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Maintenance

AIRCRAFT FLYING AND MAINTENANCE
SCHEDULING PROCEDURES

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This instruction implements AFD 21-1, *Managing Aerospace Equipment Maintenance* and AFI 21-101, *Aerospace Equipment Maintenance Management*. It establishes policy and assigns responsibility to develop and execute aircraft flying and maintenance programs. This publication applies to HQ AFSPC, subordinate units, contractors and all activities responsible for the maintenance, operation and utilization of AFSPC assigned aircraft. This publication does not apply to Air Force Reserve Command (AFRC) nor Air National Guard (ANG) units. For waiver actions, see paragraph 1.7. Send comments and suggested improvements to this instruction on AF Form 847, **Recommendation for Change of Publication**, to HQ AFSPC/LC-CSO, 150 Vandenberg Street Suite 1105, Peterson AFB CO 80914-4470.

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Chapter 1

GENERAL RESPONSIBILITIES AND POLICY

1.1. Responsibility. Commanders at all levels must comply with this publication. The term maintenance supervision (MS) in this instruction refers to helicopter maintenance Functional Commander (FC) and contract maintenance supervisor or superintendent.

1.2. Policy. This instruction provides procedures and audit methods for units to develop their flying and maintenance scheduling program and analyze their effectiveness. It is intended to be a local tool for operations and maintenance activities to use in support of their programs. Reviewing reasons for deviating from the flying and maintenance schedule will allow wing commanders, group commanders, squadron commanders, flight commanders and staff to evaluate the flying program and scheduling procedures of the unit. Higher headquarters (HHQ) management attention is directed to those areas beyond a unit's control.

1.3. Objectives. This instruction allows units the flexibility to meet their mission requirement through effective flying and maintenance scheduling. Scheduling evaluation procedures provide an audit trail for identifying problems in flying and maintenance schedules. The primary purpose of unit scheduling assessment is to evaluate the effectiveness of the unit's flying program in support of combat capability.

1.4. Applicability. This publication is applicable to all Air Force Space Command (AFSPC) units possessing or supporting AFSPC aircraft, including contractor maintained aircraft.

1.5. Reporting Requirements. Units will use the Core Automated Maintenance System (CAMS) reporting procedures. This includes contractor-maintained, wing assigned aircraft.

1.6. Standards. Standards and goals assist commanders in assessing the effectiveness of unit performance. The AFSPC aircraft maintenance scheduling effectiveness (MSE) standard is 95 percent. There are two aircraft flying scheduling effectiveness standards developed by HQ AFSPC/LCM, approved by HQ AFSPC/LC, and provided to the user each September. Overall Flying Scheduling Effectiveness (FSE) is measured using all recorded deviation data. Operations and Maintenance (OP-MT) FSE includes deviations only in the maintenance and operations categories.

NOTE: The two FSE standards will be developed after a minimum of one-year FSE data collection.

1.7. Waivers. Waiver authority for this publication rests with HQ AFSPC/LCM. AFSPC waiver requests are submitted by the MXG/CC (OG/CC at 30SW) for resolution.

1.8. Standardization. If necessary, wings will develop a supplement to this instruction standardizing scheduling practices for the wing and each assigned mission design series (MDS). Minimum topics will include standardized flying windows, specific surge rules, quiet hour policies, cross country takeoffs and returns, minimum turn times, crew ready times, etc. Supplements will include local schedule input and publishing deadlines along with any wing unique requirements. However, schedules will be published NLT 1200 Friday preceding the affected week.

1.9. Airframe Capability and Scheduling. To ensure accurate projection of operations and maintenance capacity, units will compute airframe capabilities using only the number of primary aerospace vehicle inventory (PAI) aircraft assigned - do not include backup aerospace vehicle inventory (BAI) or attrition reserve aircraft. Operational and training schedules will be based solely on the capability of PAI aircraft to execute the schedule.

1.10. Alert Aircraft. MS will ensure aircraft entering or coming off alert are managed to avoid Hangar Queen candidacy as a result of extended idle alert periods. When requested, maintenance data systems analysis (MDSA) will review sortie performance and reliability trends of aircraft coming off alert.

Chapter 2

FLYING AND MAINTENANCE SCHEDULING PROCEDURES

2.1. Planning Cycle. All AFSPC units will comply with the operational and annual maintenance planning cycles, flying hour allocation and scheduling (quarterly, monthly and weekly) programs IAW AFI 21-101 (chapter 15) as well as associated AFSPC supplements/instructions.

2.2. Weekly Flying Schedule in CAMS. All AFSPC units will load the weekly flying in CAMS via screen 341-OEL NLT 1600 Friday preceding the affected week.

2.2.1. HQ AFSPC/LC-CSO will provide CAMS training as necessary or requested by units, in accordance with contract provisions.

2.3. Changes to the Weekly Schedule:

2.3.1. Types:

2.3.1.1. Pen-and-Ink. The intent of Pen and Ink changes is to allow minor changes to the schedule, such as, tail numbers, configuration and changes that may need to be made because of aircraft availability. Pen and Ink changes are not intended to be used as a tool to extend the weekly scheduling process. Only minor changes such as tail numbers, take off/landing times or configuration changes should be made.

2.3.1.1.1. Pen-and-ink changes to next week's schedule prior to 1600 hours local, Friday are authorized. They are non-reportable and become part of the printed weekly flying schedule. An AF Form 2407, **Weekly/Daily Flying Schedule Coordination**, or MAJCOM approved electronic means, is required stating the changes are pen-and-ink.

2.3.1.2. Interchanges (Tail Number Swaps). Interchanges should be used to prevent reconfigurations and unnecessary expenditures of work hours when the prime aircraft is not mission-capable by its scheduled takeoff time. Every effort is made to make the aircraft interchanges at the daily maintenance scheduling meeting the day prior to the aircraft scheduled flight and entered on the AF Form 2407. All interchanges made at the daily maintenance scheduling meeting are entered on an AF Form 2407 for audit and analysis purposes.

2.3.1.3. Configuration. Configurations will be finalized at the daily maintenance scheduling meeting and changes to the printed schedule will be documented on an AF Form 2407. To prevent excessive expenditures of work hours, configuration changes made after the daily maintenance scheduling meeting require an AF Form 2407 coordinated through the required agencies.

2.3.2. Procedures. Any change to the printed schedule will require an AF Form 2407 with the following exceptions: 1) A change to the original printed takeoff or landing time of 15 minutes or less. 2) A change of aircrew names, ranges, or airspace.

2.3.2.1. Changes made during the daily maintenance scheduling meeting also require an AF Form 2407. The agency (helicopter operations or helicopter maintenance (HM)) requesting the change initiates the AF Form 2407 and coordinates it through the FC (or designated representative), contract maintenance supervisor/superintendent, flight operations officer, and affected support agencies. (i.e. AGE, fuels, corrosion, etc.)

2.3.2.2. After coordination, the original AF Form 2407, is filed in the plans, scheduling, and documentation (PS&D) functional area and will be used for deviation accounting/reporting. AF Forms 2407 will be disposed of IAW *USAF Records Disposition Schedule*.

2.3.2.3. HM PS&D functions will input all Pen-and-ink changes in CAMS operational events subsystem using procedures in AFCSM 21-565V2, *Operational Event Subsystem*. Additionally, the PS&D function will input all subsequent schedule changes, including AF Form 2407 coordinated schedule changes, into CAMS. The maintenance debrief function will load all sorties considered "flown as scheduled" (i.e. FCF/OCF, X/C returns, etc.).

NOTE: Use of the AF Form 2407 does not negate the recording of deviations.

2.3.3. **AF Form 2407 Approval Authority.** All AF Form 2407 changes that add aircraft or sorties or increase the flying window require both OG and MXG commander (or designated group level representative) approval. All other AF Form 2407 changes will be approved by the affected flight commander/functional commander (or designated representatives). The FC (or designated representative) will coordinate higher headquarters directed taskings. Electronic coordination is acceptable provided receipt is acknowledged and the sender enters the name of the person notified and the date/time on the AF Form 2407.

Chapter 3

FLYING SCHEDULING EFFECTIVENESS

3.1. Purpose. This chapter defines flying schedule deviations and provides formulas for computing flying scheduling effectiveness.

3.1.1. A cornerstone of successful flying scheduling and execution is an understanding of how the schedule is executed versus how it was planned to be executed. These differences in scheduled versus actual events, are only recorded in the execution phase of the scheduling process and are called deviations. Deviation data must be recorded so that follow-up analysis can identify the appropriate corrective actions if any are needed. Without deviation data, this analysis is impossible. Deviation data recording and analysis is the beginning of the process that will in the end, improve unit's flying operations. The HM unit is responsible for documenting deviations to the weekly flying schedule and determining the cause for each deviation. Deviations must be coordinated with the appropriate agency before being assigned to a specific category. Schedule deviations that result from a sequence of events will be assigned a primary cause. A determination of the primary cause will be made by the parties involved to arrive at a joint unit position. The unit operations officer and MS will monitor deviations to ensure they meet the criteria in this publication. When conflicts arise, leadership of involved units will resolve them at the lowest level. All deviations will be recorded as described in this publication.

3.2. Requirements. Flying scheduling effectiveness computation and deviation recording are required for all AFSPC assigned aircraft. Reporting procedures are contained in [Chapter 6](#) of this publication.

3.3. Flying Schedule Deviations:

3.3.1. Schedule Deviations apply to the printed weekly flying schedule, even though a coordinated change is accomplished using an AF Form 2407. When a unit coordinates a change to the printed weekly flying schedule, using an AF Form 2407, the unit is informing everyone of the changed information and deviations will be recorded as appropriate. Multiple deviations will not be recorded against a single line entry except for (a) additions that air abort or (b) additions that cancel, (c) added sorties that take-off late, and (d) late take-offs that air abort. The AFTO Form 781, **ARMS Aircrew/Mission Flight Data Document**, is the official source document for takeoff and landing data. For all deviations, the person recording the deviations in CAMS will provide a detailed explanation in the remarks section and a Job Control Number/Event ID in CAMS screen 350, if applicable. Flying schedule deviations fall into one of the following categories (See [Table 3.1](#) for common deviations):

3.3.2. **Ground Deviations.** Ground deviations are events occurring before aircraft takeoff. All ground deviations are recorded in CAMS and used in flying scheduling effectiveness calculations unless otherwise noted. Specific ground deviations are:

3.3.2.1. Addition (AD). An aircraft/sortie added to the schedule not previously printed on the weekly schedule, will be recorded against the agency (OP, MM, MX, HQ, SF) requesting the additional sortie or aircraft. Functional Check Flights (FCF) and Operational Check Flights (OCF) whose primary purpose is to perform maintenance checks are not additions. FCF/OCF sorties and sorties originating off-station without home-unit support will be considered "flown as scheduled" without recording deviations.

NOTE: All additions will be coordinated using the AF Form 2407, and approved IAW [paragraph 2.3.3](#).

3.3.2.2. Cancellation (CX). An aircraft or sortie that is removed from the printed schedule for any reason. For hard line sorties (sorties supporting other defense customers), cancellations occur when it is determined the originally scheduled mission cannot be met. For training sorties, if the sortie can launch and recover during the squadron's flying window and perform its original mission with the original crew, a cancellation is not recorded. If any sortie does not launch within the late takeoff criteria, a late takeoff is recorded.

3.3.2.3. Early Takeoff (ET). An early takeoff is a scheduled sortie launching more than 30 minutes prior to the published takeoff time.

3.3.2.4. Ground Abort (GA). A ground abort is an event after crew show time preventing a "crew ready" aircraft from becoming airborne. Ground aborts will be recorded to the responsible agency or condition that caused the aircraft to abort. Ground aborts are categorized as maintenance (GAA, GAB, GAC), operations, HHQ, weather, sympathy, and other, IAW [Table 6.3](#). A ground abort by itself is not a deviation, but can cause a deviation such as canceled sortie or late take-off. Ground aborts on FCFs or OCFs will be recorded in CAMS, but not used when computing FSE. Ground aborted aircraft flown by a spare aircraft will not be included when computing FSE.

3.3.2.4.1. If a ground aborted aircraft is replaced by a spare, and the spare can meet the mission requirements, the original aircraft will be coded as a ground abort. **NOTE:** This is not used in computing FSE.

3.3.2.4.2. If the original aborted aircraft is launched on the original scheduled mission, but exceeds the 15-minute late takeoff criteria, the sortie will be recorded as a late takeoff.

3.3.2.5. Late Takeoff (LT). A late takeoff occurs when a scheduled sortie becomes airborne more than 15 minutes after the scheduled takeoff time. If the printed tail number is a ground abort and is replaced with a spare that takes off late, only the late take-off is computed in FSE.

3.3.2.6. Spare (SP). A spare is a designated aircraft on the printed schedule to be used in case a scheduled aircraft cannot fly its scheduled sortie. Spares can include aircraft that have canceled, aborted, flown earlier or an aircraft released after FCF/OCF. Do not count printed spares flown in scheduled lines as deviations when computing FSE.

3.3.2.7. Interchange/Tail Number Swap (TS). Interchanges are changes to the printed flying schedule involving aircraft tail numbers printed on that day's schedule. Interchanges may be made up to crew ready time. The maintenance operations center (MOC) function must be notified of all interchanges. Record all interchanges in CAMS via screen 343-OES. Do not count Interchanges/Tail Number Swaps as deviations when computing FSE. Below are specific examples of interchanges:

3.3.2.7.1. Changing aircraft in printed line numbers with printed spare aircraft.

3.3.2.7.2. Changing aircraft in printed line numbers to different printed line numbers.

3.3.2.7.3. Changing aircraft in printed line numbers to aircraft after release from OCF/FCF or XC return aircraft.

3.3.3. **Air Deviations.** Air deviations are events occurring after takeoff. They are recorded in CAMS but are not included in flying scheduling effectiveness calculations. Ground deviations take precedence over air deviations when only one deviation can be loaded in CAMS. Air deviations fall into the following categories:

3.3.3.1. Air Abort (AA). An aircraft/sortie that cannot complete its mission for any reason. Air aborts are considered a sortie flown when reporting total sorties flown. Air aborts will be coded to the agency or condition that caused the aborted mission. An air abort will not be recorded when malfunctions occur during the “Before Takeoff Checklist” portion of helicopter sorties.

NOTE: Effective mission decisions will be made by operations. A non-effective mission does not necessarily mean an air abort occurred. For example, a sortie where all planned mission tasks were completed, but the mission was non-effective because of uncompleted training events, would not be coded as an air abort.

3.3.3.2. Air Abort, IFE (AI). An air aborted aircraft/sortie with a situation resulting in an in-flight emergency declared by the aircrew.

3.3.3.3. Early Landing (EL). An aircraft/sortie landing more than 15 minutes before the scheduled landing time. Early Landing deviations are not used when computing FSE.

3.3.3.4. IFE (FE). An aircraft/sortie with a situation resulting in an in-flight emergency declared by the aircrew after the mission is accomplished.

3.3.3.5. Late Landing (LL). An aircraft/sortie landing more than 15 minutes after the scheduled landing time. If the sortie originated on time, record any subsequent late takeoff or cancellation against the agency that caused the late landing. If the extended sortie did not originate on time, record any subsequent sortie deviation against the agency that caused the original delay. Late landings are not included in FSE calculations.

3.3.3.6. Precautionary Landing (PL). The aircrew lands an aircraft as a precautionary measure to further inspect a “potential” discrepancy. The landing does not have to occur at an approved airfield (i.e. farmers field, road way, park, etc.). A PL is not identified as an In-Flight Emergency or Air Abort. This code is used without regard to whether the scheduled mission was rated effective or non-effective. Additionally, subsequent sorties will be treated as off-station sorties for deviation reporting.

Table 3.1. Common Flying Scheduling Effectiveness deviation Determination Matrix.

Event	Is This a Deviation		Remarks
	Record in CAMS	Calculate in FSE	
Pen-and-Ink changes to the schedule are made on an AF Form 2407 prior to 1600 Friday.	No	No	
Takeoff or landing time is changed after 1600 on Friday via AF Form 2407.	Yes	Yes	
Aircraft configuration is changed after 1600 on Friday via AF Form 2407.	No	No	
A sortie is added for an OCF/FCF.	No	No	

Event	Is This a Deviation		Remarks
	Record in CAMS	Calculate in FSE	
A sortie is added to the flying schedule (excluding OCF/FCF).	Yes	Yes	
A sortie is added to the flying schedule for weather attrition.	Yes	Yes	
A sortie is canceled.	Yes	Yes	
A sortie is canceled anytime due to weather.	Yes	Yes	Prior to crew show it is a cancel, after crew show it is a weather abort.
A sortie is determined to be non-effective.	No	No	
A takeoff is determined to be late.	Yes	Yes	
A takeoff is determined to be early.	Yes	Yes	
A landing is determined to be late.	Yes	No	
A landing is determined to be early.	Yes	No	
Continuation sortie is not identified in the remarks section of the printed schedule.	Yes	Yes	
Maintenance is performed during a stop in a continuation sortie and the mission continues	Yes	Yes	
A spare aircraft printed on the flying schedule is used in a printed line.	Yes	No	
An aircraft in the printed flying schedule is swapped with an aircraft in another printed line.	Yes	No	
An aircraft not printed in the flying schedule (F or SP) is used in a printed line. (excluding aircraft already flown that day such as OCF/FCF, x-country returns)	Yes	Yes	
An aircraft not printed on the flying schedule is added as a spare.	Yes (if known)	Yes	Counts as FSE deviation even if the aircraft does not fly.
An aircraft not printed on the flying schedule that has flown that day is used in a printed line.	Yes	No	Examples include OCF, FCF & x-country returns.

Event	Is This a Deviation		Remarks
	Record in CAMS	Calculate in FSE	
A ground abort is replaced with another aircraft/spare on the printed flying schedule.	Yes	No	
A printed aircraft ground aborts and is replaced with an aircraft “not” on the printed flying schedule. The second aircraft also ground aborts and the original aircraft is fixed, takes off late, and flies the sortie.	Yes	Yes	

3.4. Deviation Causes. Deviations will be assigned a primary cause. The WG/CC will resolve questions concerning assigning deviations between maintenance and operations. The LRS/CC will resolve questions concerning deviations involving supply and Petroleum Oil Lubricant (POL). Deviations will be assigned one of the following causes:

3.4.1. **Maintenance (MT_).** Deviations resulting from aircraft discrepancies, unscheduled maintenance, or for actions taken for maintenance consideration.

3.4.2. **Operations (OP_).** Deviations resulting from operations/aircrew actions, mission changes causing an early/late takeoff, or cancellation including substitution/aircrew illness (including short notice aircrew physical/mental disqualification), and over-stressing (i.e. over speed and over torque) the aircraft. OP are also deviations resulting from unit controlled operations factors including those caused by mission/load planning, life support, intelligence, base operations, and passengers.

3.4.3. **Supply (SU_).** Deviations resulting from a Partially Mission Capable Supply (PMCS) or Not Mission Capable Supply (NMCS) condition or for late Supply or POL delivery. See AFMAN 23-110, *USAF Supply Manual*.

NOTE: The actual time required for installation will be considered.

3.4.4. **Higher Headquarters (HHQ).** Deviations resulting from a higher headquarters tasking including closing of low level routes/ranges. When an aircraft that was scheduled for a higher headquarters directed alert or off-base mission is replaced by a spare refer to **paragraph 5.3.** for unit options.

3.4.5. **Weather (WX).** Deviations resulting from weather conditions such as sorties canceled because of severe weather conditions.

3.4.6. **Sympathy (SY).** Deviations occurring when a flight of two or more aircraft, aborted, or late due to a cancellation, abort, or delay of one of the aircraft in the flight or a supporting flight. Sorties, which are to replace sympathy aborts or cancellations on the same day, will be recorded as sympathy additions. Sorties lost caused by the aircraft’s scheduled mated mission event will be recorded as sympathy. Examples of mission events are: loss of release times or for another unit’s or command’s support should be coded as sympathy deviations.

NOTE: Deviations caused by aircraft/missions earlier scheduled lines will be assigned to the cause of the earlier deviation, not sympathy (SY).

3.4.7. **Air Traffic Control (AT).** Deviations resulting from air traffic control problems (for example, flight clearance delays, tower communication failure, conflicting air traffic, runway change, or runway closure).

3.4.8. **Other (OT).** Deviations resulting from unusual circumstances not covered by other causes listed. OT may include:

3.4.8.1. Malfunctions, failures, or necessary adjustments to equipment undergoing tests or evaluations associated with Operational Testing and Evaluation (OT&E). Development Testing and Evaluation (DT&E), or Initial Operational Testing and Evaluation (IOT&E).

3.4.8.2. Unusual circumstances such as bird strikes.

3.4.8.3. Vandenberg AFB unique items such as fire fighting and drug interdiction support/missions.

3.4.8.4. Equipment, non-AFSPC. Deviations caused by National Airborne Operations Center (NAOC) or Air Intelligence Agency (AIA) or Air Force Material Command (AFMC) equipment, and other non-AFSPC support and equipment.

3.4.8.5. When an aircraft is off station and cannot return for its scheduled sortie/mission, a deviation will be recorded for the reasons the aircraft was unable to return. The reasons will be specific (maintenance, operations, weather, etc.). A printed spare aircraft may be used for any sorties scheduled for the aircraft that did not return.

3.4.9. **Utilization Day (UTE).** Commander's authorized management deletions IAW **paragraph 3.5.3.**

3.4.10. **Exercise, Higher Headquarters (EXH).** Deviations resulting from higher headquarters directed exercises, including alarm/force protection conditions.

3.4.11. **Exercise, Local (EXL).** Deviations resulting from wing/unit directed exercises, including alarm/force protection conditions.

3.4.12. **Missile Maintenance (MMx).** Deviations resulting from mission, site, time, open hole or location changes.

3.4.13. **Missile Field Operations (MFO).** Deviations resulting from missile field operations crews/chefs insertion and/or extraction. (i.e. road conditions)

3.4.14. **Security Forces (SFx).** Deviations resulting from security force mission changes, including alarm/force protection conditions.

3.4.15. **Wing Leadership Approval (WLA).** Deviations resulting from a convoy not rolling on-time or canceling due to no wing leadership approval.

3.5. Scheduling Exceptions:

3.5.1. Limited Number of Possessed Aircraft. Units with 10 or fewer possessed aircraft of a particular MDS, assignment code, or 50% of their possessed aircraft deployed are authorized to schedule tail numbers daily. Units will print aircraft tail numbers in the weekly schedule. Aircraft tail numbers may

be changed at the daily maintenance scheduling meeting using AF Form 2407 without recording deviations. Immediately following the daily maintenance scheduling meeting, the selected aircraft tail numbers for the next day's flying schedule will be entered in CAMS. Once tail numbers are selected at the daily maintenance scheduling meeting, normal deviations will be recorded. Although aircraft tail numbers may be changed at the daily meeting, maintenance scheduling effectiveness is measured against the printed weekly maintenance schedule.

NOTE: No additional sorties may be added under this scheduling option.

3.5.2. **Adverse Weather.** Units may add sorties to the flying schedule to make up for weather losses. Sorties will only be added to the schedule when the planned weather attrition for the month, prorated daily, has been exceeded for that month. The number of sorties added will not exceed the difference between the planned weather attrition and actual weather losses.

EXAMPLE: Planned weather attrition for the month equals 10 sorties. On the 10th Operations and Maintenance (O&M) day of the month (of 20) a unit's weather losses are already 10 sorties. The unit may add 5 sorties (weather adds). The maintenance schedule and the ability of maintenance to support the additional requirements must be carefully considered before adding sorties. Weather adds, even within planned prorated attrition limits, are recorded as schedule deviations. Under no circumstances will the number of sorties added for weather exceed the number of expected weather losses for the month. See [Attachment 2](#) for example of computing weather attrition for the flying schedule.)

3.5.3. **Achievement of Utilization (UTE) Rate.** Utilization management is accomplished throughout the month. Attrition should be closely monitored and a determination to adjust the number of sorties required should be made before each weekly schedule is developed. This practice ensures an even sortie flow, eliminates excessive maintenance actions and limits the number of sorties canceled. The operations group commander is responsible for the flying program and has the authority to add, cancel, or recut sorties anytime during the month. However, flying scheduling effectiveness will be recorded when changing the weekly schedule. The operations group commander, in coordination with MXG/CC, is encouraged to modify or cancel all or part of the schedule when they are reasonably assured the UTE rate goal for the month will be met. Sorties may be canceled for UTE management during the last 5 O&M days of the month and will be recorded as "UTE."

3.5.4. **Year End Closeout.** During the last 15 O&M days of the fiscal year, units are permitted to selectively add/cancel scheduled sorties to manage the end-of-year flying hour closeout. These additions/cancellations will be recorded as "UTE." This provision is intended to help units gradually close out end-of-year flying without creating hangar queens and unintentionally exceeding the UTE rate.

3.6. Combat/Exercise Sortie Generation. Combat/exercise sortie generations are conducted to exercise the wing's ability to meet to the unit's combat sortie generation tasking under current war plans and contingency operations.

3.6.1. For scheduled combat/exercise sortie generations, publish the weekly flying schedule as a normal schedule. On the days the unit plans to exercise, annotate scheduled exercise. If an unannounced exercise is initiated, the remainder of the printed weekly schedule may be canceled and may be deleted from CAMS by the HM PS&D functional area.

3.6.2. A daily flying schedule, including aircraft tail numbers and configurations for the first lines and spares, will be finalized and confirmed to operations not later than 2 hours prior to the first on-status/takeoff time. The new published schedule is applicable to all affected organizations, and no AF Form

2407 is required to implement the new schedule. All changes after the new schedule has been published will be documented and coordinated on an AF Form 2407. Normal deviations will be recorded against all sorties using the new published schedule.

3.6.3. Sorties lost due to required scenario responses such as chemical warfare condition black, airfield attacks, etc., will be recorded as "EXH or EXL."

3.6.4. If more sorties are flown than line numbers printed, these sorties will be considered flown as scheduled.

3.6.5. Once the objectives established by higher headquarters or the HF commander have been met, the remainder of that day's schedule may be canceled/deleted from CAMS by the PS&D functional area.

3.6.6. At the termination of the combat/exercise sortie generation, the unit's originally printed weekly flying schedule may be revised, canceled, or replaced with a new weekly schedule without recording deviations. Once finalized, normal deviation procedures apply.

3.7. Unscheduled Tasking. When a unit is tasked with an unscheduled higher headquarters, wing or self-initiated tasking (contingency exercises, search and rescue missions, etc.), or other services tasking which significantly impacts the printed weekly flying schedule, the printed schedule may be revised or deleted from CAMS by the PS&D functional area and replaced with a new weekly schedule without recording deviations.

NOTE: Unscheduled tasking will not be used solely to recoup sortie losses.

3.7.1. If the schedule is revised or canceled and reprinted, the following procedures will be used:

3.7.1.1. Normal deviation reporting procedures will be followed once the revised/reprinted schedule has been finalized. The revised schedule will be finalized a minimum of 2 hours before the first scheduled launch.

3.7.1.2. Once the tasking terminates, the original schedule may be used or it may be revised or reprinted for the tasking period, as required. Normal deviation reporting is used once the revised or reprinted schedule is finalized.

3.7.1.3. Normal deviation reporting procedures will be followed after a takeoff time is established to a tasking by higher headquarters or other services.

3.7.2. If the unscheduled tasking has an adverse impact on the monthly UTE rate goal, the OG/CC has the option to adjust the monthly sortie UTE rate goal.

3.8. Continuation Sortie. A sortie containing scheduled operations. Maintenance provides support limited to chocking the aircraft and fire/safety observer and the aircraft engines/APU must remain running. Continuation sorties are designed to accommodate training events, optimize aircraft use and minimize maintenance manpower expenditure. Continuation sorties will be clearly identified in the printed weekly flying schedule. This scheduling option is intended to allow the exchange of aircrew/passengers with minimal maintenance participation.

NOTE: No maintenance or servicing is performed during the stop. Returning the aircraft to maintenance terminates the continuation sortie.

3.9. Helicopter Hover Checks: When a helicopter is flown in a hover, the event will be recorded as a sortie. If the event is required by a maintenance technical order it will be treated as an OCF or FCF as appropriate. If the requirement for the hover is a request from operations, then a scheduled sortie will be created. These sorties will not be in conjunction with operational or training sorties. No deviations will be recorded.

NOTE: Does not apply to hover checks performed to cock the aircraft if duration is less than 3 minutes (i.e., no time is logged on the AFTO Form 781).

3.10. Flying Scheduling Effectiveness Computations. Compute monthly FSE rates by aircraft mission and design using the formulas below:

3.10.1. Total Sorties Scheduled = Home Base Scheduled plus Deployed Scheduled plus Off Base Scheduled.

3.10.2. Scheduling Effectiveness (total FSE) = Total Sorties Scheduled minus total deviations (Do not include air deviations, tail swaps, ground aborts that spare and fly (on-time), and printed spares flown in scheduled lines) divided by Total Sorties Scheduled times 100.

3.10.3. OP FSE = Total Sorties Scheduled minus total "Opx" deviations (Do not include air deviations, tail swaps, ground aborts that spare and fly (on-time), and printed spares flown in scheduled lines) divided by Total Sorties Scheduled times 100.

3.10.4. MT FSE = Total Sorties Scheduled minus total "Mtx" deviations (Do not include air deviations, tail swaps, ground aborts that spare and fly (on-time), and printed spares flown in scheduled lines) divided by Total Sorties Scheduled times 100.

3.10.5. Complete monthly FSE (total, OP and MT) computations and submit results to HQ AFSPC/ LCM, LC-CSO and 20AF/LGH not later than the 5th working day of the new month.

Chapter 4

AIRCRAFT MAINTENANCE SCHEDULING EFFECTIVENESS

4.1. Purpose. This chapter provides a means to measure maintenance management effectiveness, reflected by how well the maintenance schedule is carried out. Maintenance efforts should be directed toward the timely accomplishment of all scheduled maintenance actions. The AFSPC Maintenance Scheduling Effectiveness (MSE) standard is 95%.

4.2. Computations:

4.2.1. Scheduled maintenance events and respective weighted factor points in **Table 4.1.** are used to compute the MSE rate. Credit is received for actions completed on, or prior to, the scheduled date as printed in the weekly flying and maintenance schedule. The CAMS database and the published schedule will be used to determine whether or not the maintenance actions were completed on time.

EXCEPTION: Phase/PE and Isochronal inspection (ISO) will be measured against the scheduled completion date for the “look” portion of the inspection only.

4.2.2. The MXG/CC may select additional areas (such as AGE, AIS, AME, etc.) for local scheduling effectiveness tracking. The unit will establish standards for these programs and develop a computation table in the format of **Table 4.1.** This data will not be included in aircraft maintenance scheduling effectiveness when reported to higher headquarters.

4.2.3. The PS&D functional area will develop procedures for reviewing and recording scheduled maintenance actions daily.

4.2.4. When a unit is tasked with a combat sortie generation, unscheduled tasking, unannounced exercise/real world contingency, or higher headquarters exercise that significantly impacts the printed weekly maintenance schedule, the plan may be revised or reprinted without incurring deviations. Normal deviation reporting procedures will be followed once the revised or reprinted plan is finalized. The unaccomplished portion of the maintenance schedule that was revised will not be included in the scheduling effectiveness formula.

4.2.5. A canceled maintenance event may be rescheduled using AF Form 2407. Once rescheduled, the event will be computed in that day's maintenance scheduling effectiveness. If the event is deferred until the next week, it will be printed as scheduled maintenance in the weekly plan. Units may revise or reprint the following day's or remainder of that week's maintenance schedule to compensate for adverse weather. This adjustment should be used only in extreme cases and recorded on an AF Form 2407. Once changed, normal deviation reporting procedures will apply.

4.2.6. Maintenance FC's will coordinate to cancel and reschedule maintenance actions to coincide with flying schedule UTE cancellations after the unit has achieved the UTE rate goal for the month. These canceled maintenance actions will not be included in MSE computations.

4.2.7. Maintenance Scheduling Deviation Categories:

4.2.7.1. Maintenance (MT). Actions canceled or not completed as a result of adding aircraft to the flying schedule, mismanagement, or a lack of manpower or equipment.

4.2.7.2. Higher headquarters (HHQ). Actions canceled or not completed as a result of higher headquarters tasking from outside of the wing.

4.2.7.3. Weather (WX). Actions canceled or not completed as a result of weather conditions.

4.2.7.4. Supply (SU). Actions canceled or not completed as a result of verified parts back order condition.

4.2.7.5. Other (OT). Actions canceled or not completed as a result of impounded aircraft (after the weekly schedule is published), major maintenance where technical data restrictions do not allow the scheduled maintenance, aircraft off base and unable to return, or as a result of UTE cancellations.

4.2.8. Complete monthly MSE computations and submit results to HQ AFSPC/LCM, LC-CSO and 20AF/LGH not later than the 5th working day of the new month.

Table 4.1. Maintenance Scheduling Effectiveness Computation.

Scheduled Event	(A) Weighted Points	(B) # of Events	(C) Points Possible (A x B)	(D) Completed as Scheduled	(E) Points Earned (A x D)
Phase Inspection	5				
Transfer/Acceptance Inspections	5				
Engine Changes	5				
Corrosion Control/ Paint	4				
Time Change	4				
TCTO	4				
Alert Prep	3				
Special Inspection	3				
Training Aircraft	3				
Document Review	2				
Delayed/Deferred Discrepancies (DD)	1				
Total points possible (TPP): _____ Total points earned (TPE): _____					
Formula: $TPE / TPP \times 100 = \text{Maintenance Scheduling Effectiveness Rate.}$					

Chapter 5

DEPLOYED OPERATIONS AND OFF-STATION SORTIES

5.1. Purpose. This chapter establishes rules and procedures used in planning, executing, evaluating, and reporting of unit flying and maintenance schedules at deployed locations where unit maintenance is provided. Sorties flown at deployed locations where no, or limited (e.g., crew chief), parent unit maintenance is provided are considered off-station sorties. If parent unit support is deployed, this is considered the same as home station support and normal deviation reporting applies. Limited launch support is not considered parent unit maintenance.

5.2. Deployed Operations Sorties. Normal deviation reporting applies to deployed operations except as noted in this chapter. Data from deployed operations will be transmitted or forwarded back to home station and reported in a separate column and included in unit totals.

5.2.1. In addition to the procedures for home station scheduling and reporting, deployed units will use the following procedures when developing a weekly flying schedule and reporting deviations:

5.2.1.1. Separate block(s) of sortie sequence numbers will be assigned for deployment location(s).

5.2.1.2. When a spare aircraft is launched for a scheduled deployment to a Forward Operating Location (FOL), the options in **paragraph 5.3.1.** apply to the home station and deployment location flying and maintenance schedules.

5.2.1.3. Additions and cancellations at deployed locations, which are required to accomplish specific aircrew training requirements and make optimum use of available range time, are considered flown as scheduled. This does not relieve operations and maintenance from developing a viable and realistic flying schedule at the deployed location. The primary purpose of this flexibility is to allow the unit to make up non-effective sorties to ensure accomplishment of the deployment-training plan. Procedures for changing the weekly schedule in **Chapter 2** apply to deployment location flying and maintenance schedules. Additions and cancellations caused by ineffective planning are recorded.

5.2.2. Required information for deployed AFSPC units will be transmitted to home station IAW applicable unit deployment plans (i.e., the Deployed Daily Activity Report).

5.3. Off-Station Sorties. Those sorties flown from other than home station and parent unit maintenance is not provided (e.g., cross-country sorties, post PL sortie or multiple sorties within the missile field complex). The following paragraphs outline the rules that apply to off-station sorties:

5.3.1. When a spare is launched to the off-station/cross country location in place of the originally intended aircraft, one of the following options applies.

5.3.1.1. Option 1. The originally scheduled prime aircraft, which remained on base, may fly the sorties of the departed aircraft for the remainder of the week.

5.3.1.2. Option 2. The sorties may be interchanged with a printed spare aircraft on each day's schedule.

5.3.2. When an aircraft is off-station and cannot return to home station for its scheduled sortie, a deviation will be recorded for the reason the aircraft was unable to return. The reasons will be specific, i.e., maintenance, operations, weather, etc.

5.3.3. When an aircraft performs a PL, a deviation will be recorded. However, no deviation reporting will apply to the subsequently flown sortie treated as flown as scheduled.

5.3.4. When an aircraft is flown on multiple sorties within the missile field complex, the initial sortie is scheduled in a hard line while the additional sorties are flown as scheduled.

NOTE: If the off-station aircraft can fly its scheduled mission from its location, no deviation is recorded.

5.4. Ferry Sorties. Sorties flown to transfer an aircraft to or from a maintenance facility or to a new assignment, including inter-command, inter-unit transfers will be treated as off-station sorties that are flown as scheduled.

5.4.1. The initial ferry sortie leaving the home base will be scheduled as a hard line and all deviation reporting is applicable. Subsequent off-station sorties will be flown as scheduled.

Chapter 6

FLYING SCHEDULING REPORTING PROCEDURES (CAMS)

6.1. Purpose. This chapter provides instructions on flying scheduling reporting procedures. The flying schedule must be loaded in CAMS to track scheduling and deviation data. Once loaded, the CAMS daily mission schedule or proposed maintenance plan background programs will provide base-level retrieval of flying and maintenance schedule information, and CAMS will complete higher headquarters reporting of aircraft utilization.

6.2. Responsibilities:

6.2.1. The MXG/CC (or OG/CC at 30SW) will ensure procedures are established to verify the accuracy of all scheduling and deviation data.

6.2.2. The HM PS&D function will publish the weekly flying schedule IAW **Chapter 2** of this publication on AF Forms 2400 series or computer generated forms. Additionally, the PS&D function will load the weekly flying schedule into CAMS by 1600L Friday for the following week using the procedures in AFCSM 21-565V2. Refer to **paragraph 3.5.1.** of this instruction for daily tail number scheduling procedures.

6.2.3. The HM MOC function will review the on-line CAMS debriefed sortie recap and the CAMS background program daily accomplishment utilization report, deviation detail listing and deviation summary reports and uncompleted operational events daily to ensure accuracy of deviation reporting. The MOC function will record additions, cancellations before crew show, late and early takeoffs and landings, interchanges, and the use of spare aircraft in CAMS as deviations occur. The debrief function will record aborts and in-flight emergency incidents in CAMS during the CAMS automated debriefing process. The MOC function will provide sortie sequence numbers and sortie numbers to the HM PS&D/debrief function for all additions and cross-country sorties. Sortie numbers assigned to a specific tail number must be in sequential order (for example sortie number 101 must be used on a specific tail number before sortie number 102). Unique sortie sequence numbers will be developed for deployed sorties.

6.2.4. The following instructions apply to CAMS screen 474, Cause Code Table; 342, Operational Event Cancellation; 343, Operational Event Tail Number Swap/Tail Number Spare; and 350, Deviation, Start/Stop/Correction Abort/Delete. The Ground Deviation Code block cannot be blank. Enter one of the codes listed in **Table 6.1.** or one of the ground deviation codes IAW AFCSM 21-565V2:

Table 6.1. Ground Deviations.

CODE	FUNCTION
AD	Addition
CX	Cancellation
ET	Early Takeoff
GA	Ground Abort
LT	Late Takeoff
SP	Spare
TS	Tail number Swap or Interchange - Not to be used when a spare aircraft is used before crew show

6.2.5. **Indicator.** Enter one of the codes listed in [Table 6.2.](#) to indicate the category of deviation:

Table 6.2. Deviation Categories.

CODE	FUNCTION
C	Recorded Deviation
N	Not Used (all deviations recorded)

NOTE: There is no code for spare interchanges in CAMS. The action required indicating an interchange in CAMS is a tail number swap, which is the only way to move a sortie number from one tail number to another. Code it as a deviation and list in the remarks block that the tail number swap is an interchange. Flying scheduling effectiveness must be calculated manually to exclude spares and interchanges under CAMS.

6.2.6. **Cause Code.** Enter one of the following codes to indicate the reason for a deviation or the agency, which caused a deviation. These codes must be entered into the CAMS Cause Code table as outlined in AFCSM 21-565V2. The maintenance indicator block is left blank when loading the cause codes listed in [Table 6.3.](#)

Table 6.3. Cause Code Definitions.

CODE	FUNCTION
Atx	Air Traffic
EXH	Exercise, HHQ
EXL	Exercise, Local
GAA	Ground Abort, before engine start, maintenance
GAB	Ground Abort, after engine start, before taxi, maintenance
GAC	Ground Abort, after taxi, maintenance
HQN	Higher Headquarters, NAF (non-exercise)
HQP	Higher Headquarters, other (non-exercise)
HQT	Higher Headquarters, MAJCOM (non-exercise)
MFO	Missile Field Operations Support (to insert/extract operations crew/chefs)
MMx	Missile Maintenance
Mtx	Aircraft Maintenance
Opx	Operations
SFx	Security Forces
Sux	Supply
Syx	Sympathy
UTx	UTE Cancel
WLA	Wing Leadership Approval (did not receive approval to roll convoy)
Wxx	Weather
Otx	Other
xxx	Local Option

NOTE: Use x for any character for local use.

6.2.7. **Air Deviation Code.** Enter one of the codes listed in [Table 6.4.](#) or one of the air deviation codes in AFCSM 21-565V2 for each deviation that occurs after aircraft takeoff: Air Deviations are not included in FSE rate computations, but must be recorded.

Table 6.4. Air Deviation Codes.

CODE	FUNCTION
AA	Air Abort (includes operations, weather, sympathy, ATC, Non-IFE, other)
AI	Air Abort, IFE
EL	Early Landing
FE	IFE
FI	In-flight Incident
LL	Late Landing
PL	Precautionary Landing

THOMAS F. DEPPE, Brig Gen, USAF
Director, Logistics and Communications

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 16-402, *Aerospace Vehicle Programming, Assignment, Distribution, Accounting, and Termination*

AFPD 21-1, *Managing Aerospace Equipment Maintenance*

AFI 21-101, *Aerospace Equipment Maintenance Management*

AFCSM 21-565V2, *Operational Event Subsystem*

AFMAN 23-110, *USAF Supply Manual*

AFI 36-2217, *Munitions Requirements for Aircrew Training*

USAF Records Disposition Schedule

T.O. 1H-1(U)N-1, *USAF Series UH-1N Helicopter*

Abbreviations and Acronyms

AA—Air abort

AD—Addition (see definition of terms in this attachment)

AF—Air Force

AFCSM—Air Force Computer Systems Manual

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFMC—Air Force Material Command

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSPC—Air Force Space Command

AFSPCI—Air Force Space Command Instruction

AFTO—Air Force Technical Order

AGE—Aerospace Ground Equipment

AI—Air abort, IFE

AIA—Air Intelligence Agency

AIS—Avionics Intermediate Shop

AME—Alternate Mission Equipment

ANG—Air National Guard

APU—Auxiliary Power Unit

AT—or **ATC**--Air traffic control

Atx—Air traffic

AUR—Accomplishment Utilization Report (see definition of terms in this attachment)

BAI—Backup Aerospace Vehicle Inventory

C—Recorded deviation

CAMS—Core Automated Maintenance System

CC—Commander

CX—Cancellation (see definition of terms in this attachment)

COR—Contract Officer Representative

DD—Delayed/Deferred discrepancy

DT&E—Development testing and evaluation

EL—Early landing

ET—Early takeoff (see definition of terms in this attachment)

EXH—Exercise, HHQ

EXL—Exercise, Local

FC—Functional Commander

FCF—Functional check flight (see definition of terms in this attachment)

FE—IFE

FI—In-flight incident

FOL—Forward operating location

FSE—Flying Scheduling Effectiveness

GA—Ground abort

GAA—Ground abort, before engine start, maintenance

GAB—Ground abort, after engine start, before taxi, maintenance

GAC—Ground abort, after taxi, maintenance

HHQ—Higher headquarters (see definition of terms in this attachment)

HM—Helicopter Maintenance

HQ—Headquarters

HQN—Higher headquarters, NAF (non-exercise)

HQP—Higher headquarters, other (non-exercise)

HQT—Higher headquarters, MAJCOM (non-exercise)

IAW—In accordance with

IFE—In-flight emergency (see definition of terms in this attachment)
IOT&E—Initial operational testing and evaluation
ISO—Isochronal
JA/ATT—Joint Airborne Air Transportability Training
LL—Late landing
LT—Late takeoff (see definition of terms in this attachment)
MAJCOM—Major command
MDS—Mission design series
MDSA—Maintenance Data Systems Analysis
MFO—Missile Field Operations Support
MMx—Missile Maintenance
MOC—Maintenance operations center
MS—Maintenance Supervision
MSE—Maintenance Scheduling Effectiveness
MT—Maintenance
Mtx—Aircraft Maintenance
MXG—Maintenance Group
NAOC—National Airborne Operations Center
N—Not used (all deviations are recorded)
NLT—Not later than
NMCS—Not mission capable supply
OCF—Operational check flight (see definition of terms in this attachment)
OG—Operations group
O&M—Operations and maintenance (see definition of terms in this attachment)
OP—Operations
Opx—Operations
OT—Other
Otx—Other
OT&E—Operational testing and evaluation
PAI—Primary Aerospace Vehicle Inventory
PE—Periodic
PL—Precautionary Landing

PMCS—Partially mission capable supply
POL—Petroleum, oil, and lubricants
PS&D—Plans, scheduling, and documentation
SAAM—Special assignment airlift mission
SF_x—Security Forces
SP—Spare (see definition of terms in this attachment)
SU—Supply
S_{ux}—Supply
SY—Sympathy
S_{yx}—Sympathy
TCTO—Time compliance technical order
TO—Technical order
TOT—Time on target
TS—Tail number swap or interchange
UTE—Utilization
UT_x—UTE Cancel
WLA—Wing Leadership Approval (did not receive approval to roll convoy)
WX—Weather
W_{xx}—Weather
xxx—Local option

Terms

Accomplishment Utilization Report (AUR)—A background report showing flying schedule accomplishment on a daily, weekly or monthly basis (AFCS M 21-565V2).

Addition—An increase in sorties or aircraft added to the printed weekly flying schedule.

Air Abort—An airborne aircraft that cannot complete its primary or alternate mission.

Air Deviation Code—A deviation from the scheduled sortie flight plan occurring after aircraft takeoff.

Alert Sorties—Sorties flown from alert because of a higher headquarters exercise, active air or practice scramble, or committed to fly from alert on the printed weekly schedule will be considered sorties scheduled and flown as scheduled.

Attrition—Losses expected based on historical data. Sorties added by maintenance scheduling to a unit's sortie contract to allow for expected losses due to maintenance, operations, supply, air traffic control, sympathy, HHQ, other cancels, and weather cancels as computed IAW [Attachment 2](#). If attrition is less or more than planned, adjustments to the schedule should be made to prevent overextending maintenance and/or to stay within the unit's sortie flying hour program. Attrition sorties are not substitutes for

capability shortfalls; they are additive to the contract to ensure mission goals are met. A sortie lost will normally be flown in the week/month the loss occurred. If at the end of a quarter, losses exceed attrition figures, the OG/MXG CCs will come to an agreement on how the shortfall will be corrected.

Attrition Reserve—Attrition Reserve. Reference AFI 16-402, Assignment, Distribution, Accounting, and Termination. Attrition reserve aircraft are those aircraft required to replace primary aircraft inventory losses in a given year projected over the life span of the weapons system. These aircraft are distributed to operational and training units to evenly spread life cycle fatigue and ensure all aircraft receive periodic systems upgrades and modifications. Assigned attrition reserves are occasionally realigned to maintain fleet balance.

Cancellation—An aircraft or sortie that is removed from the printed schedule for any reason.

Cocked Aircraft—An aircraft prepared for an alert or cocked posture to launch in the shortest possible time consistent with safety IAW T.O. 1H-1(U)N-1, *USAF Series UH-1N Helicopter*. A cocked aircraft is considered released to Helicopter Operations. If maintenance actions are required, the aircraft must be de-cocked and released back to Helicopter Maintenance.

Combat Sortie Generation—A process by which aircraft are generated in a minimum time, during peacetime or wartime, through concurrent operations that may include refueling, munitions loading/unloading, aircraft reconfiguration, and -6 inspection and other servicing requirements. These exercises test a wing's ability to meet current war plans and contingency operations.

Continuation Sortie—A scheduled sortie containing scheduled operation stops. When a crew completes their training/mission and performs an operation stop, the engines/APU remain running and maintenance does not service the aircraft. The aircraft can subsequently be launched without the participation of maintenance personnel, except for a fire/safety observer. The prime purpose is to on/off load crew members.

Crew Ready—An aircraft that has been properly inspected, fueled, configured, necessary maintenance actions completed, the exceptional release signed off (for the first flight of the day) and the tail number passed to operations. **NOTE:** Units will develop and publish specific crew ready times for each assigned MDS or as specified within contract requirements.

Crew Show—The time that the aircrew arrives at the aircraft.

Deployed Sorties—Sorties launched away from home base or isolated areas at home base, with parent-unit maintenance provided. For the purpose of this instruction deployed sorties are considered home station sorties.

Daily Maintenance Scheduling Meeting—Meeting required to review the previous day's accomplishments, verify aircraft and equipment utilization and scheduled maintenance requirements for the current and next day, establish work priorities, and coordinate schedule changes.

Deviation—A departure from the printed weekly flying schedule.

Early Landing—Scheduled sorties landing more than 15 minutes prior to scheduled landing time. Early landing deviations are not included in FSE calculations.

Early Takeoff—Scheduled sorties launched more than 30 minutes prior to scheduled takeoff.

Exercise—A unit or higher headquarters event designed to test or evaluate an organization's plans, procedures, and operational/maintenance capabilities.

Extended Sortie—Scheduled sorties that land more than 15 minutes past the scheduled landing time.

External Customer—Outside the control of the operational wing, a user of aircraft sorties that dictates, either partially or wholly, flying schedule execution (e.g., Joint Airborne Air Transportability Training (JA/ATT) users, Special Assignment Airlift Mission (SAAM) users or channel mission users.

Ferry Sortie—Those sorties flown to transfer an aircraft to or from a maintenance facility or to a new assignment, including intercommand, interunit transfers.

Flown as Scheduled Sortie—A sortie flown by a specific aircraft on the date and time indicated on the printed weekly schedule, and those aircraft that are defined as "flown as scheduled" elsewhere in this instruction.

Flying Scheduling Effectiveness—Rate used to determine how well the flying schedule was executed.

Functional Check Flight (FCF)—The flight of an aircraft, in accordance with the applicable dash -6 manual, to verify the airworthy condition of the aircraft.

Ground Abort—Event after crew show time that prevents a "crew ready" aircraft from becoming airborne. Ground aborts are categorized as maintenance (GAA, GAB, GAC), operations, HHQ, weather, sympathy, other, ect... The difference between a ground abort and a cancellation is after crew show it is a ground abort, before crew show it is a cancel. A ground abort by itself is not a deviation, but can cause a deviation such as canceled sortie or late take-off.

Higher Headquarters—A controlling agency normally above wing level.

Home Station Sortie—Sorties launched from the home base or deployed locations where parent unit maintenance is provided.

In-Flight Emergency (IFE)—An airborne aircraft that encounters a situation or emergency that results in an IFE being declared by the aircrew. (Not a deviation, but will be recorded IAW [Chapter 6](#).)

Interchange—Tail number swaps made to the daily flying schedule IAW paragraph [2.3.1.2](#) or [3.3.2.7](#). Aircraft interchanges are swaps between printed aircraft on the same day, between printed aircraft and spare aircraft on the same day, or between printed aircraft and aircraft that have previously flown that day (cross country return, OCF, FCF, etc...).

Late Landing—Aircraft landing 15 minutes past its scheduled landing time. Does not apply to continuation sorties. If the sortie originated on time, and if the late landing causes a subsequent late takeoff or cancellation, record the deviation against the agency that caused the late landing. If the extended sortie did not originate on time, record the subsequent sortie deviation (if applicable) against the agency that caused the original delay. Late landings are not included in FSE calculations.

Late Takeoff—Scheduled sortie launched more than 15 minutes after scheduled takeoff time.

Maintenance Scheduling Effectiveness—A measurement used to determine what percent of the scheduled maintenance actions were actually completed as scheduled in the weekly flying schedule.

Mission Recut—When an external customer, for a scheduled sortie, cancels and the unit wishes to optimize the available airframe, the mission may be recut to complete training requirements. The crew compliment must remain the same and the takeoff and landing times cannot be changed without incurring a deviation.

Off-Station Sorties—Sorties flown away from home base (i.e. cross-country or multiple stops within the missile field complex after the initial hard scheduled line) and parent unit maintenance is not provided.

This includes aircraft that divert or break off-station and parent unit maintenance is sent to repair and launch the aircraft. **NOTE:** Off-station sorties are considered flown as scheduled. Deviations incurred are not used in scheduling effectiveness or abort rate computations.

Operational Check Flight (OCF)—The first flight of an aircraft that has had extended downtime or extensive maintenance which does not require an FCF.

Operations and Maintenance Day (O&M)—Monday through Friday, not including federal holidays or command directed family days.

Pen-and-Ink Changes—Changes made to next week's flying schedule on AF Form 2407 after the appropriate agencies have signed the schedule and prior to 1600 hours local Friday.

Precautionary Landings—The aircrew lands the aircraft as a precautionary measure to further inspect a "potential" discrepancy. Additionally, the landing does not have to occur at an approved airfield (i.e. farmers field, road way, park, etc.). A precautionary landing is not identified as an In-Flight Emergency or Air Abort.

Scheduled Sortie—An aircraft scheduled for flight by tail number on the weekly flying schedule and confirmed on the daily flying schedule. FCFs and OCFs are excluded.

Scheduled Maintenance Action—A maintenance requirement printed in the weekly schedule.

Sortie—A sortie begins when an aircraft moves forward on takeoff or takes off vertically from rest at any point of support. It ends after airborne flight when the aircraft returns to the surface except for continuation sorties and: a. The engines are stopped, or b. The aircraft is on the surface for 5 minutes, whichever occurs first between a and b, or c. A change is made in the crew or any sortie on the ground for more than 5 minutes regardless of circumstances complete AFTO 781 sortie line, and add a new sortie entry on AFTO Form 781.

Sortie Contract—A written agreement between operations and maintenance. It specifies the number of sorties and hours to be flown.

Spare Aircraft—An aircraft specifically designated on the flying schedule to replace aircraft that cannot fly its sortie. Spares can include aircraft that have been canceled, aborted, flown an earlier sortie, or an aircraft that has been released after FCF/OCF. Do not count "Printed Spares" used as deviations when computing FSE

Unscheduled Tasking—Tasking in which initial notification occurs after publication of the weekly schedule.

Weekly Flying and Maintenance Schedule—The schedule, agreed to by operations and maintenance, and signed by the appropriate commanders, to support the unit's flying and maintenance requirements. In this publication it is referred to as the "flying schedule."

Attachment 2

ATTRITION AND SPARE FACTOR EXAMPLE

A2.1. General. The factors used to compute attrition will be Mtx, Opx, Sux, Wxx, Atx, Syx, Otx, and HQx cancels. When developing these factors, use normal statistical applications. Attrition factors are used to compensate for non-unit controlled factors. Spares are used to compensate for unit controlled factors. Attrition and spare factors will be computed for and applied to each flying unit. Use as much historical data as necessary to ensure seasonal variations are considered as the basis for attrition and spare factors. Monthly statistical attrition anomalies should be identified, documented and factored out of attrition calculations if necessary. MXG/CC will approve use of attrition factors different than statistical attrition rates calculated by MDSA. Attrition will be computed monthly and the results will be provided to the FC for dissemination to the PS&D function.

NOTE: Attrition and spare factors will not be employed until FY06 due to a lack of credible historical data. And although five years (of historical data) is normally used to develop standards and/or analytical studies, one year (in subsequent increments) will be used until the five years of data is compiled. (i.e. FY06 = 1 year, FY07 = 2 years, FY08 = 3 years, FY09 = 4 years...).

A2.2. Attrition Factor:

A2.2.1. Computation is based on unit historical data from previous similar flying months. For example, when computing attrition for Jan 05, use historical data for Jan 04, Jan 03, Jan 02, Jan 01, Jan 00, Jan 99, Jan 98, etc., when available. Use as much historical data as required ensuring seasonal variations are considered to determine a basis for attrition. When computing attrition, use the total sorties lost in a particular category. Do not use the difference between the sorties lost and those sorties added to make up for the losses. The attrition will be computed by MDSA by month for the entire fiscal year. The formula for computing the attrition factor is Historical Sorties Lost divided by Historical Sorties Scheduled.

NOTE: The monthly schedule will, for management purposes, clearly identify attrition sorties. If attrition is less or more than planned, adjustments to the schedule should be made to prevent overextending maintenance and staying within the unit's sortie flying hour program. Attrition sorties are not substitutes for capability shortfalls, they are additive to the contract to ensure mission goals are met. A sortie lost will normally be flown in the week/month the loss occurred. If at the end of a quarter, losses exceed attrition figures, the OG/CC and MXG/CC will come to an agreement on how the shortfall will be corrected. Weather attrition sorties will only be used when sorties are lost because of weather. Weather attrition sorties will not be carried over into another month.

Table A2.1. Attrition Computation Example.

Cancels:	
MT Cancels	.03
OP Cancels	.01
SU Cancels	.01
OT Cancels	.01
AT Cancels:	.01
SY Cancels:	.01
HHQ Cancels:	<u>.01</u>
Cancels attrition factor:	.09
WX Cancels:	<u>.07</u>
Total Attrition Factor:	.16 or 16%

A2.2.2. Sample Application of Total Attrition Factor:

Sorties Required 100

Subtract attrition factor from 1: $(1-.16)=.84$

Divide 100 by .84

Required sorties to schedule 119.04, round up to 120.

Based on historical attrition of .16%, the unit can expect to lose 20 sorties to meet the required 100 sorties.

A2.3. Prorated Weather Attrition Factor:

A2.3.1. Computation. Using the weather attrition factor, compute the number of anticipated sortie losses for weather. Divide the number of weather losses by the O&M days. This will determine the prorated weather attrition.

A2.3.2. Sample Application of Prorated Weather Attrition Factor:

Sorties Required 100

Subtract the weather attrition factor from 1 $(1-.07)=.93$

Divide 100 by .93 $100/.93$

Equals Required Sorties to Schedule 108

Minus Sorties Required 100

Expected Weather Losses 8

Divide 8 by O&M Days (20 for this exercise) $8/20$

Expected Sortie Losses per O&M Day 0.4

A unit would expect 0.4 sorties lost each O&M day in the month for weather. Thus, a total of 8 sortie losses (0.4 sorties x 20 O&M days) would be expected for that month. Whenever weather losses exceed the total projected weather losses (number of O&M days to date x 0.4, round up to the next whole number), a unit may add sorties not to exceed the difference between the sorties lost due to weather and the total projected weather losses.

EXAMPLE: On the 11th O&M day of the month, a unit lost a total of 8 sorties to-date due to weather. The expected prorated weather sorties lost to-date is 5 (0.4 times 11 equal 4.4, round up). The unit also added 1 weather sortie earlier in the month. The unit could add up to 8 sorties. (8 sorties lost to date due to weather minus 5 prorated losses minus 1 weather add equals 2 weather adds available)

A2.4. Spare Factor:

A2.4.1. Spare factors are based on projected first sortie logistics losses.

A2.4.2. Spare requirements are computed and printed by day for each flying unit in the weekly flying schedule. The following are used to determine spare aircraft: (if not identified in contract for contract maintenance units)

A2.4.2.1. Spare requirements will not exceed 20 percent of aircraft committed to the flying schedule, rounded up to the next whole aircraft. MDSA computes spare aircraft requirements annually using historical first sortie logistics losses and provides this information to the PS&D functional area for use in scheduling spare aircraft. The formula for computing spare factors is Historical First Sortie Deletions/Cancellation divided by Historical Sorties Scheduled.

A2.4.2.2. The scheduled spare requirement may be adjusted to compensate for multiple configurations, not to exceed one per configuration, and training syllabus constraints.

A2.4.2.3. Additional spare aircraft are authorized to support HHQ taskings and special missions if required by the tasking.

A2.4.2.4. At least one spare aircraft is authorized per MDS for each flying day.

A2.4.3. Sample Application of Spare Factors:

1st Sortie Maintenance Cancellations .10

1st Sortie Supply Cancellations .03

1st Sortie Ground Aborts .05

Spare factor .18 or 18%

A sample figure of 4 first sorties is used in the following computation:

Spare aircraft required equals 1st sorties scheduled times the spare factor and rounded to next whole number.

$4 \times .18 = 0.72$ Spares Required is 1