BY ORDER OF THE COMMANDER
UNITED STATES AIR FORCES IN EUROPE

UNITED STATES AIR FORCES IN EUROPE
INSTRUCTION 21-118

20 SEPTEMBER 2004

Maintenance

7104 MONTHLY LOGISTICS REPORT

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements AFPD 21-1, *Air and Space Maintenance*, and AFI 21-129, *Two-Level Maintenance and Regional Repair of Air Force Weapon Systems and Equipment*. The **RCS:** USAFE-A4MN(M)-0401*, 7104 Monthly Logistics Report (MLR) part I and Part II* replaces the 7104 REPORT and is referred to throughout the remainder of this instruction as 7104 Part I for the data spreadsheets and 7104 Part II for the narratives document, establishes criteria, command standards and procedures for reporting unit data to Headquarters United States Air Forces in Europe (USAFE). Required data includes unit sortie and flying hour utilization programs and maintenance statistics for all aircraft assigned to USAFE. This includes main operating bases and support activities such as weapons training sites, forward operating locations (FOL), etc. This instruction applies to all USAFE units possessing or supporting aircraft. It does not apply to Air Force Reserve Command (AFRC) or Air National Guard (ANG) units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 37-123, *Management of Records* and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at: **https://webrims.amc.af.mil**. The use of a name of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force. Supplements to this instruction are not authorized.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

In addition this USAFEI 21-118, *7104 Monthly Logistics Report* replaces the previous USAFEI 21-103, ***RCS:*** USAFE-A4M(W/M) *7104 REPORT*. Analysis will now forward the 7104 Parts I and II, to the Commander, Maintenance Group (MXG/CC) for release after coordinating with appropriate agencies. The suspense date has been changed to reflect the 11th calendar day of the month. E-mail addresses, telephone and fax telephone numbers where reports need to be sent are updated. Revision includes deletion of the Part III option and the Part IV requirement. All of the AF Form 2407, *Weekly/Daily Flying Schedule Coordination* data reporting has been deleted. The attachments have been renumbered to accommodate

new attachments. **Attachment 4** contains common questions submitting agencies should be answering when writing Part II of the monthly report and an example of the 7104 Part II. **Attachment 5** contains the instructions for the new USAFE capabilities tools and the OPSTEMPO tool. The actual spreadsheets are provided to the unit's in the same fashion as Part I. No changes are authorized to the capabilities tools to include the 7104 Part I spreadsheets. Recommended changes can be forwarded to this office for consideration. Also changed is the name of the analysis career field from Maintenance Data Systems Analysis (MDSA) to Maintenance Management Analysis (MMA).

Section A—General Instruction

1. Scope. This instruction applies to all USAFE units possessing or supporting aircraft.

1.1. Introduction. This instruction coupled with regular internal performance reviews supporting USAFE goals. This instruction defines the logistics performance terms and has reporting and review procedures to enable USAFE managers to manage by fact. The focus is measurement of the many logistics processes that provide combat capability to the unit. The unit's role emphasizes in-depth analysis of work processes, integrity in measurement methods, timeliness in reporting, and comprehensive remarks describing particular unit support issues requiring analysis and action. By no means should units limit their performance reviews to only the items reported to the headquarters. There are many other metrics available to unit managers that are helpful in determining unit health.

2. Responsibility. The Maintenance Group (MXG) is the office of primary responsibility for compliance with this instruction. Commanders or their designated representatives will:

2.1. Ensure 7104 Parts I and II are prepared and transmitted as prescribed by this instruction. The focal point for these reports is the Maintenance Operations Squadron (MOS), Maintenance Management Analysis (MMA) Element. Ensure the appropriate agencies submit 7104 Parts I and II data elements to MMA in sufficient time to meet the established suspense. Submitting agencies are responsible for the accuracy of their inputs.

2.2. While the MXG has overall responsibility for the report, it is imperative the Aircraft Maintenance Units (AMU) OIC, AMXS maintenance supervision, EMS, CMS, MSL and MMA, etc… work closely together to ensure the report clearly explains all factors that drove performance out of standards and answer the questions at **Attachment 4**.

2.2.1. MMA will coordinate the 7104 Parts I and II, with all affected agencies before forwarding to the MXG CC for release.

2.2.2. MMA is trained to extract, validate, and analyze the objective data. However, they are not in the middle of the day-to-day, high operations tempo. The AMU OICs, maintenance supervision, and supply are all in unique positions to observe and document factors impacting a unit's ability to fly missions and are the submitting agencies for the narratives. The submitting agencies will provide the narratives to MMA.

2.2.3. The data and comments reported are used to brief the Commander United States Air forces in Europe (COMUSAFE). When a unit has persistent problems or factors outside its control driving bad rates, Part II is an excellent vehicle for making that known. It is important for units to understand Major Command (MAJCOM) leadership will use these comments to analyze the situation and, if warranted, act on the information provided in Part II. The data and information contained in this report is used by HQ USAFE to engage command agencies, depots, Air Staff and other outside agencies to work issues affecting USAFE units.

3. Out-of-Cycle Updates. Maintenance Management Analysis Branch (HQ USAFE/A4MN) may task unit MMA to provide current data status updates by telephone, with follow-up message or e-mail.

4. Changes. Submit recommended changes to this instruction to the applicable Higher Head Quarters (HHQ) for evaluation. The HHQ will forward its recommended changes to:

HQ USAFE/A4MN

UNIT 3050 BOX 105

APO AE 09094-0105

5. Algorithms. Units are not required to report computed performance rates. However, the formulas to compute each of the rates are included at **Attachment 2** and in the spreadsheets provided by HQ USAFE/A4MN. Performance rates reflected in the USAFE monthly briefings are computed using these formulas. Units are not authorized to make any changes to the Part I spreadsheets provided without written approval from HQ USAFE/A4MN.

6. Standards. Combat Air Forces (CAF) and Mobility Air Forces (MAF) standards are developed annually to aid managers at all levels assess the effectiveness of logistics processes and to help detect areas that may require study or investigation. CAF and MAF standards are requirements based. Standards for contractor logistics support (CLS) maintained aircraft are based upon contractual agreements. The 86th Airlift Wing will provide only fully mission capable (FMC), mission capable (MC), partially mission capable (PMC) and not mission capable (NMC) rates for CLS maintained aircraft. HQ USAFE/A4MN will provide official updates to standards annually, if needed.

Section B—Monthly Logistics Report, Parts I and II

7. General. The monthly logistics report contains flying-hours, key maintenance and aircraft status data, and explanatory remarks used by USAFE managers to assess the relative health of the unit. These reports are also used to prepare the monthly HQ USAFE briefing.

7.1. For flying units, all data elements are required and must be reported each month. Reports are required until the last sortie is reported for unit deactivation or the transfer of a mission design series (MDS).

7.2. Part I consists of the unit's raw data, which is entered in the HQ USAFE/A4MN spreadsheet and sent via e-mail.

7.3. Part II contains the wing-approved detailed explanations for each metric that meets the reporting criteria in **paragraph 8.3.** This document is sent via e-mail.

8. Report Preparation. The proper and timely preparation of this report requires data from several submitting agencies. Units need to publish local procedures to identify data requirements, responsible agencies and input suspense dates. MMA will collect, validate and compile data inputs in the proper format.

8.1. Part I. Each data element in the provided spreadsheet is required. These mandatory data elements are listed in **Attachment 3**. They can be found in the spreadsheet by clicking on the "Raw Data" tab. The required elements are found in the red-colored section of the spreadsheet.

8.2. Part II. Provide an executive summary, per mission design (MD) for example: F-16, A-10, etc. of the month's major events that impacted the unit's mission. Also provide the top five monthly, quarterly and annual drivers in table format (**Attachment 4**) for the following rates: Total not mission capable maintenance (TNMCM), total not mission capable supply (TNMCS), cannibalization

(CANN), break, ground abort, air abort and repeat or recurring drivers every month for each MDS. Do not provide a separate narrative for the monthly, quarterly and annual drivers. Whenever possible try to correlate current problems with those items that historically appear as system drivers as well as the averages shown on the charts. Actual nomenclature and 5-digit work unit code (WUC) are required. Also include the number of instances or hours for the specific category. **INCLUDE A DETAILED EXPLANATION FOR ALL PART I DATA ELEMENTS THAT:**

8.2.1. Fail to meet the CAF or MAF standards or USAFE goals.

8.2.2. Show a trend over 3 or more months, regardless of whether or not they are within the CAF or MAF standards or USAFE goals.

8.2.3. Show an extreme departure from their normal range. An example of an extreme departure from the norm would be if a unit experienced 12 operation cancellations in 1 month when the average for the unit is three.

8.2.4. If the data looks questionable, then it most likely will need to be explained further.

8.3. In the Part II narratives, use the data element sequence and terminology from Part I. Units will provide explanations in Part II when key indicators do not meet CAF or MAF standards or USAFE goals. The narrative is not complete unless it covers the who, what, when, where, why, and how of the indicator. Narratives will not be a regurgitation of numbers. They must explain why an item drove unit performance. The "why" question will need to be asked several times. Details are important.

8.3.1. As a minimum, list the top five drivers. Break drivers down by system, subsystem, or component using the full 5-digit WUC, spell out acronyms, and then add aircraft data as additional information. Do not list not mission capable maintenance (NMCM), not mission capable supply (NMCS) and not mission capable both (NMCB) drivers; instead, provide high TNMCM and TNMCS items. Frequently, there is too much emphasis placed on the "hours" for the drivers, and not near enough placed on the number of "hits" those drivers incur. For example, "Phase" is listed as the main driver, even though it is ALWAYS a big driver for TNMCM and TNMCS. Many times items not "normally" a factor are causing problems but not even mentioned because they don't have the most hours. If various inspections drove NMC time, list the pacing mission capable (MICAP) parts. Look for and report on anomalies.

8.3.2. Analyze your data. Short-term trends, 3 and 6 months, are also important. Be proactive. If an indicator displays a negative trend for 3 consecutive months, or 4-5 of the last 6 months, explain the reasons.

8.3.3. Provide projected unit plans to fix pacing items. This is especially important when the solution to the problem is beyond the unit's control. If help is needed, then say so.

8.3.4. Submit thorough comments answering the questions at **Attachment 4**, which can be incorporated directly into the monthly briefing with minimal editing.

8.3.5. Remarks must fully explain the severity, extent and circumstances contributing to not meeting the standard. Preliminary explanations are acceptable when waiting for the results from a more in-depth study. Upon completion of the study, e-mail results to HQ USAFE/A4MN.

8.3.6. For TNMCS drivers and high CANN items, provide the full national stock number, full 5-digit WUC with nomenclature and explanation so supply experts in USAFE's Regional Supply Squadron work the right issues. "National stock number (NSN) not available" is unacceptable.

8.3.7. When TNMCM or TNMCS rates fail to meet the standard, discuss the number of phases (especially if there are more than usual), long-duration special inspections and total number of CANN aircraft with tail number. Also discuss the logic of what drove these actual decreases or increases, such as split operations or deployment preparation.

8.3.8. When referencing inspections and time compliance technical orders (TCTO), discuss the type of inspection and TCTO number. For Abort, Code-3 break and Fix rates provide aircraft tail number, 5-digit WUC, Job Control Number (JCN), complete discrepancy and corrective action.

8.3.9. The executive summary should be written in freestyle form and be three to five paragraphs in length, for each MD; for example: F-16, A-10 and so on. Summaries should contain an overview of Part I, and address number of split ops for the reporting month (**DO NOT LIST LOCATIONS**), and the Top 3 concerns needing HQ USAFE staff action.

8.3.9.1. Restriction on types of information. Only UNCLASSIFIED information is acceptable. Do not include CLASSIFIED information in the report. If we require classified information on any report we will specify the appropriate transmission method (usually SIPRNET e-mail).

8.3.9.2. Top 3 concerns will be topics that are out of the unit's control and HQ USAFE involvement is required to assist in the resolution. This is not a place to complain, but a place to raise issues to the appropriate level.

9. Report Format. Part I is preformatted in the spreadsheets. Units need only to fill in the current month's data. The format for Part II is a document as shown in **Attachment 4.** Primary comments in Part II need to be contained in three to four bullet statements that can be used verbatim in the monthly briefing. Additional data may be provided below the primary comments when the unit so desires.

9.1. The spreadsheet may be transmitted via e-mail in whole or as a stripped-down version. Any unit desiring to send a stripped down version (preferred method) may do so by cutting and pasting only the raw data from the spreadsheet and pasting it to a new spreadsheet. When this option is used, then the file needs to be saved as [unit][name][acft] (i.e., 52fwAl0.xls would indicate the 52 FW's A-10 aircraft).

9.2. HQ USAFE/A4MN will provide updated spreadsheets to the units at least annually. These updates may include format, standards, algorithm, or other changes.

10. Report Recipients and Suspense. Parts I and II **MUST** arrive at HQ USAFE Maintenance Analysis (HQ USAFE/A4MN) by **close of business the 11th calendar day of the month** following the reporting period. In no case will units hold either report from transmission due to missing data elements. Transmit all data available by the suspense date with the projected date of completion. Follow-up as soon as the remaining data is available.

11. Report Transmission. E-mail is the primary transmission method for reports. If circumstances warrant, the reports may be transmitted by priority message or fax. During communications MINIMIZE continue to transmit all reports.

11.1. Use the following organizational box or e-mail address for transmission of both reports: HQ USAFE/A4MN **mailto:Analysis Taskers@ramstein.af.mil** or **mailto:Ex0.usafe.a4analysis@rramstein.af.mil**.

11.2. Use the following phone number when transmitting by fax to HQ USAFE/A4MN: Civilian 06371-47-7545 or DSN 480-7545.

12. Nonstandard Reporting Procedures. During exercises, weapons training deployments, FOLs, contingency and wartime operations, Parts I and II reporting requirements and suspense remain unchanged. Analysis personnel must be available to ensure required data is collected, compiled and accurately reported. At those locations where no analysis function exists, the deployed flying unit commander will designate an office of responsibility to prepare and submit Parts I and II for deployed activities. The home unit will establish processes for collecting off-station data to meet its normal suspense to higher headquarters. Forward missing or incomplete data at the first opportunity, and include comments in the Part II denoting what data is missing and when it will be sent.

12.1. Deployed Reporting Procedures:

12.1.1. Format the reports to separately reflect deployed, home station and consolidated performance for each MDS. This may require submittal of three copies of the spreadsheet data area. Be sure to include details in Part II.

13. Report Correction. Report errors detected after initial transmission as soon as they are detected via telephone to HQ USAFE/A4MN, and follow up with the planned or actual corrective actions via e-mail as soon as the corrected data is available.

STEVEN J. SCHUMACHER, Colonel, USAF
Deputy Director of Logistics

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

Air force Policy Directive 21-1, *Air and Space Maintenance*

AFI 21-101, *Aerospace Equipment Maintenance Management*

AFI 21-103, *Equipment Inventory, Status and Utilization Reporting*

AFI 21-129, *Two Level Maintenance and Regional Repair of Air Force Weapon Systems and Equipment*

AFMAN 37-139, *Records Disposition Schedule*

AFI 38-201*, Determining Manpower Requirements*

USAFEI 11-101, *Management Reports and Guidance on the Flying Program*

USAFEI 21-105, *Aircraft Flying and Maintenance Scheduling Procedures*

The Statistics Home Page: **http://www.statsoft.com/textbook/stathome.html**

Hyper stat Online: **http://davidmlane.com/hyperstat/index.html**

Inferential Statistics: **http://vassun.vassar.edu/%7Elowry/webtext.html**

Introductory Statistics: Concepts, Models, and Applications: **http://www.psychstat.smsu.edu/sbk00.htm**

Statistical Training on the Web: **http://www.bioss.sari.ac.uk/~mike/webtra.htm**

Statistics and simulations: **http://huizen.dds.nl/~berrie/**

Statistics Every Writer Should Know: **http://www.robertniles.com/**

Lloyd Jaisingh, PhD, McGraw-Hill Publication, ISBN 0-07-135005-5, *Statistics for the Utterly Confused*

Kiemele, Schmidt and Berdine, Air Academy Press, ISBN 1-880156-06-7, *Basic Statistics Tools for Continuous Improvement*, 4th Edition

Levine, Berenson and Stephan, Prentice Hall, ISBN 0-13-095071-8, *Statistics for Managers using Microsoft Excel*

Forrest W. Breyfogle III, Wiley-Interscience, ISBN 0-471-29659-7, *Implementing Six Sigma*

Abbreviations and Acronyms

AMXS—Aircraft Maintenance Squadron

ASD—Aircraft Sortie Duration

AUR—Aircraft Utilization Report

AVG—Average

AWM—Awaiting Maintenance

AWP—Awaiting Parts

BAI—Backup Aircraft Inventory

CAF—Combat Air Forces

CAMS—Core Automated Maintenance System

CANN—Cannibalization

CLS—Contractor Logistics Support

COMUSAFE—Commander United States Air Forces in Europe

CMS—Component Maintenance Squadron

DEV—Deviation

EMS—Equipment Maintenance Squadron

FMC—Fully Mission Capable

FOL—Forward Operating Location

FSE—Flying Scheduling Effectiveness

FTD—Field Training Detachment

GA—Ground Abort

JCN—Job Control Number

JDD—Job Data Documentation

LCOM—Logistics Composite Model

LFD—Last Fly Day

MAT—Maintenance Training

MC—Mission Capable

MDS—Mission Design Series

MICAP—Mission Capability

MLR—Monthly Logistics Report

MMA—Maintenance Management Analysis

MSL—Maintenance Supply Liaison

MXG—Maintenance Group

NAF—Numbered Air Force

NMC—Not Mission Capable

NMCB—Not Mission Capable Both (Maintenance and Supply)

NMCM—Not Mission Capable Maintenance

NMCS—Not Mission Capable Supply

NSN—National Stock Number

OG—Operations Group

OIC—Officer In Charge

OPSTEMPO—Operational Tempo

O & M—Operations and Maintenance

PAA—Primary Aircraft Authorized

PDM—Program Depot Maintenance

PMC—Partially Mission Capable

PMCB—Partially Mission Capable Both (Maintenance and Supply)

PMCM—Partially Mission Capable Maintenance

PMCS—Partially Mission Capable Supply

SMO—Squadron Maintenance Officers

SUTE—Standard Utilization

TCTO—Time Compliance Technical Order

TNMCM—Total Not Mission Capable Maintenance

TNMCS—Total Not Mission Capable Supply

USAFE—United States Air Forces in Europe

UTE—Utilization

WLT—Weapons Load Training

WUC—Work Unit Code

Terms

Adds—Sorties added to the flying schedule after the daily schedule is officially finalized for next day.

Air Abort (Logistics)—Aircraft Commander declares aircraft failed to complete its primary or alternate mission for reasons related specifically to aircraft system malfunction while in flight.

Aircraft Possessed Hours—Total number of clock hours accumulated in a month for all unit possessed aircraft.

Attrition Aircraft—(used for inventory or assignment purposes only). Aircraft required to replace primary aircraft inventory losses in a given year.

Attrition Factors—Missions or sorties lost due to weather or other uncontrollable reasons. ***NOTE:*** Uncontrollable attrition is missions or sorties lost for reasons beyond control or authority of the wing commander.

Average Possessed Aircraft—Average number of unit possessed aircraft per day.

Average Sortie Duration—Average length of a sortie expressed in flying hours.

Break—System malfunction occurring in-flight that renders aircraft NMC after landing. A logistics air abort will be loaded as a break.

Cannibalization—Removal (action taken T) of components from one end item (aircraft or engine) for another aircraft, or components removed from an aircraft to fill a Mobility Readiness Spares Package (MRSP).

Data Integrity Error—DDR Records that had discrepancies found within the MIS that were in error. Count only the number of DDR records that had errors, not the errors in each record.

Delayed Discrepancy—This rate represents the average deferred discrepancies across the unit's average possessed aircraft fleet. Discrepancies are considered deferred when: a) they are discovered and the decision is made to defer them, b) discrepancies are scheduled with a start date greater than 5 days after the discovery date, or c) discrepancies are awaiting parts with a valid off base requisition. Delayed discrepancies may be Awaiting Maintenance (AWM) or Awaiting Parts (AWP).

Delayed Discrepancy AWM—Delayed discrepancies awaiting maintenance.

Delayed Discrepancy AWP—Delayed discrepancies awaiting parts.

Direct Labor Hours Assigned—The sum of active duty personnel assigned to labor code 100 times 8 for each weekday.

Fix Rate—Percent of aircraft landing NMC that are fixed within established time frames; typically within 4, 8 or 12 hours.

Fly Days, Monthly—Total weekdays in a month minus holidays, foreign national bank holidays, planned goal and family days.

Flying Schedule Effectiveness—A measurement of scheduled sorties that have no deviation before or after takeoff.

Ground Abort (Logistics)—Termination of sortie, departure, or launch due to malfunction that occurred during or after engine start and before takeoff.

Mission—The primary objective for which an aircraft is being operated. In relationship to sorties; there may be multiple sorties for a mission, or multiple missions in a sortie.

Mission Capable (MC)—Aircraft that were FMC or PMC.

Not Mission Capable Aircraft—Aircraft that were NMCM, NMCS, or NMCB.

Primary Aerospace Vehicle Authorized (PAA)—Aircraft authorized for performance of the unit’s mission (e.g. Combat, Combat Support, Training, Test and Evaluation, etc). The PAA forms the basis for the allocation of operating resources to include manpower, support equipment, and flying hour funds. The operating command determines the PAA required to meet their assigned missions.

Primary Aerospace Vehicle Inventory (PAI)—Aircraft assigned to meet the PAA.

Pilot Reported Discrepancy (PRD)—Discrepancies found by the aircrew, reported/written in the AFTO Form 781A, **Maintenance Discrepancy and Work Document**, and loaded to the CAMS/G081 debriefing subsystem.

Recurring Discrepancy—System or subsystem malfunction that reappears during the third, fourth, or fifth sortie (or attempted sortie) following its first appearance.

Repeat Discrepancy—Malfunction in a system or subsystem that reappears on the next sortie (or attempted sortie) following its first appearance.

Total Not Mission Capable Maintenance (TNMCM) Aircraft—Aircraft that were NMCM or NMCB.

Total Not Mission Capable Supply (TNMCS) Aircraft—Aircraft that were NMCS or NMCB.

Utilization Rate, Monthly (Sortie UTE)—Average number of departures or sorties flown per PAA aircraft for a month.

Attachment 2

ALGORITHMS FOR PERFORMANCE RATE COMPUTATIONS

Table A2.1. Algorithms.

RATE	EQUATION	NOTE
Maintenance Air Abort Rate	Air Aborts (Maintenance) x100 Sorties Flown	
Average Number of Aircraft Possessed	Possessed hours (in month or month to date) 24 hours x num of days in month or month to date	
Average Number of Aircraft in PDM/ MOD/DEPOT	Hours lost to PDM/MOD/DEPOT 24 hours x number of days in month or month to date	
Average Number of Aircraft Deployed	Total clock hours deployed 24 hours x number of days in month	Total clock hours deployed is equal to the total possessed hours accumulated by each aircraft during a deployment
Average Number of Monthly Engine Spares	Total available engine spares for O & M days Number of O & M days in the month	Daily available engine spares = number of serviceable, built-up engines minus obligations (holes)
Average Sortie Duration	Hours flown Sorties flown	
Deferred (Delayed) Discrepancy Rate (DDR). Monthly rates: Each Monday morning, analysts take a snapshot of each reportable MDS, of the total number of deferred discrepancies by using CAMS screen 774 - *Documented Discrepancies Summary (TRIC: DDS)* to retrieve deferred discrepancy data for both maintenance and supply, for the previous workweek. Included are all uncleared discrepancies on AFTO forms 781K, **Aerospace Vehicle Inspection, Engine Data, Calendar Inspection and Delayed Discrepancy Document**. The following calculations are applied to the "snapshot" information. Units use the following formulas to determine the cumulative monthly rates. At least four weekly rates must be used to calculate the cumulative monthly rate.		
AWM Per Aircraft	Total (Snapshot) AWM Discrepancies Average Aircraft Possessed	Round to nearest whole discrepancy
AWP Per aircraft	Total (Snapshot) AWP Discrepancies Average Aircraft Possessed	Round to nearest whole Discrepancy
Monthly Rates (AWM or AWP)	(AWM(Week 1)+AWM(Week 2)+AWM(Week 3)+AWM(Week 4)) Number Of Samples	

RATE	EQUATION	NOTE
Cannibalization Rate	Acft-to-acft + engine-to-acft + Acft and eng-to-MRSP kits cannibalizations x 100 / Sorties flown	Include NSN drivers in Part II Remarks
Capability Rates. ***NOTE:*** Possessed hours are the number of inventory hours all aircraft are possessed according to AFI 21-103, Equipment Inventory, Status, and Utilization, and equals all FMC, NMC and PMC hours.		
MC Rate	(FMC + PMCB + PMCM + PMCS) hours x 100 / Possessed hours	
FMC Rate	FMC hours x 100 / Possessed hours	
NMCB Rate	NMCB hours x 100 / Possessed hours	
NMCM Rate	NMCM hours x 100 / Possessed hours	
TNMCM Rate	(NMCB + NMCM) hours x 100 / Possessed hours	
NMCS Rate	NMCS hours x 100 / Possessed hours	
TNMCS Rate	(NMCB + NMCS) hours x 100 / Possessed hours	Include NSN drivers in Part II Remarks
Chargeable Cancellation Rate	Cancellations (MT, OPS, SUP) x 100 / Scheduled sorties + all additions	
Break Rate	Total Code-3 sorties x 100 / Sorties flown	
8-hour to 12-hour Fix Rate	Number of landing status Code-3 aircraft fixed within 8 to 12 hours / Number of aircraft landing status Code 3	Use the elapsed grounding to fly as reported on the CAMS Fix Time Report to compute Code 3 fix time.
Combined Abort Rate	Air + Ground aborts x 100 / Sorties flown + ground Aborts	
Engine FOD Rate	Chargeable engine FODS x 100 / Hours flown x number of aircraft engines	
Maintenance Ground Abort Rate	Ground aborts (Maintenance) x 100 / Sorties flown + ground aborts (Maintenance)	

RATE	EQUATION	NOTE
Hangar Queen (HQ) (Average) Rate.	Total Acft Days in all HQ Categories x 100 Days (in report period)	A Hangar Queen is an aircraft that has not flown for at least 30 consecutive days in their possessed status, or not flown within 10 days after being gained from depot possession (in "D/ B-Status" codes).
Late Takeoff Rate	Late takeoffs (MT, OPS, SUP, etc.) x 100 Sorties flown	Use this same format to determine early takeoff rates
Man-Hours per Cannibalization	Man-hours documented for "T" and "U" cannibalization actions x 100 Cannibalization actions ("T" actions)	
Repeat Rate	Number of repeats x 100 Total pilot-reported discrepancies	For combined repeat and recur rate, add repeats and recurs in the numerator
Recur Rate	Number of recurs x 100 Total pilot-reported discrepancies	For combined repeat and recur rate, add repeats and recurs in the numerator
Flying Scheduling Effectiveness Rate	Adjusted Sorties Sched - Charg Deviations x 100 Adjusted Sorties Scheduled	Adjusted Sorties Scheduled = Total Sorties Scheduled - Sorties Cancelled for Monthly/Yearly Utilization (UTE) Rate Achievement + Sorties Added for End of Fiscal Year UTE Close Out Total Deviations = MX, Supply & Ops. Early/Late takeoff, MX, Supply & Ops Adds/Deletes MX & Ops Ground Aborts

RATE	EQUATION	NOTE
Maintenance Scheduling Effectiveness Rate	Num Sched Mx Actions Completed On-Time x 100 Total Number of Mx Actions Scheduled	
Data Integrity Initial Error Rate	Number of JDDs with errors x 100 Total JDD sampling	

Attachment 3

7104 PART I FIELD DEFINITIONS

A3.1. The following table provides information regarding field names, their definitions and source. Use this table when completing reports.

Table A3.1. Field Definitions.

Field	Definition	Source
PAA	Primary Aircraft Authorized	Scheduling Section
HS PAA	Home Station Primary Aircraft Authorized	Scheduling Section
Cont PAA	Contingency Primary Aircraft Authorized	Scheduling Section
Total Sorties Sch Incl XC Sorties	Home Base Scheduled + Deployed Scheduled + Off Base Flown	CAMS - Ex. AUR/DOE
XC Sorties	Cross Country Sorties Flown	CAMS - Ex. AUR/DOE
HS Sorties	Home Station Sorties Flown	CAMS - Ex. AUR/DOE
Weapons Training Sorties (WTS)	Weapons Training Sorties Flown	CAMS - Ex. AUR/DOE
Functional CK Flight (FCF) Sorties	Functional Check Flight and Operational Check Flight Sorties Flown	CAMS - Ex. AUR/DOE
Alert Sorties	Alert Sorties Flown	CAMS - Ex. AUR/DOE
XC Hours	Cross Country Hours Flown	CAMS - Ex. AUR/DOE
HS Hours	Home Station Hours Flown	CAMS - Ex. AUR/DOE
WTS Hours	Weapons Training Hours Flown	CAMS - Ex. AUR/DOE
FCF Hours	Functional Check Flight and Operational Check Flight Hours Flown	CAMS - Ex. AUR/DOE
Alert Hours	Alert Hours Flown	CAMS - Ex. AUR/DOE
Mt Early/Lates	Number of Early or Late sorties caused by maintenance problems	CAMS - Ex. AUR/DDL
Supply Early/Lates	Number of Early or Late sorties caused by supply problems	CAMS - Ex. AUR/DDL
OPS Early/Lates	Number of Early or Late sorties caused by operational problems	CAMS - Ex. AUR/DDL
Mt Del	Number of sorties lost due to maintenance problems	CAMS - Ex. AUR/DDL
Supply Del	Number of sorties lost due to supply problems	CAMS - Ex. AUR/DDL
OPS Del	Number of sorties lost due to operational problems	CAMS - Ex. AUR/DDL

Field	Definition	Source
Mt, Ops, Sup Add	Number of sorties added due to maintenance, supply, or operations	CAMS - Ex. AUR/DDL
Mt GAB	Number of ground aborts due to maintenance problems	CAMS - Ex. AUR/DDL
OPS GAB	Number of ground aborts due to operational problems	CAMS - Ex. AUR/DDL
Mt AAB	Number of air aborts due to maintenance problems	CAMS - Ex. AUR/DDL
OPS AAB	Number of air aborts due to operational problems	CAMS - Ex. AUR/DDL
All Other Cancel/Del	Number of sorties lost NOT due to maintenance, supply, or operations	CAMS - Ex. AUR/DDL
All Other GAB	Number of sorties ground aborted NOT due to maintenance, supply, or operations	CAMS - Ex. AUR/DDL
All Other AA	Number of sorties air aborted NOT due to maintenance, supply, or operations	CAMS - Ex. AUR/DDL
All Other Adds	Number of sorties added NOT due to maintenance, supply, or operations	CAMS - Ex. AUR/DDL
Mt. Points Possible	Total maintenance points possible for the weekly scheduled maintenance	Scheduling Section
Mt. Points Earned	Total maintenance points earned for the weekly scheduled maintenance	Scheduling Section
Poss Hrs	Total number of possessed hours	CAMS - Ex. AVS/EST
MC Hrs	Total number of Mission Capable hours	CAMS - Ex. AVS/EST
FMC	Hrs Total number of Fully Mission Capable hours	CAMS - Ex. AVS/EST
PMCM Hrs	Total number of Partially Mission Capable for Maintenance hours	CAMS - Ex. AVS/EST
PMCB Hrs	Total number of Partially Mission Capable for Both maintenance and supply hours	CAMS - Ex. AVS/EST
PMCS Hrs	Total number of Partially Mission Capable for Supply hours	CAMS - Ex. AVS/EST
NMCM Hrs	Total number of Non-Mission Capable for Maintenance hours	CAMS - Ex. AVS/EST
NMCB Hrs	Total number of Non-Mission Capable for Both maintenance and supply hours	CAMS - Ex. AVS/EST

Field	Definition	Source
NMCS Hrs	Total number of Non-Mission Capable for Supply hours	CAMS - Ex. AVS/EST
# of Code 3s	Number of sorties that ended in a code 3 landing status	CAMS - Ex. FTR
# of 8-Hr Fixes/# of 12-Hr Fixes	Number of sorties that ended in a code 3 landing status that are returned to flyable status within 8/12 hours. ***NOTE:*** The fix time is taken from the ELAPSED GROUNDING TO FLY column	CAMS - Ex. FTR
CANNs	Number of maintenance actions documented with the 'T' action taken code	CAMS - Ex. QKB
CANN Man-Hrs	Number of man-hours expended in conjunction with maintenance actions documented with the "T" and "U" action taken codes	CAMS - Ex. QKB
AWP	Number of deferred discrepancies for parts	CAMS - Ex. DOM
AWM	Number of deferred discrepancies for maintenance	CAMS - Ex. DOM
Repeats	Number of pilot reported discrepancies that were coded as a repeat problem	CAMS - Ex. PRD
Recurs	Number of pilot reported discrepancies that were coded as a recurring problem	CAMS - Ex. PRD
Hangar Queens	Total number of days that aircraft were in a hangar queen status	Scheduling Section
Avg Eng Spares	Average number of engine spares available	Scheduling Section
Pilot Reported Discrep	Total number of pilot reported discrepancies (all CAP codes)	CAMS - Ex. PRD
Total Maint Dev	Total deviations to the flying schedule caused by maintenance	CAMS - Ex. AUR/DDL
Total Ops Dev	Total deviations to the flying schedule caused by operations	CAMS - Ex. AUR/DDL
Total Supply Dev	Total deviations to the flying schedule caused by supply	CAMS - Ex. AUR/DDL
Total HHQ Dev	Total deviations to the flying schedule caused by higher headquarters CAMS - Ex. AUR/DDL	
Total Weather Dev	Total deviations to the flying schedule caused by weather	CAMS - Ex. AUR/DDL

Field	Definition	Source
Total Sympathy Dev	Total deviations to the flying schedule caused by sympathy conditions CAMS - Ex. AUR/ DDL	
Total ATC Dev	Total deviations to the flying schedule caused by air traffic control	CAMS - Ex. AUR/DDL
Total Other Dev	Total deviations to the flying schedule caused by any other conditions than those listed above	CAMS - Ex. AUR/DDL
Cont Sorties	Flown Total sorties flown documented under a contingency aircraft utilization code	CAMS - Ex. AUR/DOE
Cont Hrs Flown	Total hours flown documented under a contingency aircraft utilization code	CAMS - Ex. AUR/DOE
HS Phase	Number of aircraft at home station that entered into a phase inspection (this is not based on schedules, but actual maintenance)	Phase section/Production Superintendent
DP/Cont Phase Aircraft	Number of aircraft at deployed locations that entered into a phase inspection (this is not based on schedules, but actual maintenance)	Phase section/Production Superintendent
HS CANN Aircraft	Number of aircraft at home station utilized as cannibalization aircraft	Phase section/Production Superintendent
DP/Cont Phase Aircraft	Number of aircraft at deployed location utilized as cannibalization aircraft	Phase section/Production Superintendent
Total JDDs with Errors	Number of JDDs with errors	Deficiency Analysis
Total JDDs Corrected	Number of JDDs with errors that were corrected	Deficiency Analysis

Attachment 4

SAMPLE 7104 PART II REPORT

A4.1. General Information. Do NOT edit data downloaded from CAMS, in any way. It is considered "source data." If the data is incorrect, it must be corrected in CAMS by the person or agency making the original input and then downloaded again.

A4.1.1. The following paragraph provides a guideline in developing a sound structure for the narratives:

A4.1.1.1. Ensure narratives give a macro overview of events affecting the metric for the last 6 months to 1 year (TCTOs, deployments, special circumstances, etc.). Explain WHO, WHAT, WHEN, WHERE, WHY and HOW for each. Narratives for unit rates must cover the background, findings and recommendations. Recommendations can be what the unit is doing to solve any problems, or can make reference to the request for help in the HQ USAFE issues section. Be sure to tie in monthly items to quarter and yearly drivers if they are related. This ensures a complete story and what is being done to fix it. Top drivers should be by system (first 2-digits of the WUC) and the drill down should include all 5-digits of the WUC comprising of approximately 65% to 75% of the hours.

A4.2. Submitting the PART II Report. When submitting the PART II Report, follow these instructions:

A4.2.1. Title. **RCS:** 7104 PART II FOR MONTH YEAR FROM XXX WING.

A4.2.2. Executive Summary. **March was yet another extremely challenging month, meeting 6 of the 10 USAFE standards.** We failed to meet the Code-3 Break Rate, 12-hour Fix Rate, Flying Scheduling Effectiveness Rate and Repeat or Recur Rate. To see information on these rates, please refer to their individual areas in the report. The 100 ARW supported a 4-aircraft deployment to Norway for 15 days and surged from 5 to 28 March for 1A1 BANNER missions. The overlap of these two events heavily taxed the unit across the board. Additionally, the unit supported a three-aircraft deployment to Iceland for 16-20 March for a Coronet to bring back USAFE fighters. The BANNER inflicted a particularly severe degree of turbulence as the last half of the taskings were cancelled at the last minute. Maintenance had generated aircraft for the majority of these late-cancelled taskings.

A4.2.3. Issues that the XXX WING are working. There are no issues at this time.

A4.2.4. HQ USAFE Issues. Disconnects with parts and multipoint refueling system (MPRS) parts problems.

A4.2.4.1. On more than one occasion, we did not receive parts in a timely manner due to process disconnects involving the Region and other agencies. Only after Maintenance Supply Liaison (MSL) personnel exerted extra effort to track down the details and contact item managers did we receive these parts. There is no viable reason for the delay, would HQ USAFE please look into this?

A4.2.4.2. The parts problems this month carried over from last month and will continue into the following months. Only one place, the Flight Refueling Line (FRL), can repair MPRS parts. Therefore, when MPRS parts break, we send them to FRL where they enter the repair queue and are returned to us when repaired. The transit time is approximately 4 days out and back. However, the repair time consumes at a minimum 4 to 6 weeks. This leaves our aircraft partially mission

capable if the MPRS parts are removed from the aircraft, not mission capable if left installed. Could HQ USAFE please look into this to see if there is another avenue to repair these parts or a way to purchase new ones?

A4.2.5. Ongoing Analysis studies or maintenance referrals. None at this time.

A4.3. Average Possessed Aircraft (APA)=14.2:

A4.3.1. Average possessed aircraft decreased from 14.7 to 14.2 with 335.5 noncomp hours. Aircraft 3538, 8879 and 8887 were the aircraft with non-comp time for the month. Due to rounding in the Core Automated Maintenance System (CAMS), the totals noncomp hours are 0.1 more than the individual hours for aircraft 3538, 8879, and 8887. Aircraft 3538 bought 95.9 noncomp hours for evaluation of a dent or gouge on the left fuselage. The repair from depot was to visually inspect for crack indications every 90 days and trim out gouged area at next fuel tank entry or PDM. Aircraft 8879 bought 70.5 noncomp hours while waiting for depot approval to weld a precooler exhaust fairing. Aircraft 8887 bought 169.0 noncomp hours for the PDM transfer inspection. The 100 ARW gained aircraft 4830 from McConnell on the 21st of this month. During the acceptance inspection at McConnell, several discrepancies were found and repaired. The aircraft had recently returned from a deployment and therefore was not prepped for transfer. Minor maintenance was accomplished while the host base completed their preps. Next, we found several open workable TCTO's that the base completed upon our request. Then, four main landing gear tires were identified as unacceptable per USAFE policy. However, per a local policy at McConnell, these tires were flyable. After some negotiation, McConnell agreed to provide the tires as long as we replaced them. The other discrepancies were: a fuel leak on the right wing above the number three engine, a weak auxiliary pump and a leaking left flap gear box. From our experience with this transfer, we suggest the following: the losing unit should not deploy an aircraft close to the transfer date. This can cause delays; the TCTO's took approximately 4 of the 8 days we were there, and maintenance that must be done by gaining unit due to time constraints. Also, the requirements of the accepting base should be taken into consideration to lessen the time required to accomplish the acceptance inspection.

A4.4. MC Rate (USAFE Standard 75.0%). 80.4%.

A4.4.1. Mission Capable Rate - Lagging indicator to measure overall maintenance readiness.

A4.4.2. Does a parts supportability problem exist? (See TNMCS Rate).

A4.4.3. What was the impact of any aircraft modifications?

A4.4.4. How many hours (TNMCM & TNMCS) were recorded for any special interest items? (New modification, LANTIRN, etc.).

A4.4.5. How well is the unit executing the flying hour program? Are there any aircraft availability issues present that prevent the unit from smooth execution of the flying hour program? (PAA, Backup Aircraft Inventory (BAI) issues, etc.).

A4.4.6. Is the emphasis on fixing jets fast or fixing jets well? (See Repeat/Recur Rate).

A4.4.7. The MC rate increased this month from 79.5 percent to 80.4 percent, meeting the USAFE standard. The driving systems will be highlighted under the TNMCM and TNMCS information. The rate for the quarter is 81.9 percent and 76.9 percent for the year, both rates meeting the standard.

A4.5. TNMCM Rate (USAFE Standard 18.0%). 13.5%.

A4.5.1. Total Not Mission Capable Maintenance Rate - Lagging indicator to measure readiness mainly based upon maintenance reasons.

A4.5.2. What is the "theme" describing the overall out-for-maintenance conditions recorded? Describe briefly the main reasons why the TNMCM rate is increasing or decreasing.

A4.5.3. Do many hard breaks (long fixes) prevent the unit from turning a jet for many hours and/or days? What is the impact of the long fixes? E.g. 8-hour (fighter) or 12-hour (all other aircraft) fixes (See also Break and Fix Rates).

A4.5.4. What are the normal phase times (measured in days, hours, weeks) for aircraft assigned? Are you meeting those times?

A4.5.5. What is the average number of phases performed per month under normal circumstances?

A4.5.6. What is the break-even point for the number of phases conducted before established standards are affected?

A4.5.7. How much "other" maintenance is being accomplished while the aircraft is down for phase? (Other maintenance may be TCTOs - depot or field, delayed discrepancies, etc.).

A4.5.8. What is the level of qualified technicians on-hand to fix jets? What percentage of the workforce is experienced? In training? E.g. 3-levels, 5-levels, 7-levels (See also Fix Rate).

A4.5.9. How are open maintenance discrepancies transferred between shifts? Does the flying schedule push most repairs from day shift to other shifts? Are other shifts putting off repairs to other shifts?

A4.5.10. Does a lack of tools or support equipment prevent timely accomplishment of aircraft maintenance? (See Fix Rate).

A4.5.11. Does maintenance continually put off non-grounding write-ups that lead to excessive awaiting maintenance (AWM) discrepancies?

Table A4.1. Monthly TNMCM High Drivers.

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT
11X		562.9	35.8%	
	11EAM	134.5	SECTION 48 SKIN PANELS	A2605
	11DBN	132.8	SECTION 46 SKIN PANELS	A4835
	118DG	100.9	RIGHT HAND DUCT COWL	A0302
46X		352.2	22.4%	
	46422	96.9	CELL #0 ACCESS DOOR	A4829
	4624B	94.5	#4 MAIN TANK ACCESS DOOR	A2605
27X		211.6	13.4%	
	27HB0	98.7	ENGINE NACELLE	A0302
	27HAA	60.5	FUEL PUMP	A8008
14X		162.9	10.4%	
	14CG0	102.0	STABILIZER ACTUATED TAB ASSEMBLY	A3538

Table A4.2. Quarterly TNMCM High Drivers.

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT
11X		562.9	35.8%	
	11EAM	134.5	SECTION 48 SKIN PANELS	A2605
	11DBN	132.8	SECTION 46 SKIN PANELS	A4835
	118DG	100.9	RIGHT HAND DUCT COWL	A0302
46X		352.2	22.4%	
	46422	96.9	CELL #0 ACCESS DOOR	A4829
	4624B	94.5	#4 MAIN TANK ACCESS DOOR	A2605
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	27HB0	98.7	ENGINE NACELLE	A0302
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Table A4.3. Yearly TNMCM High Drivers.

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT
11X		562.9	35.8%	
	11EAM	134.5	SECTION 48 SKIN PANELS	A2605
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	27HB0	98.7	ENGINE NACELLE	A0302
	27HAA	60.5	FUEL PUMP	A8008
14X		162.9	10.4%	
	14CG0	102.0	STABILIZER ACTUATED TAB ASSEMBLY	A3538

A4.6. TNMCS Rate (USAFE Standard 15.0%). 10.7%.

A4.6.1. Total Not Mission Capable Supply - Lagging indicator to measure readiness mainly based upon supply reasons.

A4.6.2. What is the timeliness of off-aircraft and/or maintenance shop repair/production?

A4.6.3. Is there a lack of in-shop repair data and/or experience?

A4.6.4. What are the stock levels of the components in question?

A4.6.5. Is there a lack of parts worldwide for the components causing the out-for-supply conditions?

A4.6.6. What is the lowest issue effectiveness items - are they the same as “hard-broken” drivers?

A4.6.7. Do transportation difficulties exacerbate out-for-supply times recorded?

A4.6.8. If the TNMCS rate is continually showing a trend in the wrong direction, what is needed to make the wing institutionally well? Who needs to initiate corrective action to the process? Wing? HQ? Depot? Air Staff?

A4.6.9. The TNMCS rate decreased from 11.0 percent to 10.7 percent, meeting the USAFE standard. There were 637.9 NMCS hours and 495.8 NMCB hours for a total of 1,133.7 TNMCS hours. Although our total nonmission capable for supply met the standard for the month, it may soon see an increase. According to MSgt Escabar, our project code for ordering parts has recently changed due to the fact we are no longer directly supporting Operation ENDURING FREEDOM (OEF). Therefore, parts pulled from AMARC will now take 10 to 20 days instead of the previous 3 to 5. Recommend keeping the project code if possible, if not would like HQ USAFE to look into this issue to alleviate the increase of “S” time that will be accumulated.

Table A4.4. Monthly TNMCS High Drivers.

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT	NSN
46X		241.7	37.8%		
	46410	112.7	FORWARD BODY BLADDER TYPETANKS	A4829	1560-00-607-5152
	4624B	94.5	#4 MAIN TANK ACCESS DOOR	A2605	1560-00-992-8186
14X		207.4	32.4%		
	14CG0	102.0	STABILIZER ACTUATED TAB ASSEMBLY	A3538	1560-00-445-9072
	14BAB	56.0	PEDAL JACKSHAFT	A4829	1680-00-968-1085
03X		96.9	15.2%		
	03410	75.7	1ST PERIODIC INSPECTION	A3538	1560-00-445-9072
27X		60.8	9.5%		
	27HAA	60.5	FUEL PUMP	A8008	3010-01-367-2917

Table A4.5. Quarterly TNMCS High Drivers.

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT	NSN
46X		241.7	37.8%		
	46410	112.7	FORWARD BODY BLADDER TYPETANKS	A4829	1560-00-607-5152
14X		207.4	32.4%		
	14CG0	207.4	STABILIZER ACTUATED TAB ASSEMBLY	A3538	1560-00-445-9072
	14BAB	56.0	PEDAL JACKSHAFT	A4829	1680-00-968-1085
03X		96.9	15.2%		
	03410	75.7	1ST PERIODIC INSPECTION	A3538	1560-00-445-9072
27X		60.8	9.5%		
	27HAA	60.5	FUEL PUMP	A8008	3010-01-367-2917

Table A4.6. Yearly TNMCS High Drivers..

SYSTEM	SUBSYSTEM	HOURS	NARRATIVE	ACFT	NSN
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27X		60.8	9.5%		
	27HAA	60.5	FUEL PUMP	A8008	3010-01-367-2917

A4.7. Cannibalization Rate (USAFE Standard 10.0%). 9.4%:

A4.7.1. Cannibalization Rate - Lagging indicator to measure cannibalizations per sortie flown

A4.7.2. What trends are occurring in the cannibalization rates? Which systems and/or sub systems stand out the most? Does a trend or trends exist over any period?

A4.7.3. What is the plan to remedy the high cannibalization rate? What actions should be taken? By whom?

A4.7.4. Does a history exist for the same cannibalization part?

A4.7.5. What were the reasons behind the cannibalization? Out-for-supply? Maintenance convenience? Was it a good CANN?

A4.7.6. Did the cann take place for a repeat/recur?

A4.7.7. Can the cannibalization action be associated with a previous event or failure?

A4.7.8. Were other parts broken in the cannibalization process?

A4.7.9. How do the cannibalizations correlate with the out-for-supply components?

A4.7.10. How are cannibalizations being accounted for? i.e.: Do the cannibalization logs match CAMS?

A4.7.11. Do notes exist of cannibalization actions initiated but cancelled?

A4.7.12. What is the time it takes to get a part once the cannibalization took placed?

A4.7.13. Does the documentation of cannibalizations seem reasonable? How many items are coded to the next higher assembly or subsystem level? Not otherwise coded (NOC) e.g. 13L99

A4.7.14. The cannibalization rate decreased from 17.4 percent to 9.4 percent, meeting the USAFE standard. There were 163 cannibalizations contributing towards a rate of 10.3 percent, failing to meet the USAFE standard. Four of the six generator control unit (GCU) CANNs were accomplished during a TDY in December 2001. The first CANN was from aircraft 0302 to aircraft 2605 in order to bring aircraft 2605 to MC status. Then, the part was ordered and installed on aircraft 0302 but CANNED to aircraft 4838 to bring 4838 MC. The part was then CANNED back to 0302 from 4838, 2 days later. However, in order to bring aircraft 8008 to MC the GCU unit was then CANNED from 0302 to this aircraft. There were five items CANNED three or more times.

Table A4.7. Monthly CANN High Drivers.

WUC	Noun	NSN	Times Canned	Percentage of Total
42299	CPIG UNDERVOLTAGE RELAY	5945005817356	4	11.1%
14BKA	Q INLET HEATER	1560009798582	3	8.3%
14AG0	SPRING CART	1680007785288	2	5.6%
27CBE	STARTER VALVE	4810012418854	2	5.6%
42330	GENERATOR UNIT	6110011414879	2	5.6%

Table A4.8. Quarterly CANN High Drivers.

WUC	Noun	NSN	Times Canned	Percentage of Total
42299	CPIG UNDERVOLTAGE RELAY	5945005817356	4	11.1%
14BKA	Q INLET HEATER	1560009798582	3	8.3%
14AG0	SPRING CART	1680007785288	2	5.6%
27CBE	STARTER VALVE	4810012418854	2	5.6%
42330	GENERATOR UNIT	6110011414879	2	5.6%

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14AG0	SPRING CART	1680007785288	2	5.6%
27CBE	STARTER VALVE	4810012418854	2	5.6%
42330	GENERATOR UNIT	6110011414879	2	5.6%

A4.8. Abort Rate (USAFE Standard 7.0%). 4.7%:

A4.8.1. Abort Rate - Leading indicator of aircraft reliability and sometimes quality of maintenance performed. Represents the number of aborts per sortie flown.

A4.8.2. What are the abort trends?

A4.8.3. Which systems stand out when compared to historical data? Which components stand out in individual systems?

A4.8.4. If it was a repeat/recur problem - were the fixes good ones? - Indicator of possible concerns/ weakness in training or lack of T.O.s

A4.8.5. Were the aircrews proficient on the newer systems, if any?

A4.8.6. The abort rate decreased from 10.0 percent to 4.7 percent, meeting the USAFE standard. There were 5 air aborts and no ground aborts. Aircraft 3551's air abort for the interphone started last month and had several repeats and recurs. Therefore, the determination was made to impound the aircraft to allow maintenance necessary time to "tear into" the system and find a permanent fix. Maintenance found broken wiring in the handle of the U-92, bad splices in the control stick grip and an intermittent signal. The boomer control stick grip and the U-92 were replaced and a CAIU removed and replaced for the intermittent signal. Since these repairs, aircraft 3551 has flown three sorties without another interphone occurrence.

Table A4.10. Monthly Abort High Drivers.

System WUC	Air Aborts	Ground Aborts	System Name	Percentage of Total
46	2	3	FUELS	22.7%
11	1	3	AIRFRAME	18.2%
64	2	1	BOOM	13.6%

Table A4.11. Quarterly Abort High Drivers.

System WUC	Air Aborts	Ground Aborts	System Name	Percentage of Total
46	2	3	FUELS	22.7%
11	1	3	AIRFRAME	18.2%
64	2	1	BOOM	13.6%

Table A4.12. Yearly Abort High Drivers.

System WUC	Air Aborts	Ground Aborts	System Name	Percentage of Total
46	2	3	FUELS	22.7%
11	1	3	AIRFRAME	18.2%
64	2	1	BOOM	13.6%

A4.9. Break Rate (USAFE Standard 9.0%). 9.4%:

A4.9.1. Break Rate - Leading indicator of aircraft system reliability measured by the percentage of sorties that land Code-3.

A4.9.2. Does a trend exist in repeated components and/or failing systems?

A4.9.3. Which systems stand out? How do the systems compare with history?

A4.9.4. Were the Code-3 breaks recorded repeat/recur discrepancies?

A4.9.5. The break rate decreased from 13.0 percent to 9.4 percent, failing to meet the USAFE standard. There were 12 breaks during the month. Aircraft 3551's Code-3 break for the interphone started last month with repairing broke wiring and replacing the interphone control relay. Therefore this month, the determination was made to impound the aircraft to allow maintenance necessary time to "tear into" the system and find a permanent fix. Maintenance found more broken wiring in the handle of the U-92, bad splices in the control stick grip and an intermittent signal. The boomer control stick grip and the U-92 were replaced and a CAIU removed and replaced for the intermittent signal. Since these repairs, aircraft 3551 has flown three sorties without another interphone occurrence.

Table A4.13. Monthly Break High Drivers.

System	Number of Occurrences	WUC	Acft	System Narrative
14	5	14BKA	A4835	Flight Controls
72	6	729B0	A2605	Radar Navigation
46	2	46750	A8025	Fuel System
64	2	64400	A3551	Intercommunications System
51	1	51926	A7978	Instruments

Table A4.14. Quarterly Break High Drivers.

Number	System	Percentage of Total
10	FUELS	30.3%
5	INTERPHONE	15.2%
3	LANDING GEAR	9.1%
3	INSTRUMENTS	9.1%
3	RADAR NAVIGATION	9.1%

Table A4.15. Yearly Break High Drivers.

Number	System	Percentage of Total
10	FUELS	30.3%
5	INTERPHONE	15.2%
3	LANDING GEAR	9.1%
3	INSTRUMENTS	9.1%
3	RADAR NAVIGATION	9.1%

A4.10. Fix Rate (USAFE Standard 63%). 58.3%.

A4.10.1. Fix Rate - Lagging indicator measuring the rate Code-3 write-ups are repaired within 8 or 12 hours from landing.

A4.10.2. Are hard breaks causing a consistently low fix rate? Explain.

A4.10.3. How is the wing executing the flying schedule? What flying window is being used? Does the window allow another maintenance shift to keep up with discrepancies generated earlier? Does this lead to any over/under-utilized jets?

A4.10.4. What are the average times it takes to fix broken components once they land Code-3? Do the times significantly deviate from the computed average? What are the reasons?

A4.10.5. Which jobs are continually falling within the 8 to 9 hour window?

A4.10.6. Do manning or training issues exist? What is the level of qualified technicians on-hand to fix jets? What percentage of the workforce is experienced? In training? E.g. 3-levels, 5-levels, 7-levels (See also Repeat/Recur).

A4.10.7. Does a lack of tools or support equipment prevent timely accomplishment of aircraft maintenance?

A4.10.8. The fix rate increased from 41.7 to 58.3 percent, failing to meet the USAFE standard. There were 12 Code-3 breaks for the month, 5 of which took over 12 hours to fix. Aircraft 3551's Code-3 break for the interphone started last month with repairing broken wiring and replacing the interphone control relay. Therefore, this month, the determination was made to impound the aircraft to allow maintenance necessary time to "tear into" the system and find a permanent fix. Maintenance found more broken wiring in the handle of the U-92, bad splices in the control stick grip and an intermittent signal. The boomer control stick grip and the U-92 were replaced and a CAIU removed and replaced for the intermittent signal. Since these repairs, aircraft 3551 has flown three sorties without another interphone occurrence.

Table A4.16. Monthly Fix High Drivers.

System	Number of Occurrences	WUC	Acft	System Narrative
14	5	14BKA	A4835	Flight Controls
		14BB0	A2605	Flight Controls
46	2	46750	A8025	Fuel System
64	2	64400	A3551	Intercommunications System
51	1	51926	A7978	Instruments

Table A4.17. Quarterly Fix High Drivers.

Number	System	Percentage of Total
4	FUELS	36.4%
3	INTERPHONE	27.3%
2	LANDING GEAR	18.2%
2	FLIGHT CONTROLS	18.2%

Table A4.18. Yearly Fix High Drivers.

Number	System	Percentage of Total
14	FUELS	36.4%
13	INTERPHONE	27.3%
12	LANDING GEAR	18.2%
12	FLIGHT CONTROLS	18.2%

A4.11. Flying Scheduling Effectiveness Rate (USAFE Standard 84.0%). 81.0%:

A4.11.1. Flying Scheduling Effectiveness - Lagging indicator of wellness of the flying schedule and degree of coordination between MXG/OG.

A4.11.2. What are the background factors affecting the flying scheduling effectiveness (FSE)1 rate?

A4.11.3. What were the root causes for the deviations recorded?

A4.11.4. If the FSE is consistently below the standard, why? Explain the theme to explain the aberrations in the flying schedule.

A4.11.5. The Flying Scheduling Effectiveness Rate decreased from 85.5 percent to 81.0 percent, failing to meet the USAFE standard. There were 142 sorties scheduled with 27 chargeable deviations, of which operations accounted for 21 and maintenance accounted for six. Operations had twelve additions, six cancellations and three late takeoffs. Maintenance had one ground abort and five air aborts. The majority of the operations additions occurred to make use of sorties after higher headquarter cancellation.

Table A4.19. Monthly FSE High Drivers.

Number	Deviation Type	Percentage of Total
28	OPERATIONS ADDITIONS	36.8%
14	MAINTENANCE GROUND ABORTS	18.4%
12	OPERATIONS CANCELLATIONS	15.8%

Table A4.20. Quarterly FSE High Drivers.

Number	Deviation Type	Percentage of Total
58	OPERATIONS ADDITIONS	45.8%
32	MAINTENANCE GROUND ABORTS	20.4%
22	OPERATIONS CANCELLATIONS	15.8%

Table A4.21. Yearly FSE High Drivers.

Number	Deviation Type	Percentage of Total
128	OPERATIONS ADDITIONS	36.8%
114	MAINTENANCE GROUND ABORTS	18.4%
112	OPERATIONS CANCELLATIONS	15.8%

A4.12. Repeat/Recur Rate (USAFE Standard 6.0%). 9.5%:

A4.12.1. Repeat/Recur Rate - Lagging indicator and perhaps the most important and accurate measure of the quality of maintenance performed by a unit.

A4.12.2. If the repeat/recur rate is high, what are the troubleshooting procedures being used?

A4.12.3. Is the emphasis on fixing jets fast or fixing jets well? Is there inordinate pressure to commit aircraft to flying schedule or subsequent sorties?

A4.12.4. Do manning or training issues exist? What is the level of qualified technicians on-hand to fix jets? What percentage of the workforce is experienced? In training? E.g. 3-levels, 5-levels, 7-levels.

A4.12.5. What are the root causes and lasting solutions?

A4.12.6. The repeat/recur rate decreased from 16.0 percent to 9.5 percent, failing to meet the USAFE standard. There were four repeating and nine recurring discrepancies. Aircraft 3551's recur for the interphone started last month with repairing broke wiring and replacing the interphone control relay. Therefore this month, the determination was made to impound the aircraft to allow maintenance necessary time to "tear into" the system and find a permanent fix. Maintenance found more broken wiring in the handle of the U92, bad splices in the control stick grip and an intermittent signal. The boomer control stick grip and the U-92 were replaced and a CAIU removed and replaced for the intermittent

signal. Since these repairs, aircraft 3551 has flown three sorties without another interphone occurrence.

Table A4.22. Monthly Rep/Rec High Drivers.

Date	Acft	WUC	Original Discrepancy	Original Corrective Action Corrective Action	Type
04-Mar-02	A3538	52A00	AUTOPILOT KICKED OFF ON DESCENT 2 PLUS 10 HOURS INTO FLIGHT	CLEARED FAULT CODES	ORIGINAL
04-Mar-02	A3538	52AK0	AUTOPILOT WAS PULSING DURING FLIGHT IN VG. SWITCHED TO INU2 AND IT SEEMED TO STOP	R2 AUTO PILOT GYRO	REPEAT
01-Mar-02	A3538	51DA0	ADC2 FAILED ON RETURN APPROX 4 HOURS INTO FLIGHT TAS, TEMP PROBE, STAT AIR TEMP FAILED	TIGHTENED TAT PROBE CANNON PLUG	ORIGINAL
04-Mar-02	A3538	51DA0	ADC #2 FAIL TEMP SENSOR, TRUE AIR SPEED, STATIC AIR	TIGHTENED CANNON PLUG ON TAT PROBE	RECUR

Table A4.23. Quarterly Rep/Rec High Drivers.

Total Repeats & Recurs	Repeats	Recurs	System	Percentage of Total
8	6	2	FUELS	21.1%
8	3	5	AUTOPILOT	21.1%
5	2	3	INSTRUMENTS	13.2%
4	3	1	INTERPHONE	10.5%
4	2	2	RADAR NAVIGATION	10.5%

Table A4.24. Yearly Rep/Rec High Drivers.

Total Repeats & Recurs	Repeats	Recurs	System	Percentage of Total
8	6	2	FUELS	21.1%
8	3	5	AUTOPILOT	21.1%
5	2	3	INSTRUMENTS	13.2%
4	3	1	INTERPHONE	10.5%
4	2	2	RADAR NAVIGATION	10.5%

A4.13. Hangar Queen Status:

A4.13.1. A1605 (Locally Managed HQ) last fly day (LFD) 31 December due to PACS 45 Modification. Air Data Processor MICAP, Rt. Stab Actuator replaced for nutplate and CGB wire repairs. Flew on 3 March. Down 63 days total, eight possessed.

A4.13.2. A1311 (CAT-1 Locally Managed HQ) LFD 6 Feb due to CANN/rebuild. Flew on 16 March. Down 39 days total, 39 possessed.

A4.13.3. A1309 (CAT-1 Locally Managed HQ) LFD 25 Feb due to CANN/rebuild. Impounded on 26 April for lost set screw. Flew on 1 April. Down 36 days, 36 possessed.

A4.13.4. A1335 (Locally Managed HQ) possessed for 16 and down for 43 days. LFD was 17 Feb. Stab actuator TCTO, PACS 45 modification and a torn CFT seal kept this jet grounded. Parts on order included a CFT splice and a left stab actuator.

A4.13.5. A1315 (Locally managed HQ) down for 41 days. LFD was 19 Feb. The aircraft was down for #1 HPO as Feb rolled into March with a canopy MICAP. Afterwards it was down because the #1 engine would not engage. This jet rolled into PACS 45 mod on 8 March. Parts on order include the canopy, ramp actuator.

A4.13.6. A1317 (Locally managed HQ) possessed and down for 35 days. LFD was 19 Feb. The aircraft was a CANN bird as Feb rolled into March. After CANN rebuild the JFS would not engage. A throttle quadrant and the CGB were replaced. The jet was impounded for a lost thread protector. A PC2 line was changed. Parts on order included a MPDP, FCC and an oxygen regulator. This jet flew 29 March and was released from HQ status.

A4.14. Maintenance Scheduling Effectiveness Rate (USAFE Standard 95.0%) 95.8%:

A4.14.1. We had 115 scheduled maintenance actions completed on-time out of 120 maintenance actions scheduled resulting in a rate of 95.8 meeting the USAFE standard.

Attachment 5

DETAILED INSTRUCTIONS FOR THE OPSTEMPO TOOL

Section A5A—OPSTEMPO Tool Instructions

A5.1. Overview

A5.1.1. HQ USAFE/A4MN developed a tool for units to identify trigger points at which mission accomplishment may be affected by Operational Tempo (OPSTEMPO). The tool uses a base's normal operations at home station and compares home station with up to two deployments to identify trigger points. This is **not** a capabilities tool.

A5.1.2. The OPSTEMPO tool takes into account an organizations authorized manning, assigned manning, unfunded positions and personnel not available by 3, 5 and 7-skill level for all 2AXXX AFSCs. This information, combined with the units total primary aircraft authorized (PAA) and Air Force established standard UTE rate (SUTE) provides an easy to read green, yellow and red stoplight to indicate when there may be problems with a unit's ability to accomplish the mission.

A5.1.3. There are two other built-in stoplights associated with the term "production" and with the UTE rate. The triggers for both of these are exceeding production capability and not achieving the SUTE rate.

A5.2. Definitions/Instructions

A5.2.1. Base normal operations: Numbers that are representative of normal home station operations.

A5.2.2. Total PAA: The total number of primary aircraft authorized.

A5.2.3. AF Standard UTE: The standard UTE established by the Air Force. Always compute UTE for fighters using sorties flown divided by PAA and for heavies and rotor aircraft use hours flown divided by PAA.

A5.2.4. Authorized 3-, 5- and 7-level: The total authorized personnel in AFSC 2AXXX positions listed in the Unit Manpower Document (UMD).

A5.2.5. Assigned 3-, 5- and 7-level: The total assigned personnel in AFSC 2AXXX from the Unit Management Personnel Roster, (UMPR) categorized by skill level.

A5.2.6. Out of Hide positions: The total number of personnel by skill level category that are assigned to the unit, but are not active in their career field core tasks. An example would be the Unit Resource Advisor, Unit Deployment Monitor or Honor Guard duty, etc.

A5.2.7. Personnel not available: The total number of people by skill level category that are assigned to the unit, but are not available to perform their core competencies. For example personnel on leave, unrelated TDY, compensatory time off, an Airman assigned to FTAC, etc.

A5.2.8. Production potential: This is an index that represents the production potential based on total personnel assigned and total authorized personnel. The algorithm at **Figure A5.1.** is used for this computation.

Figure A5.1. Production Potential Algorithm.

$$P1 = \frac{(\Sigma\, AssignedSkillLevel \times Multiplier)}{(\Sigma\, AuthorizedSkillLevel \times Multiplier)}$$

A5.2.9. Production available: This index represents the production available based on available personnel performing their core competencies and total authorized personnel. The algorithm at **Figure A5.2.** is used for this computation.

Figure A5.2. Production Availability Algorithm.

$$P1 = \frac{(\Sigma\, AssignedSkillLevel \times Multiplier)}{(\Sigma\, AuthorizedSkillLevel \times Multiplier)}$$

A5.2.10. Multiplier: The multiplier is an index used to represent an average percentage of time that a specific skill level is productive accomplishing core competencies in their AFSC. The multiplier is built into the formula and can't be manipulated.

A5.3. Using the OPSTEMPO Tool

A5.3.1. The light blue cells are those that require unit input.

A5.3.2. Fill in the information in the top portion of the spreadsheet under the heading "Normal Base Operations" (**Table A5.1.**). Remember that by definition these numbers need to represent your home station manning and flying operations under normal conditions.

Table A5.1. OPSTEMP TOOL.

OPSTEMPO TOOL				
BASE Normal Operations				
		Total PAA		AF Standard UTE
		24		16.3
		Use Only 2A AFSC's		
	Total	3-Level	5-Level	7-Level
Authorized	179	48	98	33
Assigned	160	62	73	25
Out of Hide Positions	0	0	0	0
Pers Not Available	0	0	0	0
Available Pers	160	62	73	25
Production Potential	0.8088			
Production Available	0.8088			

A5.3.3. In this example, there are no out of hide positions filled by a 2AXXX AFSC and no leaves, etc.

A5.3.4. Next, fill in the spreadsheet portion under the heading "Deployment Commitments" (**Table A5.2.**). There are three columns with the headings Home station, deployment 1 and deployment 2. Fill in the total numbers that will be left at home station by skill level. Use the deployment column that reflects the units contingency/deployment tasking and fill in with total numbers in each category.

A5.3.5. Be aware that the right most section of the spreadsheet (not visible in **Table A5.2.**) will inform the user of any discrepancies between the top portion (**Table A5.1.**) of the spreadsheet and the totals for all three columns in the bottom part of the spreadsheet. The totals for the two sections should match (**Table A5.2.**).

A5.3.6. With the information filled in, the user can see the production index for the three separate columns. This allows for any adjustments to be made so no one place is left with manning that can't accomplish the mission (**Table A5.2.**).

A5.3.7. Next input the total Units PAA aircraft for the different categories. For the tools purposes the deployed PAA will be the total aircraft that deployed (**Table A5.2.**).

A5.3.8. The number of sorties programmed is the total sorties scheduled for each location. This information will be used to compute a UTE rate for the three columns (**Table A5.2.**).

A5.3.9. The user can now see the effects on the UTE rate for each location.

Table A5.2. Deployment Commitments.

		DEPLOYMENT COMMITMENTS		
		Skill-Level Breakout		
		Home Station	Deployment 1	Deployment 2
Definitions per AFI 38-201	3-Level	45	17	
5 Days/8 hours NORMAL	5-Level	28	45	
6 Days/8 Hours EXTENDED	7-Level	8	17	
6 Days/10 hours WARTIME	Total	81	79	0
6 Days/12 Hours SURGE	Production	0.6909	0.9266	N/A
	Maintenance Shifts	SURGE	NORMAL	N/A
		Home Station	Deployment 1	Deployment 2
	Units PAA	12	12	
	Sorties Programmed	150	242	
	Recommended Sorties	136	240	0
	Max Sortie	170	300	0
		Exceeds Recommended	Exceeds Recommended	
	Sortie UTE Rate	12.5	20.2	N/A
	Total Combined UTE Rate	16.3		

A5.3.10. The total combined UTE rate stoplight gives a red, yellow or green indication based on a combination of Home Station and Deployed UTE rate (**Table A5.2.**). This indicator has to be interpreted at the same time the user considers the two previous smaller stoplights for sortie UTE rate and Production.

A5.3.11. With the tool, users can input different values and come up with a mix that allows for mission accomplishment with the correct level of UTE that satisfies the Flying Hour Program and the best skill-level mix that ensures personnel aren't being over deployed to a location at the expense of manning at home station.

Section A5B—Standard UTE (SUTE) Airframe Capability Model Instructions

A5.4. Overview

A5.4.1. HQ USAFE/A4MN developed a capability model that can be used by both fighter and heavy units in developing a units First Look capability. It can also be used as a monthly tool for managing the fleet. The model is based on Standard Utilization (SUTE) rates established by HQ USAF and the Long Look Fiscal Year Defense Program (FYDP) allocated flying hours. The intent of this model is not to dispute the SUTE, but to provide unit leaders a tool that provides different options including, what if scenarios, to manage their fleet in meeting the annual flying hour/SUTE requirements.

A5.4.2. There are four built-in stoplights associated with the capability of the unit. The first is a comparison of SUTE with monthly capability. The second compares the FYDP annual program with the sum of the program executed by the unit. The third compares average sortie duration (ASD) with the Long Look requirement. The fourth is for use after execution and compares the actual UTE to the Long look. The tool also displays the UTE rate computed by using only the number of aircraft available to the unit, providing a truer picture of the utilization of the aircraft being used to fly the flying hour program.

A5.5. Definitions/Instructions

A5.5.1. Base normal operations: Numbers that are representative of normal home station operations.

A5.5.2. Number of Fly Days in month: Enter the number of days a unit has for the month to fly aircraft. This is a deviation from the traditional O&M days due to different countries having limiting factors placed on the U.S. Government. Start with the number of calendar days in each of the 12 months. Subtract the number of weekend days, US holidays (see Attachment 8 of USAFEI 11-101, *Management Reports and Guidance on the Flying Hour Program* and consult your local Public Affairs office for the most current listing of local foreign holidays or estimate dates if a current listing is unavailable) and planned off and down days.

A5.5.3. PAA: The total number of primary aircraft authorized.

A5.5.4. TAI: Total Aircraft Inventory (includes PAA and BAI).

A5.5.5. AF Sortie Standard UTE: The standard UTE established by the AF using sorties. Always use this formula for computing the sortie SUTE: Sorties flown/PAA.

A5.5.6. AF Hourly Standard UTE: The standard UTE established by the AF using hours. Always use this formula for computing the hourly SUTE: Hours flown/PAA.

A5.5.7. Total Aircraft Not Available (TANA): The number of aircraft not available for use by the unit due to programmed depot maintenance, contract field teams (CFT), or other reasons for which the unit would not posses the aircraft.

A5.5.8. Historical MC rate: The historical MC rate is used in decimal format. When the tool is used in preparing for the yearly First Look, the data should be a computed average for the past 4 years by

month. For example; the month of October would be a computed average of only the months of October for the past 4 years. When using the model on a monthly basis or to reflow the flying program, the field needs to be the computed average of the past 6 months. This ensures data is reflective of the units' current circumstances.

A5.5.9. Local Planning Factor: The percentage of the fleet, represented in decimal notation, required for MAT, FTD, WLT and scheduled/unscheduled maintenance under 2 hours.

A5.5.10. Spare Factor: Computed as established by USAFEI 21-105, *Aircraft Flying and Maintenance Scheduling Procedures.* This number represents the decimal notation of the percentage of the fleet used as backups for missions or first go losses due to maintenance and operations. The standard is not more than 20%.

A5.5.11. Historical Turn Factor: (Fighters) The historical turn factor is a percentage of first go aircraft that are available for the second go and is represented in decimal format. Much like the MC rate it is computed as a 4-year average for that specific month for the first look requirement. This should capture all breaks and aborts including all aircraft not available for the second go. When using the model on a monthly basis, the turn factor is a computed average for the past 6 months.

A5.5.12. Attrition rate: (Fighters) The attrition rate is computed by month for the past 4 years and in accordance with USAFEI 21-105, *Aircraft Flying and Maintenance scheduling procedures.* This attrition does not include maintenance and ops losses, both are already included in the spare factor. The categories used are OT, AT, SY, HHQ and WX.

A5.5.13. Weather Attrition Rate: (Heavies/Rotor) The weather attrition rate is computed by month for the past 4 years and in accordance with USAFEI 21-105, *Aircraft Flying and Maintenance Scheduling Procedures*. For this rate, only the weather attrition is used.

A5.5.14. Average Sortie Duration (ASD): The average sortie duration can be found in the long look projections or computed from historical data. Once the first look is accomplished, units can input the actual ASD flown by month.

A5.6. Using the Capabilities Model

A5.6.1. The cells without color are those that require unit input for both the first look and for monthly management of the fleet. The light green cells (Fighters rows 15 and 16; Heavies-rotor rows 13 and 14) are for the user to input the planned or actual ASD and UTE for that month if known. The remaining cells are computations built into the spreadsheet.

A5.6.2. The model provides for "WHAT IF" situations where the user can make adjustments in managing the flying program in order to meet the SUTE.

A5.6.3. Fighter **(WHAT IF)**

A5.6.3.1. Row 33 allows the user to input a number of days for the month which the unit has to fly 3-go fly days to meet the SUTE. Row 34 allows the user to input the number of days a unit must surge to meet the SUTE. In some instances, units will have to use a mix of 3-go days and surge days. Surge days are defined as days where the schedule is at least 50% more than the normal flying schedule.

A5.6.4. Heavies-Rotor **(WHAT IF)**

A5.6.4.1. Row 27 allows units to add to the ASD already input previously in order to manage the Flying hour program. Row 28 allows units to increase the number of missions at the established ASD and can be used at the same time with row 27 to manage the Flying hour program.

Table A5.3. Airframe Capability Sample.

Flying Hour Goal (long look requirements for FYDP)	6986	
Average Sortie Duration (long look requirements for FYDP)	1.4	
Enter the Sortie SUTE for you MDS	18.1	
SUTE CAPABILITIES FIGHTERS	Oct-03	Nov-03
Number of Fly days for the respective month (Consider AEF Prep/Reconstitution)	22	18
Total Aircraft Inventory (TAI = PAA+BAI)	27	27
Primary Authorized Aircraft (PAA)	24	24
Total Aircraft Not Available due to PDM, CFT, etc (TANA)	6	6
Historical MC rate (Decimal notation preferably from a time of normal operations)	0.80	0.78
Local Planning Factor (WLT, FTD, MAT, Sched/Unsch Maint under 2 hours)	0.15	0.15
Spare Factor (Backup for 1st Go Maint/Ops losses, rounded Std 20%)	0.2	0.2
Historical Turn Factor (Decimal notation of historical Turn Factor)	0.75	0.75
Attrition Rate (Historical Misc. Losses)	0.0307	0.0307
Sorties lost due to AEF Prep and Reconstitution (Un-available Aircraft*SUTE)		
Average Sortie Duration by Month	1.4	1.2
Actual UTE Achieved by Unit (For use after the first look)	17.7	14.3
Number of Aircraft Available (TAI - TANA) If less than PAA or uses PAA	21	21
Available MC Aircraft (A/C Avail * MC Rate)	17	16
Total Aircraft Available (1 - Local Planning Factor * Avail MC A/C)	14	13
Spares (Spare Factor * TAA) Rounded to Whole Number	3	3
1st Go Aircraft (TAA - Spares)	11	10
2nd Go Aircraft (1st Go Aircraft * Turn Factor)	8	7
1st Go Sorties (1st Go Aircraft * Number of Fly Days)	242	180
1st Go Sortie Capability (1st Go Sorties * (1 - Attrition Rate))	235	174
2nd Go Sorties (2nd Go Aircraft * Number of Fly Days)	176	126
2nd Go Sortie Capability (2nd Go Sorties * (1 - Attrition Rate))	171	122
Total Sortie Capability for the Month (1st Go Sort Cap + 2nd Go Sort Cap)	435	417
Monthly SUTE Capability (Total Sortie Capability / PAA or Actual UTE Achieved)	17.7	14.3
Monthly UTE Capability Using Total Aircraft Available (TSC / TAA)	20.7	19.9
Hours Flown	609.0	583.8
Number of 3rd Go Fly Days	5	10
Number of Monthly Surge Days	0	3
3rd Go Aircraft (2nd Go Aircraft * Turn Factor)	6	5
3rd Go Sorties (3rd Go Aircraft * Number of Fly Days)	30	50
3rd Go Sortie Capability (3rd Go Sorties * (1 - Attrition Rate))	29	48
Surge Aircraft (1st Go + 2nd Go + 50%)	28	25
Surge Sorties (Surge Aircraft * Number of Fly Days)	0	75
Surge Sortie Capability (Surge Sorties * (1 - Attrition Rate))	0	73

Section A5C—Standard UTE (SUTE) Personnel Capability Model Instructions

A5.7. Overview

A5.7.1. The personnel capabilities model is completely based on skill-level mix and the historical MC rate. The reason for using the MC rate is because it is the finished product we provide to operations to complete the mission. The model does not use any Job Data Documentation (JDD), and every attempt has been made to stay away from using historical JDD for the purpose of computing a unit's personnel capability. Of all the models, this one is one of the more complex to develop (along with the OPSTEMPO tool) so the model has some hidden rows where some of the computations are accomplished. However, all of the results are viewed by the user in the bottom portion of the spreadsheet.

A5.7.2. This tool doesn't get run by workcenter, it was built with the idea that all AFSC's having a direct impact on sortie production be used. For example, one unit used all Maintenance Group personnel in jobs related to sortie production. This theory is based on the assumption that authorizations were established by an LCOM study showing the mission can be accomplished, and that flight chiefs are aware of their manning situation and working to resolve any shortages.

A5.7.3. The tool is basically the same for Fighters and Heavies-Rotor aircraft with the only difference being computation of UTE rates; Fighters: Sortie UTE, heavies-rotor: Hourly UTE. However, heavies-rotor users will notice the use of sorties in their spreadsheet. The reason for this is that personnel don't generate flying hours; they generate sorties or missions, so the model converts the flying hours based on the user input ASD into sorties.

A5.8. Definitions/Instructions

A5.8.1. PAA: The total number of primary aircraft authorized.

A5.8.2. AF Sortie Standard UTE: The standard UTE established by the Air Force using sorties. Always use this formula for computing the sortie SUTE: Sorties flown/PAA.

A5.8.3. AF Hourly Standard UTE: The standard UTE established by the Air Force using hours. Always use this formula for computing the hourly SUTE: Hours flown/PAA.

A5.8.4. Historical MC rate: The historical MC rate is used in decimal format. When the tool is used in preparing for the yearly first look, the data should be a computed average for the past 4 years by month. For example; the month of October would be a computed average of only the months of October for the past 4 years. When using the tool on a monthly basis or to reflow the flying program, the field needs to be the computed average of the past 6 months. This ensures data is reflective of the units' current circumstances.

A5.8.5. Authorized 3-, 5- and 7-level: The total authorized personnel in AFSC 2AXXX positions listed in the Unit Manpower Document (UMD).

A5.8.6. Assigned 3-, 5- and 7-level: The total assigned personnel in AFSC 2AXXX from the Unit Management Personnel Roster, (UMPR) categorized by skill level.

A5.8.7. Out of Hide positions: The total number of personnel by skill-level category that are assigned to the unit, but are not active in their career field core tasks. An example would be the Unit Resource Advisor, Unit Deployment Monitor or Honor Guard duty, etc.

A5.8.8. Personnel not available: (Rows 38, 39 and 40) These rows are based on a percentage and are computed for the user. The percentage used is 17.5% and is slightly higher than the standard 14.5% derived several years ago. The slight increase is to account for programs like FTAC that weren't around when initially computed. It represents the total number of people by skill-level category that are assigned to the unit, but are not available to perform their core competencies. For example personnel on leave, unrelated TDY, compensatory time off, an Airman assigned to FTAC, etc.

A5.8.9. Mismatch indicator: Row 45 has an indicator that will identify when the numbers don't match up between personnel assigned, out of hide and not available positions.

A5.8.10. Maintenance Shifts: The expected maintenance shifts in row 50 are defined by AFI 38-201, *Determining Manpower Requirements* and the model uses their original names and definitions. The reason for this is because it emphasizes impact to leadership and leaves it standardized with the OPSTEMPO tool and the AFI. If leadership is working their people at the established limits set by the definitions, they need to understand that those work hours are the expected for situations above the normal and shouldn't be used as "the way of life".

A5.8.11. Recommended and Maximum SUTE: Rows 53 and 54 provide the attainable SUTE based on recommended and maximum sorties. Recommended sorties are based on a normal work day, and maximum sorties are based on working 25% over a standard work week.

A5.9. Using the Capabilities Model

A5.9.1. The cells without color are those that require unit input for both the First look and for monthly management of the fleet. The light green cells (rows 25 and 26) are for user input of actual UTE and MC rates achieved for the month after the first look. The remaining cells are computations built into the spreadsheet.

A5.9.2. The model provides for "WHAT IF" situations where the user can make adjustments in managing their people in order to meet the SUTE. The options available are inputting actual numbers for the personnel not available by skill level and manning assist by skill level for those units that request augmentees during critical times.

Table A5.4. Personnel Capability Sample.

Flying Hour Goal (long look requirements for FYDP)	6986	
Average Sortie Duration (long look requirements for FYDP)	1.4	
Enter the SUTE for you MDS	18.1	
PERSONNEL CAPABILITIES	Oct-03	Nov-03
Primary Authorized Aircraft (PAA)	24	24
Actual UTE Achieved by Unit (For use after the first look)	17.7	14.3
Actual MC rate Achieved by Unit (For use after the first look)	72.1	72.5
Historical MC Rate	0.7985	0.7792
Authorized 3 Levels (Includes Both Funded and Unfunded Positions)	48	48
Authorized 5 Levels (Includes Both Funded and Unfunded Positions)	98	98
Authorized 7 Levels (Includes Both Funded and Unfunded Positions)	33	33
Assigned 3 Levels	62	62
Assigned 5 Levels	73	73
Assigned 7 Levels	25	25
3 Levels Authorized in out of hide positions (RA, UDM, etc.)	0	0
5 Levels Authorized in out of hide positions (RA, UDM etc.)	0	0
7 Levels Authorized in out of hide positions (RA, UDM, etc.)	6	9
3 Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)	10	10
5 Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)	12	12
7 Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)	4	4
3 Level Available Personnel	52	52
5 Level Available Personnel	61	61
7 Level Available Personnel	15	12
Total Personnel Available	128	125
If Red There is a Quantity Mismatch in Personnel	GOOD	GOOD
Production Potential Based on Skill-Level Factor	0.8088	0.8088
Production Available Based on Skill-Level Factor	0.7742	0.7426
Average Sorties Per Capable Personnel	4.2888	3.6951
Max Sorties Per Capable Personnel	5.3610	4.6189
Maitenance Shifts Expected as defined by AFI 38-201	WARTIME	SURGE
Recommended Sorties	425	343
Maximum Sorties	531	428
Recommended SUTE Capability (Recommended Sortie Capability / PAA)	17.7	14.3
Max SUTE Capability (Maximum Sortie Capability / PAA)	17.7	14.3
3-Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)		
5-Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)		
7-Level Personnel Not Available (FTAC, leave, TDY, Honor Guard etc.)		
3-Level Manning Assist		
5-Level Manning Assist		
7-Level Manning Assist		

Section A5D—Standard UTE (SUTE) Facilities Capability Model Instructions

A5.10. Overview

A5.10.1. The facilities capability and dock requirements model is the same as the one developed by MSgt Leonard Gauthier while stationed at Langley AFB, Virginia. There was no need to change the robust tool which MSgt Gauthier developed. Some additions have been incorporated in order to tie into the SUTE. The model has been reformatted to maintain standardization with the other tools and cell N10 has a stoplight that will change to red if the monthly ASD does not meet the long look requirements. Cell N22 has a stoplight indicator if the dock capability is less than the long look requirements for the flying hours. Row 24 has a stoplight indicator by month tied in with the capability of meeting the SUTE based on the facilities.

A5.10.2. The following is an excerpt of the instructions for this tool:

Facility Capability Formulas

Dock Flying Hour/Sortie Capability:

a. Number of Inspections per Dock = $\frac{\text{Work Days per Month (WDM)}}{\text{Avg Dock Days}}$

b. Number of Inspections per Month = Number of Inspections per Dock X Number Of Docks Available

c. Dock Flying Hour Capability = Number of Inspections per Month X Inspection Cycle

d. Dock Sortie Capability = $\frac{\text{Dock Flying Hour Capability}}{\text{Average Sortie Length}}$

Facility Requirements Formulas

Dock Requirements:

a. Number of Inspections Required = $\frac{\text{Flying Hours Scheduled}}{\text{Inspection Cycle}}$

b. Dock Days Required = Number of Inspections Required X Avg Dock Days per inspection

c. Number of Docks Required = $\frac{\text{Dock Days Required}}{\text{Work Days per Month}}$

d. Number of HPO Crews Available = $\frac{\text{Projected Available 10X Labor Personnel}}{\text{Number of Personnel Required per HPO Crew}}$

e. Required Number of HPOs per Crew per Month = $\frac{\text{Work Days per Month}}{\text{HPO Days}}$

f. Required Number of HPOs per Month = Number of HPOs per Crew per Month X Number of HPO Crews Available

g. Number of HPOs per PE Cycle = $\frac{\text{Flying Hours per PE Inspection Cycle}}{\text{Flying Hours per HPO Inspection Cycle}}$

h. Required Number of PE Inspections per Month = $\frac{\text{Scheduled Flying Hours}}{\text{Flying Hours per PE Cycle}}$

Table A5.5. Facilities Capability Sample.

Flying Hour Goal (long look requirements for FYDP)	6986	
Average Sortie Duration (long look requirements for FYDP)	1.4	
Enter the SUTE for you MDS	18.1	
SUTE FACILITIES CAPABILITY	Oct-03	Nov-03
Number of Work days for the respective month	22	18
Primary Authorized Aircraft (PAA)	24	24
HPO Days	7	7
PE Days	10	10
Number Docks Available	1	2
Average Sortie Duration by Month	1.4	1.2
Inspection Cycle	200	200
Flying Hours per PE Inspection Cycle	1200	1200
Flying Hours per HPO Inspection Cycle	200	200
Flying Hours Scheduled or Contracted	264.4	264.4
Sorties Scheduled or Contracted	172	172
Projected Available 100 Labor Personnel	9	10
Number of Personnel Required per HPO Crew	10	10
Average Dock Days	8.5	8.5
Number of Inspections per Dock	2	2
Number of Inspections per Month	2	4
Dock Flying Hour Capability	400	800
Dock Sortie Capability	285	666
Monthly SUTE Capability	11.9	27.8
Number of Inspections Required	1.3	1.3
Dock Days Required	11.2	11.2
Number of Docks Required	0.5	0.6
Number of HPO Crews Available	0.9	1.0
Required Number of HPOs per Crew per Month	3	2
Required Number of HPOs per Month	1.5	1.2
Number of HPOs per PE Cycle	6	6
Required Number of PE Inspections per Month	0.2	0.2

Attachment 6

APPROVED OFF-BASE DISTRIBUTION OF REPORTS

A6.1. All United States military units and the following government contractors:

A6.1.1. General Dynamics

A6.1.2. Pratt and Whitney Aircraft Group

A6.1.3. Boeing Aircraft Company

A6.1.4. General Electric Company, F-16 Project Officer

A6.1.5. ILS Maintenance Engineering