/N311, Pearl Harbor, HI 96860	1
Defense SMAC, Ft Meade, MD 20755	1
DIA, Wash DC 20301	
DC-7B	1
DT-1	1
FTD/XOOP, Wright-Patterson AFB, OH 45433	1
NISC/40, 4301 Suitland Rd, Wash DC 20390	1
Naval Polar Oceanography Center, 4301 Suitland Rd Wash DC 20390	1

FLENUMOCEANCEN, Monterey, CA 93940	1
NCPAC, Pearl Harbor, HI 96861	1
USAFSOAD/DOOX, APO Miami 34001	1
7AD/DO, APO New York 09012	1
7BMW/DOO/DONO, Carswell AFB, TX 76127	4
3AD/DO, APO San Francisco 96334	1
8AF/DOOBV, Barksdale AFB, LA 77110	1
19AD/DO Carswell AFB, TX 76127	1
9SRW/DOXU, Beale AFB, CA 95903	3
41RWRW/DOO, McClellan AFB, CA 95652	1
23AF, Scott AFB, IL 62225	
DOX	1
DOO	1
DORP	1
33ARRS/DO, APO San Francisco 96239	1
41ARRS, McClellan AFB, CA 95652	1
41CAMS, McClellan AFB, CA 95652	1
53WRS/DO, Keesler AFB, MS 39534	1
54WRS/DO, APO San Francisco 96334	1
55WRS/DO, McClellan AFB, CA 95652	1
99 Strat Recon Sq/DO, Beale AFB, CA 95903	1
605MASS/LG, APO San Francisco 96334	1
316TAG/DOCP, APO San Francisco 96328	1
316FMS/LG, APO San Francisco 96328	1
Tech Ops Div/DO, McClellan AFB, CA 95652	38
Tech Ops Div/LG, McClellan AFB, CA 95652	2
HQ PACTOA/DO, Wheeler AFB, HI 96854	2
HQ EURTOA/DO, APO New York 09332	2
ESMC/RSO, Patrick AFB, FL 32925	1
Det 2, 9SRW/CC, APO San Francisco 96570	1
Det 8, 2762 Logistics Sq/ME, Robins AFB, GA 31093	1
Det 11, 2 WE Sq/CC, Patrick AFB, FL 32925	1
Det 407/DO, APO San Francisco 96328	5
Det 460/DOR, Eielson AFB, AK 99702	3
OL A 41RWRW, APO San Francisco 96328	1

OL B 41RWRW, Eielson AFB, AK 99702	1
KTTC (MAA), Keesler AFB, MS 39534	1
HQ AFTAC, Patrick AFB, FL 32925	
LG	2
IG	1
TN	1
WE	1
DOR	20
DOI	1