

**BY ORDER OF THE COMMANDER
505 COMMAND AND CONTROL WING**

**505 COMMAND AND CONTROL WING
INSTRUCTION 99-101**



25 SEPTEMBER 2012

Test and Evaluation

505 CCW TEST AND EVALUATION

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading

RELEASABILITY: There are no releasability restrictions on this publication

OPR: 505 TEG/TTO

Certified by: 505 TEG/CC
(Colonel Dustin P. Smith)

Pages: 20

This instruction applies to all test units within the 505th Command and Control Wing (505 CCW). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through Major Command (MAJCOM) publications/forms managers. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, Management of Records, and disposed of in accordance with Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afrims/afrims/afrims/rims.cfm>. Contact supporting records managers as required. Send comments and suggested improvements to this instruction, through channels, to 505 TEG/TTO, 3663 Tyndall Ave, Bldg 202, Nellis AFB, Nevada 89191. This 505 CCWI implements AFD 99-1, *Test and Evaluation Process*, AFI 11-260, *Tactics Development Program*, AFI 99-103, USAFWCI 99-103, *USAFWC Test and Evaluation*. This instruction identifies 505 CCW responsibilities for test management activities, guidelines, and procedures. This instruction provides guidance for wing, group, and squadron leadership, project managers, test team members, support, and management personnel in planning, conducting, analyzing, reporting, and disseminating projects in the 505 CCW. This instruction is not intended to be an all-inclusive document and does not take precedence over established directives, instructions, manuals, or standards. More detailed guidance, including document formats and examples, for program planning, execution, and reporting is found in the 505 TEG Test Team Handbook (for the most up-to-date version, contact the 505 TEG/TTO office)

1. TEST AND EVALUATION (T&E) IMPLEMENTATION CONCEPT

1.1. Purpose of T&E. The overarching functions of T&E are to mature system designs; manage risks; identify and resolve deficiencies expeditiously; ensure systems are operationally effective and suitable; and develop and evaluate tactics, techniques, and procedures (TTP). The Air Force T&E community plans for and conducts integrated T&E as an efficient continuum known as integrated testing in collaboration with the requirements and acquisition communities. AFI 99-103, Capabilities Based Test and Evaluation, describes the roles and responsibilities of the T&E community in executing this function.

1.2. Types of T&E. T&E falls into two general categories: developmental test and evaluation (DT&E) and operational test and evaluation (OT&E).

1.2.1. Developmental Test and Evaluation (DT&E). A developmental test (DT) is conducted throughout the acquisition and sustainment processes to assist in engineering design and development and to verify critical technical parametric requirements are met. DT supports the decision to certify systems ready for dedicated operational test (OT) according to AFMAN 63-119, *Certification of System Readiness for Dedicated Operational Test and Evaluation*. The 505 CCW does not execute DT&E directly, but will support DT&E as requested through Air Combat Command (ACC)/A8.

1.2.2. Operational Test (OT). OT determines if capabilities-based requirements have been satisfied and assess system impacts to both peacetime and combat operations. It identifies and helps resolve deficiencies as early as possible, identifies enhancements, and evaluates changes in system configurations that alter system performance. Operational testing also may look at operational impacts of fielding or employing a system, doctrine, operational concept, system performance, TTP, logistics support element, intelligence support elements, system interoperability and security, materiel issues, safety, training, organization, human systems integration (HSI), and personnel. Operational testing includes several categories: initial operational test and evaluation (IOT&E), qualification operational test and evaluation (QOT&E), follow-on operational test and evaluation (FOT&E), and multiservice operational test and evaluation (MOT&E). Testing for Acquisition Category (ACAT) I, IA, and II, major ACAT III system upgrades, and systems on the Office of Secretary of Defense (OSD) T&E Oversight list is normally conducted by Air Force Operational Test and Evaluation Center (AFOTEC) (the Air Force service operational test agency [OTA]). Major command (MAJCOM) support is often requested by AFOTEC for their OTA-led test efforts. AFOTEC will normally conduct I/QOT&E for ACAT I, IA, II, OSD OT&E Oversight, and multi-Service acquisition programs. AFOTEC involvement will end at the completion of I/QOT&E if no FOT&E is required. AFOTEC may non-involve on a program if mutually agreed upon and approved by AF/TE. MAJCOM tests are primarily force development evaluations (FDEs) and tactics development and evaluation projects (TD&Es) conducted through the US Air Force Warfare Center (USAFWC), 53d Wing (WG), 505th Command and Control Wing (CCW), and the Air National Guard Air Force Reserve Command Test Center (AATC). Other MAJCOM OT-related activities supported within ACC include operational assessments (OAs), operational utility evaluations (OUEs), foreign materiel exploitations (FMEs), foreign comparative tests (FCTs), and test support for technology transition mechanisms. Technology transition mechanisms include advanced technology

demonstrations (ATDs), advanced concept technology demonstrations (ACTDs)/joint concept technology demonstrations (JCTDs), and experiments.

1.3. T&E GUIDANCE. The 505 CCW supports test efforts across the spectrum of a system's life cycle for many organizations, including developmental efforts of Air Force Materiel Command (AFMC) program executive offices (PEOs) and Air Force Research Laboratory (AFRL); and operational testing with AFOTEC, AATC, 53 WG, other major commands (MAJCOMs), as well as other services' OT&E efforts. AFI 99-103 tasks each MAJCOM's designated test organization to establish disciplined processes for planning and executing T&E activities. This document, along with ACCI 99-101, *ACC Test and Evaluation*, USAFWCI 99-103, *USAFWC Test and Evaluation*, and the 505 TEG Test Team Handbook, establishes the direction and processes for conducting 505 CCW testing, regardless of ACAT, to include non-ACAT programs, unless specifically excluded by this directive or by other applicable higher headquarters direction. ACC/A8TT is the ACC office responsible for testing and office of primary responsibility (OPR) for ACCI 99-101. USAFWC/A5 is the USAFWC office for testing and is responsible for USAFWCI 99-103.

2. WING MISSION AND TEST RESPONSIBILITIES

2.1. Mission.

2.1.1. The 505 CCW. The mission of the 505 CCW is to improve warfighter capability through command and control (C2) testing, tactics development, and training. The wing is organized into two groups: the 505th Training Group (TRG) and 505th Test and Evaluation Group (TEG). The 505 TEG is the principal point of contact (POC) for managing and executing wing-assigned test programs.

2.1.2. The 505 TEG. The mission of the 505 TEG is to advance the integration of air, space, and cyber capabilities into the C2 construct through operational testing, training, evaluation, and tactics development of air defense radar networks, theater air control system elements, and intelligence, surveillance, and reconnaissance (ISR) weapon systems and to enhance data sharing among these systems. The 505 TEG acts as the wing's POC with USAFWC, HQ ACC, AFOTEC, and other DoD and contractor organizations for executing Air Force test requirements with future and ongoing wing tests and real-world efforts. The 505 TEG is responsible for planning; coordinating/managing resources; developing support plans/agreements; monitoring execution; gathering and analyzing data; and preparing and publishing plans, reports, fielding recommendations, and interim documents for all 505 CCW operational testing. The 505 TEG is responsible for ensuring personnel are trained in required test management skills. The 505 TEG is comprised of four squadrons to accomplish its mission:

2.1.2.1. The 505th Test Squadron (505 TS). The mission of the 505 TS is to rapidly resolve C2 and ISR integration and interoperability challenges through innovation, TTP development, and OT of the joint and service data network for combat identification, advanced programs, and emerging capabilities, as well as provide combined air and space operations center (CAOC) training to ensure fully trained joint, service, and multinational C2 warfighters at the operational level of war.

2.1.2.2. The 605th Test and Evaluation Squadron (605 TES). The mission of the 605 TES is to conduct tactics development and operational test of systems that operate within the command and control, intelligence, surveillance, and reconnaissance (C2ISR) construct, including airborne warning and control system (AWACS), joint surveillance target attack radar system (Joint STARS), AOC, tactical air control party (TACP), control and reporting center (CRC), and distributed common ground station (DCGS) in order to optimize their combat capability.

2.1.2.3. The 84th Radar Evaluation Squadron (84 RADES). The mission of the 84 RADES is to provide the warfighter responsive world-wide radar-centric planning, optimization, and constant T&E to create the most sensitive integrated radar picture.

2.1.2.4. The 705th Combat Training Squadron (705 CTS). The mission of the 705 CTS is to develop, integrate, and deliver a virtual air, space, and cyber warfare environment for Air Force, joint, and coalition combat training, test, and experimentation.

2.2. Responsibilities.

2.2.1. The 505 CCW/CC will:

2.2.1.1. When appropriate, conduct T&E in a joint environment to the maximum extent possible.

2.2.1.2. Conduct T&E over the life of a system to ensure it continues to meet user requirements and to explore nonmaterial means of satisfying deficiencies.

2.2.1.3. Conduct testing in as realistic operational environment as possible to determine system operational effectiveness and suitability in accordance with (IAW) public law and OSD, Air Force, and ACC policy.

2.2.1.4. Require all test articles (to include support equipment, software, government-furnished equipment [GFE]) be as production-representative as possible IAW public law and OSD and Air Force policy.

2.2.1.5. Conduct OT to refine estimates, evaluate changes, and verify correction of deficiencies, assist in TTP development, and evaluate a system to ensure it meets operational needs.

2.2.1.6. Support IOT&E, QOT&E, and FOT&E IAW ACCI 99-101.

2.2.1.7. Provide safe, effective, and efficient conduct of all testing within the wing.

2.2.1.8. Be approval authority, unless otherwise delegated, for forwarding all test plans, reports, and fielding recommendations for tests that are on OSD oversight, that support MAJCOM-managed acquisition program decisions and milestones, or are a 505 CCW/CC special interest test.

2.2.1.9. Be approval authority, unless otherwise delegated, for the annual test priority list (TPL) status report.

2.2.2. The 505 CCW safety officer will:

- 2.2.2.1. Provide a safety representative to support each test team when requested by the project manager.
 - 2.2.2.2. Review and coordinate on test plans for safety considerations and ORM as required.
 - 2.2.2.3. Attend wing combined readiness reviews.
- 2.2.3. The 505 CCW/TA will:
- 2.2.3.1. Provide subject matter expertise to 505 CCW/CC regarding wing test activities, including documentation review as requested by 505 CCW/CC.
 - 2.2.3.2. Review test plans, reports, and fielding recommendations for 505 CCW/CC that are on OSD oversight, that support MAJCOM-managed acquisition program decisions and milestones, or are a 505 CCW/CC special interest test.
 - 2.2.3.3. Review the annual TPL status report for 505 CCW/CC.
 - 2.2.3.4. Review fielding recommendations and all test plans and reports that support MAJCOM-managed acquisition program decisions and milestones prior to 505 CCW/CC coordination/ approval.
 - 2.2.3.5. Review changes and contribute inputs to T&E instructions, policy, and guidance, frequently consolidating 505 TEG and 505 TRG inputs with 505 CCW/TA recommendations to submit as a single 505 CCW input.
 - 2.2.3.6. Serve as the 505 CCW/CC's advisor to improve use of science and technology in test and training.
 - 2.2.3.7. Serve as the 505 CCW/CC's advisor for strategic planning of test and training events.
 - 2.2.3.8. Identify wing opportunities for cross domain integration and involvement in joint activities (i.e., joint test and evaluations (JT&Es)).
 - 2.2.3.9. Serve as the T&E technical interface with USAFWC, HQ ACC, other MAJCOMs/ agencies, HQ AF, and OSD for technical issues that impact the 505 CCW mission.
 - 2.2.3.10. Serve as the 505 CCW science and technology focal point for test-related topics.
- 2.2.4. The 505 TEG/CC will:
- 2.2.4.1. Provide test guidance for planning, coordinating resources, developing support plans/ agreements, monitoring execution, gathering and analyzing data, preparing and publishing plans, reports, fielding recommendations, and interim documents for the majority of 505 CCW operational testing.
 - 2.2.4.2. Approve test plans, reports, and test and evaluation master plans (TEMPs) for programs not on OSD oversight or identified as 505 CCW/CC special interest test.
 - 2.2.4.3. Approve 505 TEG response to ACC tasking documents (i.e., electronic project orders (EPO), TRPs, requests for test conduct or support, etc.).

- 2.2.4.4. Ensure accurate and complete quarterly and annual test status reports are provided to ACC in a timely manner.
 - 2.2.4.5. Monitor defense acquisition programs, when directed, and manage HQ ACC-directed T&E approved by 505 CCW/CC.
 - 2.2.4.6. Support testing conducted by other agencies, as directed by HQ ACC.
 - 2.2.4.7. Ensure an annual financial plan, including resources required, for each projected test is generated.
 - 2.2.4.8. Ensure a test concept review is performed for all wing-conducted tests.
 - 2.2.4.9. Ensure a test execution review IAW 505 TEG Test Team Handbook is conducted prior to dedicated wing-conducted OT&E events.
 - 2.2.4.10. Develop and maintain a set of metrics on test operations.
 - 2.2.4.11. Ensure a certification of readiness for OT is received IAW AFM 63-119 prior to test execution when required.
- 2.2.5. The 505 TEG/TTO will:
- 2.2.5.1. Serve as the group focal point for all test tasking from and reporting to HQ ACC.
 - 2.2.5.2. Serve as the direct liaison authority with ACC/A8TT and USAFWC/A5 and the wing focal point for test team training.
 - 2.2.5.3. Coordinate the review and updates of project prioritizations on the ACC TPL.
 - 2.2.5.4. Participate in the HQ ACC Tactics Review Board (TRB) and TPL integrated product team (IPT) conferences.
 - 2.2.5.5. Ensure all test documents (EPOs, plans, reports, fielding recommendations, TRPs, TEMPs, etc.) are coordinated with other group, safety, wing, and higher headquarters (HHQ) offices, as applicable.
 - 2.2.5.6. Ensure all published technical documents (i.e., test plans, final reports) are assigned a document number by scientific and technical information (STINFO) procedures according to the guidance in AFI 61-201, *The Local Scientific and Technical Information Process* and AFI 61-202, *USAF Technical Publications Program*.
 - 2.2.5.7. Manage the development and sustainment of the group test management system.
 - 2.2.5.8. Ensure all wing taskings are prioritized appropriately based on the ACC Test Prioritization List.
 - 2.2.5.9. Ensure all 505 CCW test documents on the wing home page on the SIPRNET website are password-protected website after approval.
 - 2.2.5.10. Organize consolidated test VTCs as needed and supply read-aheads to participants at least 24 hours prior.

- 2.2.5.11. Develop 505 CCW test training course curriculum and conduct annual curriculum reviews.
 - 2.2.5.12. Conduct 505 CCW test training IAW the 505 TEG Test Team Handbook.
 - 2.2.5.13. Maintain the 505 TEG Test Team Handbook and review annually.
 - 2.2.5.14. Consolidate inputs to this instruction and review and update every 2 years. Publish and disseminate interim changes as required upon 505 CCW/CC approval.
- 2.2.6. Squadron/detachment commanders will:
- 2.2.6.1. Appoint test team members as appropriate for each wing-conducted, wing-supported, or wing-monitored test project.
 - 2.2.6.2. Ensure all personnel supporting test operations are trained before assuming unsupervised duties in their test specialty.
 - 2.2.6.3. Ensure valid repeatable written test cases/procedures are used from test design through test execution and in test reporting.
 - 2.2.6.4. Establish a process for unit leadership review of all test documents.
 - 2.2.6.5. Prepare an annual financial plan including resources required for each projected test.
 - 2.2.6.6. Monitor the progress of assigned tests.
- 2.2.7. Project manager (PM) will:
- 2.2.7.1. Be assigned as the 505 CCW's single POC for each project assigned to the wing.
 - 2.2.7.2. Develop an EPO. As required, ensure (in coordination with TEG/TTO) the EPO is updated with significant information.
 - 2.2.7.3. Assemble a team to conduct the test activities required to meet mission needs.
 - 2.2.7.4. Confirm all test team members are adequately trained to execute their specific roles in assigned test missions.
 - 2.2.7.5. Establish an electronic records management (ERM) case folder for the project and maintain it IAW the 505 TEG Test Team Handbook.
 - 2.2.7.6. Ensure the adequacy and completeness of test planning. Ensure a comprehensive safety/operational risk management (ORM) analysis is prepared and summary results are included in the test plan.
 - 2.2.7.7. Identify and coordinate resources required for the test project. Obtain coordination of information contained within the test plans with other commands, services, or agencies for facilities, ranges, aircraft, personnel, logistics, engineering, funding, or information support.
 - 2.2.7.8. Ensure the test concept briefings and test execution review, as applicable, are prepared and presented to the appropriate commanders.

2.2.7.9. Ensure an environmental impact analysis is completed and approved before any decision to start testing, as required. Where needed, submit AF Form 813 to the appropriate environmental office for analysis.

2.2.7.10. Develop and publish the test plan or test support plan, as required.

2.2.7.11. Conduct the test according to the approved test plan and ensure critical operational issues (COI) or test objectives are addressed.

2.2.7.12. Ensure information is current and accurate for all assigned tests in the approved group management system.

2.2.7.13. Prepare a final report within 60 of the last data analysis effort. When test schedule prevents accomplishment of a final report in a timely manner, an interim summary report/fielding recommendation should be provided to the sponsoring agency (ACC, AFISRA, etc).

2.2.7.14. Prepare a fielding or release recommendation, when required, to meet acquisition/MAJCOM requirements.

2.2.7.15. Submit test-derived TTP to the appropriate customer within 30 days of the approved test report, as applicable.

2.2.7.16. Ensure a road show briefing is prepared within 30 days of test report approval for any test that results in a fielding recommendation, supports MAJCOM-managed acquisition program decisions and milestones, or provides TTP for operational use.

2.2.7.17. Conduct integrated test team (ITT) meetings to facilitate test execution.

2.2.7.18. Participate in test integrated product teams (TIPT), as required.

3. TEST MANAGEMENT AND TEAM COMPOSITION

3.1. Test Categories. The 505 CCW is annually assigned a variety of tests by ACC. These tests are broken into three main categories.

3.1.1. Wing Conducted. Wing-conducted tests identify the 505 CCW as the lead test agency and are managed by a 505 CCW-assigned PM. The PM is responsible for project planning, execution, and final reporting.

3.1.2. Wing Supported. Wing-supported tests are managed or conducted by other lead test agencies (AATC, 530 WG, AFMC, AFOTEC, etc.) with close involvement by an assigned 505 CCW PM. The 505 CCW PM is responsible for writing a test support plan and coordinating 505 CCW support for the lead test agency as directed in the ACC EPO. The 505 CCW/CC may waive developing a formal test support plan if the lead test agency plan adequately delineates 505 CCW participation.

3.1.3. Wing Monitored. A wing monitored test requires no dedicated 505 CCW test support. The wing either monitors another agency's testing or monitors early progress or planning of a project in anticipation of a future test. No test support plan or report is required.

3.2. T&E Funding.

3.2.1. Funding for wing-conducted testing may come from several sources. Test baseline funding is obtained through the ACC budget process which yields an initial distribution from HQ ACC to the 505 CCW and ultimately to the 505 TEG and subordinate squadrons. Other agencies providing funding for wing-conducted or supported tests include, but are not limited to program executive offices (PEOs), HQ ACC, Air Force Research Laboratory (AFRL), other MAJCOMs, or other services. The method for these organizations to provide funding will be coordinated with the PM and the applicable budget analyst/resource advisor (RA). Organizations requesting 505 CCW support for their testing (AFOTEC, Air Force Materiel Command (AFMC), AATC, 53 WG, etc.) will normally fund all the 505 CCW support required for the test.

3.2.2. The 505 TEG is responsible for budgeting resources required to accomplish T&E responsibilities. Administrative costs to run each squadron or detachment (e.g., computers, office supplies, phones) should be budgeted separately from specific T&E activities and submitted upon 505 CCW's call for execution plans. Test units are responsible for submitting test-specific funding requirements through the EPO process, outlining the test description, its purpose, required resources to accomplish the test, and the scope of the effort for each test program by fiscal year and type of funds. After the EPO is approved, PMs will provide funding data to the unit RA/budget analyst for budgeting/tracking.

3.3. Test Team Composition. Each 505 CCW test is conducted using a team effort led by the PM. The test team includes a variety of expertise to include, but not limited to, personnel knowledgeable in the systems/capabilities being tested, analysts, and support personnel. Unit commanders must ensure personnel assigned to a test team are trained to perform the duties required for support of test operations IAW the 505 TEG Test Team Handbook.

3.3.1. PM. The PM is the single focal point within the 505 CCW for a particular test. Normally, the PM will be a government employee (military or civilian). The 505 TEG/CCW may waive this requirement on a case-by-case basis. The PM will direct the test team and assign responsibilities to ensure all aspects of planning, execution, and reporting are accomplished. See paragraph 2.3.7 for additional PM responsibilities.

3.3.2. Rated Project Officer (RPO). Tests involving upgrades to aircraft systems or significant changes to TTP may require an RPO be assigned to the test team. RPOs will be pilots, combat systems operators, or air battle management officers currently qualified in their aircraft. The RPO will be the team expert on aircraft systems, operations, and tactical employment. The operational test organization (OTO) squadron commander will review the test concept for 505 CCW-conducted tests requiring flying operations and determine if an RPO is required.

3.3.3. Operations Analyst (OA). The OA is responsible for a valid test design and collects, correlates, and analyzes data. The OA ensures adequate data (quantity and quality) are collected, validated, and analyzed to determine the sufficiency of measures of effectiveness (MOE), measures of suitability (MOS), and measures of performance (MOP) for reporting purposes. The OA implements the appropriate test planning methodology. After collaborating with other test team members, the OA leads data

analysis efforts, determines appropriate inferences, and provides information to support test reporting requirements.

3.3.4. Test Director (TD). The TD is responsible for step-by-step execution of the test. The PM normally fulfills this role.

3.3.5. Operational Suitability Analyst (OSA). OSAs ensure operational suitability test objectives adequately reflect system requirements and support fielding recommendations. The final report will reflect the test team's concerns with respect to system suitability (reliability, availability, maintainability, and other suitability factors).

3.3.6. Mission Control Room Personnel. A control room is defined as any facility, ground or airborne, which provides two-way communications with the aircrew and real-time capability to monitor safety of flight, quality of test data, or flight termination system information. For the purposes of this instruction, essential control room personnel are test directors and test conductors, as well as designated subject matter experts (SMEs) whose active presence in the control room is essential to safety of flight or mission success.

4. TEST PROCESS

4.1. Test Phases. The test phases for most projects assigned to the 505 CCW are project initiation, planning, execution, reporting, and close out.

4.2. Project Initiation. The ACC TPL contains all assigned projects for the current fiscal year, prioritized by the ACC staff, and approved by ACC/A8. ACC begins drafting the next fiscal year's TPL in February as part of ACC's preparation of the "in-cycle" process. These projects are submitted to ACC/A8TT during its annual call-for-tests by the ACC staff, AFMC, AFOTEC, other services or commands, and other agencies requiring ACC testing or test support. ACC compiles the list of tests and submits it to the ACC test agencies for drafting the EPOs. All projects are assigned to the 505 CCW through an approved EPO. Draft EPOs are submitted to ACC and the TPL is staffed for coordination and approval. Projects not identified during this "in-cycle" process are handled individually during the year as "out-of-cycle" tests. ACC/A8TT sends a message to the responsible test agency describing the test, requesting the agency determine its ability to conduct/support the test, and directing preparation of an EPO if it intends to conduct/support the test. This process is detailed in ACCI 99-101.

4.3. Planning. Thorough planning is the key to a successful test project. While plans are not expected to be perfect, they must provide enough detail to allow the test team and leadership to schedule and fund resources, coordinate resources provided by other units, and safely manage the project. At a minimum, PMs are required to update the group-approved management system with comments and milestone updates on a biweekly basis during the planning phase.

4.4. Execution. The PM will manage the test team to ensure test events are executed IAW the plan and the test item configurations are correct. Testing will not begin without an approved EPO, a signed test/support plan, and an approved test safety/ORM review unless a waiver has been granted by 505 TEG/CC. Test team OAs, OSAs, and data collection personnel must play lead roles in test monitoring to resolve issues and to ensure valid and sufficient data are being collected. Analysts will analyze test data throughout the execution

phase using appropriate methodology and analytical tools. They will determine if additional or different testing is required. The PM will begin drafting any required test reports during the execution phase.

4.5. Reporting. Final reports are required for wing-conducted and -integrated tests unless otherwise coordinated and approved by 505 TEG/CC. The reporting phase starts after the last test event which is normally defined as the last data analysis event. PMs are required to enter comments and milestone updates in the group approved management system on a biweekly basis during the reporting phase.

4.5.1. PMs will use the 505 CCW-approved final report sample formats found in the 505 TEG Test Team Handbook. Deviations from these formats will be addressed by the PM in the final report coordination package. The PM will submit the final report package for coordination and approval with sufficient lead time to ensure the report is at the approval authority's office not later than 60 calendar days after the last data collection event. Final reports on OSD oversight must be to the wing commander 60 calendar days prior to the acquisition decision review being supported to meet AFI 99-103 requirements. PMs are responsible for disseminating reports to the appropriate ACC office or other interested agencies. Dissemination may entail only providing notification-of-posting on the 505 CCW Test Plans and Reports SIPRNET website with the information needed to access the report.

4.5.2. Wing-supported tests may require a final report or data package as agreed to by the 505 CCW PM. At a minimum, the PM will provide a memorandum to the wing commander, signed by the unit commander, detailing the support provided. In the memorandum, PMs do not need to include specific test results or judgments, but should limit the report to general information regarding timeline, resources expended, and unit responsible for providing the final report.

4.5.3. Following report/memorandum approval, the 505 TEG/TTO will ensure the signed document is posted on the 505 CCW Test Plans and Reports SIPRNET website.

4.6. Project Closeout. After the project is completed (final report or signed MFR), the PM will make final updates in the group approved management system and advise the 505 TEG/TTO to place the project in "Complete" status.

4.6.1. Road Shows/Field Training. Road shows may be required in order to provide initial training to operational personnel on new software, equipment, and TTP.

4.6.2. Case Folder Disposition. Following a project closeout, the PM will review the ERM-based project case folder and delete nonessential correspondence and documentation. Data analysis results will remain in the ERM case folder along with a copy of the EPO, test/support plan with all amendments, and all reports. All test personnel will maintain documentation IAW guidance found in AFRIMS Table T99-02, Rule 2.03 (accessed through the AF Portal).

MUSTAFA R. KOPRUCU, Colonel, USAF
Commander

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

AFI 33-322, *Records Management Program*, 7 October 2003

AFMAN 33-361, *Publishing Processes and Procedures*, 10 December 2007

Prescribed Forms

AF Form 673, Air Force Publication/Form Action Request

Adopted Forms

AF Form 847, Recommendation for Change of Publication

Abbreviations and Acronyms

AATC —Air National Guard Air Force Reserve Command Test Center

ACAT —acquisition category

ACC —Air Combat Command

AFC2IC—Air Force Command and Control Integration Center

AFMC-Air Force Materiel Command

AFOTEC—Air Force Operational Test and Evaluation Center

AFRIMS—Air Force Records Information Management System

ATD—advanced technology demonstration

ATEC—Army Test and Evaluation Command

C&LR—capabilities and limitations report

CCW—command and control wing

COI—critical operational issue

COTS—commercial off-the-shelf

CTF—combined test force

CTS—combat training squadron

DOT&E—Director, Operational Test and Evaluation

DR—deficiency report

DT&E—electronic records management

FCT—foreign comparative test

FME—force development evaluation

FME—foreign materiel exploitation

FOT&E—follow-on operational test and evaluation

GFE—government-furnished equipment
HPT—high-performance team
HHQ—higher headquarters
IOT&E—initial operational test and evaluation
IPT—integrated product team
ITT—integrated test team
JCTD—joint capability technology demonstration
JT&E—joint test and evaluation
JTTP—joint tactics, techniques, and procedures
LFT&E—live fire test and evaluation
MAJCOM—major command
MCOTEA—Marine Corps Operational Test and Evaluation Agency
MDAP—major defense acquisition program
MFR—memorandum for record
MOE—measure of effectiveness
MOP—measure of performance
MOT&E—multiservice operational test and evaluation
NDI—nondevelopmental item
OA—operations analyst or operational assessment
OPTEVFOR—Operational Test and Evaluation Force (Navy)
ORM—operational risk management
OSA—operational suitability analyst
OSD—Office of the Secretary of Defense
OT—operational test
OT&E—operational test and evaluation
OTA—operational test agency
OTO—operational test organization
OUE—operational utility evaluation
PEO—program executive office
PM—project manager
POC—point of contact
PTO—participating test organization

QOT&E—qualification operational test and evaluation

RA—resource advisor

RADES—radar evaluation squadron

RPO—rated project officer

RTO—responsible test organization

SIPRNET—Secret internet protocol router network

SOTR—sufficiency of operational test review

STINFO—scientific and technical information

T&E—test and evaluation

TD—test director

TD&E—tactics development and evaluation

TEG—test and evaluation group

TEMP—test and evaluation master plan

TES—test and evaluation squadron

TIPT—test integrated product team

TPL—test priority list

TRB—tactics review board

TRP—test resource plan

TS—test squadron

TTP—tactics, techniques, and procedures

USAFWC—United States Air Force Warfare Center

WG—wing

Terms

Acquisition Category (ACAT)— Acquisition categories determine the level of review, decision authority, and applicable T&E policies and procedures. They facilitate decentralized decision making and execution, and compliance with statutorily imposed requirements. See DoDI 5000.02, enclosure 3, for details.

Advanced Technology Demonstrations (ATD).— These are advanced development efforts used to meet the needs of employment concepts and capability requirements through “proof of principle” demonstrations in operationally realistic environments.

Capabilities and Limitations Report (C&LR)— Warfighter operational needs may require rapid or early fielding of new capabilities before operational testing is completed. The C&LR provides the most current OT perspective on developmental system capabilities and limitations based on testing to date. C&LRs will be based on existing, verifiable T&E data (contractor,

developmental, and operational) derived from all available system development, ground, and flight test activities. A C&LR does not obviate the requirement for dedicated OT&E.

Critical Operational Issue (COI). 1. Operational effectiveness and operational suitability issues (not parameters, objectives, or thresholds) that must be examined during operational testing to determine the system capability to perform its mission. 2. A key question that must be examined in operational test and evaluation to determine system capability to perform its mission. Testers normally phrase a COI as a question to be answered in evaluating a system operational effectiveness or suitability.

Dedicated Operational Testing— OT&E conducted independently from contractors, developers, and operating commands and used to support production or fielding decisions.

Deficiency Report (DR)— The report used to identify, document, and track system deficiency or enhancement data while a system is in advanced development, OT, or operational transition.

Category (CAT) I DRs— Those which could cause death, severe injury, severe occupational illness, major loss or damage, or directly restrict combat or operational readiness if left uncorrected.

CAT II DRs— are those which do not meet the criteria of a CAT I DR. They are attributable to errors in workmanship, nonconformance to specifications, drawing standards, or other technical requirements; or identify a problem for potential improvement or enhancement.

Enhancements are a type of CAT II DR which identifies conditions that complement but are not absolutely required for successful mission accomplishment. The recommended condition, if incorporated, will improve system operational effectiveness or suitability.

Developmental Test and Evaluation (DT&E)— T&E conducted to evaluate design approaches, validate analytical models, quantify contract technical performance and manufacturing quality, measure progress in system engineering design and development, minimize design risks, predict integrated system operational performance (effectiveness and suitability) in the intended environment, and identify system problems (or deficiencies) to allow early and timely resolution. DT&E includes contractor testing and is conducted over the life of the system to support acquisition and sustainment efforts.

Follow—On Operational Test and Evaluation (FOT&E) - The continuation of IOT&E or QOT&E activities past the full-rate production decision. FOT&E answers specific questions about unresolved COIs or completes areas not finished during the IOT&E or QOT&E. It ensures the initial system acquisition process is complete.

Force Development Evaluation (FDE)— The OT&E of fielded, operational systems during the sustainment portion of the system life cycle after acceptance for operational use. The focus is on maintaining or upgrading operational systems after the initial acquisition process is complete. An FDE also supports acquisition of MAJCOM-managed systems.

Foreign Comparative Test (FCT)— A T&E program centrally managed by OSD which provides funding for US T&E of selected equipment items and technologies developed by allied or friendly countries when such items or technologies are identified as having good potential to satisfy valid DoD requirements.

Foreign Materiel Exploitation (FME)— FME projects are used to examine weapon systems used by foreign countries and testing is generally focused on determining capabilities and countermeasures.

High—Performance Team (HPT) - An AF/A5RD facilitated team used to develop capabilities-based requirements documents. An HPT consists of a lead (normally the sponsor), core team (ideally 7-11 members, consisting of SMEs from the Air Force, government agencies, and other Services as required) and support team members. The HPT accelerates the documentation process and increases the potential for a quality document. Its overarching objective is to capture, articulate, and document the operator's requirements in minimum time, while achieving stakeholder buy-in. The HPT leverages the expertise of all stakeholders by inviting them to participate in the development of the document.

Initial Operational Test and Evaluation (IOT&E)— See OT&E.

Integrated Test Team (ITT)— A cross-functional team of empowered representatives from multiple disciplines and organizations and co-chaired by operational testers and the program manager. The ITT is responsible for developing the T&E strategy and TEMP, assisting the acquisition community with T&E matters, and guiding the development of integrated test plans. There is one ITT for each acquisition program.

Integrated Testing— The collaborative planning and execution of test phases and events to provide shared data in support of independent analysis, evaluation, and reporting by all stakeholders, particularly developmental (both contractor and government) and operational test and evaluation communities.

Joint Capability Technology Demonstration (JCTD)— A demonstration of the military utility of a significant new technology and an assessment to clearly establish operational utility and system integrity

Joint Test and Evaluation (JT&E)— An OSD-sponsored T&E program conducted among more than one military service to provide T&E information on combat operations issues and concepts for the purpose of writing and publishing joint tactics, techniques, and procedures (JTTP). JT&E does not support system acquisition.

Logistics Supportability— The degree to which the planned logistics support allows the system to meet its availability and wartime use requirements. Planned logistics support includes the following: test, measurement, and diagnostic equipment; spare and repair parts; technical data; support facilities; transportation requirements; training; manpower; and software.

Maintainability— The capability of an item to be retained in or restored to a specified condition when maintenance is performed by personnel having specified skill levels using prescribed procedures and routines at each prescribed level of maintenance and repair.

Measurable— Having qualitative or quantitative attributes (e.g., dimensions, velocity, capabilities) that can be ascertained and compared to known standards. (See Testable.)

Measure of Effectiveness (MOE)— A qualitative or quantitative measure of system performance or characteristic that indicates the degree to which it performs the task or meets a requirement under specified conditions. MOE should be established to measure system capability to produce or accomplish the desired result.

Measure of Performance (MOP)— A quantitative measure of system capability to accomplish a task, typically in the area of physical performance (e.g., range, velocity, throughput, payload).

Measure of Suitability (MOS)— A qualitative or quantitative measure of system readiness to be placed and sustained satisfactorily in the field with primary areas of interest being reliability, availability, and maintainability (RAM).

Multiservice Operational Test and Evaluation (MOT&E)— OT&E conducted by two or more service OTAs for systems acquired by more than one service. MOT&E is conducted according to the T&E directives of the lead OTA or as agreed in a memorandum of agreement between the participants.

Objective— An operationally significant increment above the threshold. An objective value may be the same as the threshold when an increment above the threshold is not operationally significant or useful.

Operational Assessment (OA)— An analysis of potential operational effectiveness and operational suitability made by an independent OT activity with operator support as required on other than production systems. The focus of an operational assessment is on significant trends noted in development efforts, programmatic voids, areas of risk, adequacy of requirements, and the capability of the program to support adequate OT. OAs may be conducted at any time using technology demonstrators, prototypes, mockups, engineering development models, or simulations but will not substitute for the dedicated OT&E necessary to support full production decisions.

Operational Effectiveness— Measure of the overall ability to accomplish a mission when used by representative personnel in the environment planned or expected for operational employment of the system considering organization, doctrine, tactics, supportability, survivability, vulnerability, and threat.

Operational Suitability— The degree to which a system can be placed and sustained satisfactorily in field use with consideration given to availability, compatibility, transportability, interoperability, reliability, wartime use rates, maintainability, safety, human factors, habitability, manpower, logistics, supportability, logistics supportability, natural environmental effects, and impacts, documentation, and training requirements.

Operational Test and Evaluation (OT&E)— 1. The field test, under realistic combat conditions, of any item of (or key component of) weapons, equipment, or munitions for the purpose of determining the effectiveness and suitability of the weapons, equipment, or munitions for use in combat by typical military users and the evaluation of the results of such test. (Title 10 §139(a)(2).) 2. T&E conducted in as realistic an operational environment as possible to estimate the operational effectiveness and operational suitability of the prospective system. In addition, OT&E provides information on organization, personnel requirements, doctrine, and tactics. It also may provide data to support or verify material in operating instructions, publications, and handbooks.

Operational Test Organization (OTO)— The OT organization that has the responsibility to plan, execute, and report on a test. There may be other OTOs from within the Air Force or other services that support the test or may conduct specific phases of the test.

Operational Utility Evaluation (OUE)— OUEs are a highly streamlined, tailored OT&E activity designed to obtain a quick-look assessment of military capabilities and limitations. OUEs are specifically limited in time and scope and will not afford the same rigor as an IOT&E. OUEs will only be used when an IOT&E, QOT&E, or FOT&E cannot be tailored to meet unusual test program needs. OUEs cannot be used to replace IOT&E, QOT&E, or FOT&E. AFOTEC or the MAJCOM OTA conducts OUEs.

Operational Test Agency (OTA)— An independent agency reporting directly to the service chief that plans and conducts OTs, reports results, and provides evaluations of effectiveness and suitability on new systems. NOTE. Each Service has one designated OTA: The Air Force has AFOTEC. The Navy has the Operational Test and Evaluation Force (OPTEVFOR). The Army has the Army Test and Evaluation Command (ATEC). The Marine Corps has the Marine Corps Operational Test and Evaluation Agency (MCOTEA).

Operator— Refers to the operating command which is the primary command operating a system, subsystem, or item of equipment. Generally applies to those operational commands or organizations designated by HQ Air Force to conduct or participate in operations or operational testing (interchangeable with the term “using command” or “user.”) In other forums, the term “warfighter” or “customer” is often used.

Oversight— Senior executive-level monitoring and review of programs to ensure compliance with policy and attainment of broad program goals.

Oversight Program— A program on the OSD T&E Oversight List for DT&E, live fire test and evaluation (LFT&E), or OT&E. The list includes all ACAT I (major defense acquisition program (MDAP)) programs, ACAT II (major system) programs, and any other programs selected for OSD T&E Oversight. These programs require additional documentation and have additional review, reporting, and approval requirements.

Participating Test Organization (PTO)— Any test organization required to support a lead test organization by providing specific T&E data or resources for a T&E program or activity.

Qualification Operational Test and Evaluation (QOT&E)— A tailored type of IOT&E performed on systems for which there is little to no research and development test and evaluation (RDT&E)-funded development effort. Commercial off-the-shelf (COTS), nondevelopmental items (NDI), and GFE are tested in this manner.

Reliability— The capability of a system and its parts to perform its mission without failure, degradation, or demand on the support system.

Responsible Test Organization (RTO)— The lead government developmental test organization on the ITT that is qualified to conduct and be responsible for overseeing DT&E

Sufficiency of Operational Test Review (SOTR)— For some programs of limited scope and complexity, system development testing, or integrated developmental and OT events may provide adequate operational test data to support MAJCOM fielding OT may consist of a review of existing data rather than a separate, dedicated OT event. The SOTR may only be used to inform MAJCOM or user system fielding decisions. It may not be used as the sole source of OT information for any type of acquisition milestone or production decisions. The SOTR may not be used for acquisition milestone decisions associated with OSD OT&E Oversight programs unless approved by DOT&E.

Survivability— The capability of a system and crew to avoid or withstand a man-made hostile environment without suffering an abortive impairment of its capability to accomplish its designated mission. Survivability consists of susceptibility, vulnerability, and recoverability.

Sustainment— 1. The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective (JP 1-02). 2. The service's capability to maintain operations once forces are engaged (AFDD 1-2). 3. Activities that sustain systems during the operations and support phases of the system life cycle. Such activities include any investigative test and evaluation that extends the useful military life of systems or expands the current performance envelope or capabilities of fielded systems. Sustainment activities also include T&E for modifications and upgrade programs and may disclose system or product deficiencies and enhancements that make further acquisitions necessary.

Tactics Development and Evaluation (TD&E)— TD&E is a tailored type of FDE specifically designed to further exploit doctrine; system capabilities; and TTP during the sustainment portion of the system life cycle. TD&Es normally identify nonmaterial solutions to tactical problems or evaluate better ways to use new or existing systems.

Testable— The attribute of being measurable with available test instrumentation and resources. NOTE. Testability is a broader concept indicating whether T&E infrastructure capabilities are available and capable of measuring the parameter. The difference between testable and measurable may indicate a test limitation. Some requirements may be measurable but not testable due to T&E infrastructure shortfalls, insufficient funding, safety, or statutory or regulatory prohibitions.

Test and Evaluation (T&E)— The act of generating empirical data during the research, development, or sustainment of systems, and the creation of information through analysis that is useful to technical personnel and decision makers for reducing design and acquisition risks. The process by which systems are measured against requirements and specifications, and the results analyzed to gauge progress and provide feedback.

Test and Evaluation Master Plan (TEMP)— Documents the overall structure and objectives of the T&E program. It provides a framework within which to generate detailed T&E plans and documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary developmental, operational, and live-fire test activities. It relates program schedule, test management strategy and structure, and required resources to critical operational issues, critical technical parameters, objectives and thresholds documented in the requirements document, and milestone decision points.

Test and Evaluation Organization— Any organization whose designated mission includes T&E.

Test and Evaluation Strategy— The overarching integrated T&E plan for the entire acquisition program that describes how operational capability requirements will be tested and evaluated in support of the acquisition strategy. Developed prior to Milestone A, the T&E strategy addresses modeling and simulation, risk and risk mitigation, and development of support equipment; it also identifies how system concepts will be evaluated against mission requirements among other things. The T&E strategy is a precursor to the TEMP.

Test Event— Any flight or ground event designed to collect data for the purpose of evaluating effectiveness, suitability, or TTP in a formal test environment. All test events should be defined in the test plan.

Test Integrated Product Team (TIPT)— Any temporary group consisting of testers and other experts who are focused on a specific test issue or problem. There may be multiple TIPTs for each acquisition program.

Test Limitation— Any condition that hampers but does not preclude adequate test or evaluation of a critical technical parameter, operational requirement, or critical operational issue during a T&E program.

Test Team— A group of testers and other experts who carry out integrated testing according to a specific test plan. NOTE. A combined test force (CTF) is one way to organize a test team for integrated testing.

Threshold— A minimum acceptable operational value below which the utility of the system becomes questionable.

Waiver— A decision not to conduct OT&E required by statute or policy.