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AIR FORCE METROLOGY

AFMETCAL NEWSLETTER



Locally Developed Calibration Software By Lynn Parcel AFMETCAL/MLES

Technical order (TO) 00-20-14 authorizes Precision Measurement Equipment Laboratories (PMELs) to develop local use software to automate Test, Measurement, and Diagnostic Equipment (TMDE) calibrations. When using locally developed software, the calibration TO identified in 33K-1-100-2, or the appropriate Calibration Measurement Summary (CMS), is the calibration authority. The use of this software is considered a controlled substitution of equipment and therefore subject to the normal restrictions that apply to substitution of equipment.

Locally developed software includes both software code written by the PMEL and commercial-off-the-shelf (COTS) software acquired by the PMEL. You could, for example, purchase additional SureCAL procedures from Northrop-Grumman to use with the SureCAL licenses provided by AFMETCAL under the locally developed software provisions. AFMETCAL will not validate your local software, nor endorse the use of a particular software package. The PMEL is responsible for notifying AFMETCAL that they are using this locally developed software. The notification includes details of the TMDE supported by the software. Therefore, you must update your locally developed software notification whenever you add the capability to support additional items. Contact Scott Brockway (Email: Scott.Brockway@afmetcal.af.mil; DSN: 366-5146) to report your local software usage. As a minimum the following information will be required:

Base

Software Title

Software ID (any local ID used)

Software Revision

Local POC

Locally Developed or Commercial Product

Date PMEL Started Using the Software

Calibration TO Software Supports

All K100 Items Calibrated With This Software

TO 00-20-14 paragraph 3.1.6.2.2 identifies the minimum calibration software documentation requirements for locally developed software. The calibration authority (manual TO) serves as a software requirements specification. Therefore, whenever the manual TO changes, you must perform a validation and verification (V&V) of the software to certify that your "substitution" meets all the requirements of the current calibration authority.

Note: The local software policy differs from the policy for AFMETCAL distributed "-10" calibration TOs such as 33K10-4-1-10 (SureCAL) procedures or 33K10-4-2-10 (NextGen) procedures. By definition, the "-10" TO and the manual TO have equivalent calibration authority. Neither TO is dependent upon the other. While AFMETCAL strives to keep the "-10" TO and manual TO synchronized, there is no reason the "-10" TO cannot be used as the calibration authority when the manual TO changes.

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Special points of interest:

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- B-1B Advanced Digital Test Station, page 6
- Boonton Power Sensor PN 51085, page 11
- The Wide, Wide World of TOs, page 12
- AN/USM 670, Electronics Systems Test Set, page 13
- Variable Coaxial Attenuators, page 13
- 5790A/AF AC Measurement Standard, page 13

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Coming Events:

- Measurement Science Conference, Disneyland Hotel, Anaheim, CA 27 February-3 March 2006
- AFMETCAL Advisory Group & PIWG Meeting Smith Community Center, Robins AFB, GA 21- 23 March 2006
- AFMETCAL Worldwide PMEL Workshop Granville, OH 4-8 June 2006

Commander's Comments

Colonel Marvin E. Cook
Director of Metrology



The views and opinions expressed herein, unless otherwise specifically indicated, are those of the individual author. They do not purport to express the views of the U.S Government, the Department of Defense, Department of the Air Force or HQ AFMC.



There is no doubt in my mind that we have the premier metrology program in the Department of Defense and probably within the entire world. It is nice to be at the top, but challenging to stay there! I have found that if you want to stay on top, you must work hard at it and continuously improve or someone will come along to knock you off the hill. Some of you may have heard of ISO/IEC 17025. This is an international quality standard which many countries and national and international businesses are now using to provide a minimum level of assurance regarding the quality processes that they use in the operations of their business. I am very proud of our quality processes, but I am not so blinded by how well we do things that I do not see we can always improve in some way to become more efficient and do things that are beneficial to our long term success.

Some things that I have found were very beneficial in previous jobs have been continuity books that identify everyday processes and walk the reader through the process from start to finish. A continuity book is a great tool for teaching new personnel and provides a quick refresher if you have not done the process in a while. This is just one example of requirements in ISO/IEC 17025 that are not specifically addressed in TO 00-20-14.

As TO 00-20-14 details many AF requirements not found in ISO/IEC 17025, we cannot and should not merely adopt ISO/IEC 17025 as our quality document. We can, however, look at ISO/IEC 17025 requirements to see if there are good management practices that we can use to make our programs stronger and have value added.

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Disclosure

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Editorial Policy Statement: The AFMETCAL Quarterly Newsletter is the AFMET-

CAL Detachment 1 Commander's forum to share insights into policy, emerging trends and other information of interest to the Air Force metrology community. Newsletter articles cover many topics: technical issues; clarifications of policies/procedures; process improvements; and items of general interest about Air Force metrology community members. We encourage readers to submit articles that fall within these categories. Submissions should be in WORD format, accompanied whenever possible by digital pictures in JPEG format. We validate technical articles with the AFMETCAL Engineering staff to ensure we do not put out erroneous information. We also ensure submissions meet Privacy Act, OPSEC and other information security requirements.

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Locally Developed Calibration Software (continued)

(continued from page 1)

A V&V is required for local software to provide assurance that the automated procedure performs a calibration equivalent to the recognized calibration authority (manual TO). You need to document a V&V test plan to describe the approach you are using to perform the V&V test.

When comparing the automated procedure to the manual procedure, you must assure that the same tests are performed using the same test methodology, test points, test limits, and acceptable test accuracy ratios. Document any discrepancies and develop an implementation plan defining how these discrepancies will be managed. If you are creating custom software, you can normally control these issues through software modifications. If you are using COTS procedures you do not have that same control. You could, for example, conclude that the automated tests which deviate from the manual TO will not be used. Those test sections will be run manually. If the automated procedure

test limits are different but the procedure reports measured values, you may conclude the test can be automated but the results will be analyzed manually. If the automated procedure is missing tests required by the manual TO, document the sections of the manual TO which will be implemented manually and those that will use the automated procedure. Differences in test methodology or test points would generally not be acceptable unless the discrepancies can be supported by sufficient error analysis or approval of the calibration Technical Content Manager (TCM).

If you purchase additional SureCAL COTS procedures from Northrop-Grumman, they must be run directly from the COTS SureCAL application not the 33K10-4-1-10 application. They are not sanctioned procedures under 33K10-4-1-10 but alternate methods under the calibration authority of the manual TO. Be aware that AFMETCAL has made substantial modification to all the COTS SureCAL procedures we have quali-

fied for use in 33K10-4-1-10 to resolve discrepancies with the manual TO.

TO 00-20-14 paragraph 3.1.6.2.3 requires the PMEL to document their local software acquisition, development, validation, control and management processes in the laboratory's Quality Manual. Local software policies and documentation are subject to review during PMEL evaluations. Local software can be disapproved for use if the software has not undergone proper V&V, is not properly documented, or does not satisfy the requirements of the calibration authority.

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Commander's Comments (continued)

(continued from page 2)

I have asked Chief Truax and his MLC team to provide the PMELs with suggested quality improvement techniques that they have gleaned from ISO/IEC 17025 and to develop a way to recognize PMELs that are able to use these new techniques to improve their quality program. We will be modifying our PMEL Certificates of Compliance to include statements that give credit to PMELs who have successfully met the intent of selected portions of ISO/IEC 17025. This will be on a strictly voluntary basis and no PMEL will be penalized if they feel that it is not in their best interest to participate.

I strongly believe that we must continue to get better to avoid becoming irrelevant. Only by standing still do we put ourselves in a position to be passed. We are in a great position to extend our dominance of metrology for decades to come, but only if we recognize we have further to go. Thanks for your continued support of the AF Metrology Program and for giving our warfighters the best tools possible in our fight for freedom.

Colonel Marvin E. Cook
Director of Metrology



News and Notes

Ohio Senator Mike DeWine Visits AFPSL



Ohio Senator Mike DeWine listens as Ben Fullen, Bionetics Program Manager, Air Force Primary Standards Laboratory, explains.

Ohio Senator Mike DeWine listens as Ben Fullen, Bionetics Program Manager, Air Force Primary Standards Laboratory (AFPSL), explains the calibration traceability chain for the infrared seeker head of an AIM-9 Missile being fired by an F-22. A copy of the AIM-9 story board is shown below. The AFPSL has produced several story boards depicting calibration traceability from the weapon system through the PMEL and AFPSL to NIST. Looking on are

Karen Semer, Air Force Metrology and Calibration (AFMETCAL) Government Program Manager, and Rick Platt, Executive Director of the Central Ohio Aerospace and Technical Center (COATC), home of AFMETCAL and the AFPSL.

Ben Fullen
Bionetics Program Manager
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“The AFPSL has produced several story boards depicting calibration traceability from the weapon system through the PMEL and AFPSL to NIST.”

1
F-22 Firing an AIM-9 SideWinder Missile

2
Missile Maint Tech checks out AIM-9 heat seeker head w/ TS-4044D Missile Test set

3
PMEL Tech calibrates the TS-4044D Missile Test Set with Target Simulator

4
Target Simulator calibration using an AFPSL calibrated Radiometer

5
Radiometer Calibration using an AFPSL Black Body

6
Black Body Calibration using NIST developed Intrinsic Standards

AIM-9 MISSILE TRACEABILITY

A Win-Win for Air Force Metrology

On September 12, 2005, at the request of Selfridge ANG PMEL, two engineers from AFMETCAL arrived to support the calibration of the A/M37T20B Jet Engine Test Stand, provide training on the AF75E Vibration Transducer, present orientation on the 9210 Triple Point of Water Maintenance System, and assist on various software automation applications.

The engineers were here for a total of five days and during this time the information that was exchanged between technicians and engineers was most productive for all parties involved. The education that the engineers received from being on-site to witness first hand the difficulties that are encountered could not have been experienced in any office environment. The “hands-on” type training that the engineers provided made the process simple with positive results.

This is the type of information exchange that the AF metrology program can use to improve processes, skills, and accuracy at a minimal cost with outstanding results. I encourage all technicians and engineers to use

each other as a means of training, learning and enhancing the capability of the AFMETCAL program.

Stephen Krus
Selfridge PMEL
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AFMETCAL has many avenues of assistance available for the PMELs. This would include email, phone conversations, snail mail or staff assistance visits. Please utilize the type of assistance that is most appropriate to your concern. While it would be nice to be able to visit every PMEL when a concern is brought forward, due to manpower limitations that is not always the most optimal way to solve the issue. AFMETCAL will work with you to make sure that it stays a Win-Win situation and that the information flow is a two way street with both parties benefiting.

Tom Carpenter
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Evaluation Team Opportunity

A position is open with a March 2006 reporting date for a highly qualified Master Sergeant to join our team. We ran an ad through EQUAL PLUS. There were, however, no volunteers, so the process of selecting the first non-volunteer since my arrival has begun. It is unfortunate that we were unable to solicit a volunteer but will now

allow the system to work in order to ensure we have sufficient personnel to meet our mission.

Chief Master Sergeant “Buddy” Truax
AFMETCAL/MLC
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Jay Goletz, AFMETCAL Mechanical Engineer demonstrates AF75E Vibration Transducer Calibration System for Stephen Krus, Selfridge PMEL technician.

**“Opportunity
to Excel.”**

B-1B Advanced Digital Test Station (ADTS)



B-1B Advanced Digital Test Station.

In November 2003, Teradyne Inc. was awarded a \$67 Million contract to produce 35 Advanced Digital Test Stations for the B-1B Weapons Systems. These test stations are designed to replace the existing IATE Test Stations and serve the B-1B world through the remaining life-cycle of the aircraft. The Station is a five bay automated test station comprised entirely of modern programmable Commercial Off The Shelf (COTS) equipment. Software programs known as Test Program Sets (TPS) will be developed to use the stations to automatically test aircraft Line Replaceable Units (LRU's) and Shop Replaceable Units (SRU's). As of this writing, four ADTS stations have been delivered to Tinker AFB.

Through the B-1 Program Office at Tinker AFB, there was early involvement of AFMETCAL in helping establish the Calibration and Technical Support requirements for this contract for this program prior to Contract Bid proposals.

There was a post contract award kick-off conference held in January 2004. At this conference, the B-1 Program Office brought together an ADTS Contract Team made up of members from five separate entities. Representatives from the Prime Contractor (Teradyne) and their sub-contractors, the B-1 Program Office (Tinker AFB), AF Metrology Program (AFMETCAL MLSR/MLES), ATS Office (Robins AFB) and Air Combat Command (Langley, Dyess & Ellsworth AFBs) met and formulated guidelines to establish a team approach to ensure the success of this effort. Having both military and AFETS civilian representatives from the operational bases present to input weapons system knowledge was definitely advantageous from the outset.

Since the initial conference, the level of cooperation and involvement between the five segments of the team has been outstanding. There have been seven PMR/IPR conferences (quarterly) held to review the progress of the test station production effort, development of the Calibration & Maintenance

Technical Orders, and to provide input from the team to Teradyne on necessary changes and issues that might arise. Teradyne has hosted a weekly teleconference to review status of Action Items generated at the PMR/IPR conferences and to exchange information with all segments of the ADTS team.

From a Metrology standpoint, this early involvement has led to successful completion of a Calibration Measurement Requirements Summary (CMRS), successful development and testing of an Automated Calibration Procedure (33K9-4-70-1) using PATEC assets, and early development of a completed ADTS SICL listing to be incorporated into the B-1B Calibration Measurement Summary (T.O. 1B-1B-37). This effort has also been responsible for re-opening lines of communication between AFMETCAL, the B-1 Program Office at Tinker AFB, the ATS Office at Robins AFB, and our USAF customers.

AFMETCAL hopes to use the criteria of the positive "lessons learned" from this effort to develop and publish guidelines for engaging all Weapons System Program Offices and Managers on future support equipment contracts. This guideline will be posted on the AFMETCAL Public Website in the near future.

A special mention of the B-1 Program Office Team (Tinker AFB) led by Mr. Wendell Wilson has to be made. The efforts of the entire Tinker AFB team has been phenomenal. The B-1 Program Office has totally supported this effort. Mr. Wilson and crew have coordinated, scheduled, financed, refereed and amalgamated all the efforts of a very diverse and opinionated group of professionals into a true success story. Also, Colonel Fred Gebhart (Retired) gets a lion's share of credit for being the driving force behind the initial concept of this project.

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"AFMETCAL hopes to use the criteria of the positive "lessons learned" from this effort to develop and publish guidelines for engaging all Weapons System Program Offices and Managers on future Support equipment contracts."

About People

PMEL SNCO Captures 31 FW SNCO of the Quarter

On 27 October, the 31st Fighter Wing (31 FW) gathered to recognize the best of the best. Master Sergeant Harold R. Smith was recognized as the 31 FW Senior NCO of the Quarter for the 3rd Quarter 2005. His selection was no surprise as he has demonstrated superb leadership of the Quality Program, proved himself as acting 1st Sergeant,

and helped the Aviano community achieve excellence. The Aviano PMEL is very proud to have such a strong leader and motivated warrior!

Master Sgt. Jose Lugosantiago
Aviano AB Italy
jose.lugosantiago@aviano.af.mil



Master Sgt. Harold R. Smith, 31 FW SNCO of the Quarter.

AFMETCAL Award Winner

Please join me in congratulating Master Sergeant Craig "Woody" Niemann for his selection as the AFMETCAL Senior NCO of the Quarter (July – September 2005). The competition is extremely tough when you compete against "the best of the best" and this was a well-deserved recognition. Woody's duty performance has been exemplary, not only in the area of PMEL evaluations, but also working with our engineers to help re-

solve many of YOUR issues. Additionally, he trained for and completed the USAF marathon; so be prepared for some PT when he assesses your operation.

Chief Master Sgt. "Buddy" Truax
AFMETCAL/MLC
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Master Sgt. Craig "Woody" Niemann accepting AFMETCAL Senior NCO of the Quarter plaque from Colonel Cook, AFMETCAL Director.

Holloman STEP Promotion

Great news! One of our sharp and very deserving PMEL Technical Sergeants was selected for Stripes for Exceptional Performers (STEP) promotion.

Brigadier General Cichowski, 49th Fighter Wing Commander, executed his STEP promotions to five Holloman team members; one being Master Sergeant Richard J. Jordan, currently working as a Unit Deployment Manager at the Maintenance Group.

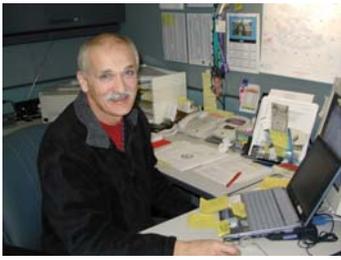
Each year in the Air Force 422 enlisted Airmen receive a STEP promotion making it the most competitive enlisted promotion program. The five who were selected at Holloman AFB are representative of the outstanding quality of Airmen our Air Force has within its ranks. Please extend congratulations to Sergeant Jordan.

Senior Master Sgt. Marcus Brown
Holloman AFB, NM
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Stripes Presentation: (left to right) Brig. Gen. Cichowski - Commander 49th Fighter Wing, Master Sgt. McMullen – Acting 49th Maintenance Group Programs Flight Chief, Master Sgt. Jordan, Major Joyner - Commander 49th Maintenance Operations Squadron & Colonel Moore - Vice Commander 49th Fighter Wing.

AFMETCAL Bids Farewell to Retirees



Terry Blackstone

Terry Blackstone bid adieu to AFMETCAL on January 3rd, 2006, closing the book on his federal service. Covering a span of nearly 40 years, Terry's total service included 4 years active duty in the U.S. Navy.

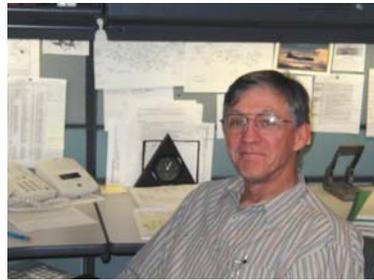
As an Equipment Specialist and Program Analyst, Terry provided a multitude of support to the AFMETCAL program, from projects such as the F-16 CMS, developmental research for the proposed world-wide PMEL outsourcing, and as manager of TO 00-20-14. He also served as chief of our Systems Requirements Branch and our Foreign Military Sales Branch, and lastly as chief of the Plans & Programs Branch.

Terry's AFMETCAL career dates back to 1974 and he recalled some of the significant projects, events or achievements that he was involved with: fielding the first automated calibration system (ACS-1), establishment and subsequent phase-out of the Type IV PMELS, standardization of weapon system CMS formats and workload tables, and instituting the use of NEC and NHA for SICL listings in the K-100, just to name a few.

According to Terry, one of the best

things about working for the Air Force was being involved with the best calibration program in DoD, with world impact.

Terry is currently single, although he says he's taking applications and conducting interviews, which reveals the good humored approach he is remembered for. His retirement plans include home remodeling, riding his Harley-Davidson motorcycle, the first flight in his ultra-light aircraft, and some travel.



Jim Ferry

On 3 January 2006, James E. Ferry concluded a federal career spanning 36 years 4 months service. An Air Force veteran, Jim served 4 years active duty in avionics maintenance, working on such things as the venerable ARC-34 radio system. Jim also served several years in the Air Force Reserve as a loadmaster.

Jim began his civilian AF career at the former Aerospace Guidance and Metrology Center, Newark AFS, Ohio in October, 1973. Progressing through a number of depot maintenance technical specialties, he later migrated to what is now AFMETCAL Det 1. Starting as a calibration technician in the AFPSL laboratories, Jim eventually found his way to the Plans & Programs Branch as a Measurement Area Planner (Equipment Specialist), where he spent a number of years supporting the PMELS with Equipment Support Plans, and coordinating ASC-734 equipment authorizations.

Jim says one of the best things about working for "Uncle Sam" was the variety of work skills and projects that he was fortunate to be involved with. It was that variety that he found interesting and challenging.

Jim and his wife Pat have no specific retirement plans for the present, but they do intend to make their annual pilgrimage to Florida in March, to watch the Cleveland Indians' Spring training. They also hope to do some traveling with the new camper they purchased.



Jerry Hurt

January 3rd, 2006 also marks the end of Jerry Hurt's 23-year federal career. A Vietnam veteran, Jerry served 3 years, 9 months and 2 days in the U.S. Navy, "but who's counting?", he says.

AFMETCAL was privileged to have Jerry in our Staff Support Office (Personnel) as a Management Analyst, supporting our employee training activities for some 6 years, always with a smile and a bit of humor.

The most significant event Jerry noted during his federal career was the attack on September 11, 2001. He says the best thing about working for "Uncle Sam" was being able to help employees obtain the training they needed and with various other requirements whenever they needed assistance.

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AFMETCAL Bids Farewell to Retirees (continued)

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In retirement, Jerry and Marsha, his wife of 31 years, intend to help some friends improve their businesses, perform some volunteer work, and simply enjoy each day with a little walking, reading and relaxing.



Lynn Parcel

Lynn Parcel put the wraps on his 31-plus years of civil service, all of which was with the AFMETCAL Program, on 3 January 2006. During his career, Lynn held several occupations, culminating as Lead Computer Engineer in the Software Engineering Branch.

When asked to comment on any significant events during his tenure at AFMETCAL, he said the first

item that came to mind was the extended, various efforts to get a PAMS replacement defined, recognized and funded. Readers may be aware of Lynn's sizeable contributions in this regard.

Job stability and the quality of people are two positives that Mr. Parcel mentioned when asked about a federal career with the Air Force.

Lynn and his wife Jo Ann plan to travel and do some gardening in their retirement. He also is considering software development, woodworking and possibly some consulting work to occupy his "free" time.



Bill Sikora

Bill Sikora, a Budget Analyst in the Financial Services Office, retired from AFMETCAL on 3 January 2006, with 36-plus years of federal service. An Air Force and Viet-

nam veteran, Bill served as an Airborne Radio Systems Operator for over 3 years.

A member of the AFMETCAL Program since September 1996, Bill will be remembered for his dedicated support on our O&M budgets, and always with a cheerful smile.

When asked about any significant achievement during his federal career, he replied that he was proud of reaching a milestone of more than 36 years of service.

The best thing about working for "Uncle Sam" was "the People, the People," as expressed in Bill's own words.

To keep busy in retirement, Bill plans to ride motorcycles with his wife Annie. A skilled woodworker, he also plans to enjoy working in his shop at home.

AFMETCAL takes great pride in recognizing the combined 166-plus years of dedicated service these five individuals gave to our nation, a major portion of which directly supported the AFMETCAL Program. Their accomplishments give great credit to themselves and to the U.S. Air Force, and their day-to-day presence will be missed.

Steve Keinath
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MLC Chief's Corner



MORE THOUGHTS ON QUALITY

During a recent evaluation at Base X; a young senior NCO told me that he wasn't sold on the quality program. He said that, instead of the three hours or more that he spends doing the root cause analysis, he would simply invest that time into training

and resolve the issue (or nonconformity (N/C)). It made me think for a moment before I responded, but this is what I told him.

That would be a GREAT solution if training was truly the underlying root cause for the nonconformity. But "what if" the individual had a family member with a terminal disease and was simply not thinking about the job when they certified the item? What if their spouse was having an affair? What if they didn't have enough money to pay their rent next week? The list could go on forever, but

my point is that training is not always the answer, counseling is not always the right answer --- every situation is different. That is why we have evolved to where we are today in regards to our quality program. Each nonconformity is different and if we fail to analyze it correctly and come to the genuine root cause for the N/C, then it is IMPOSSIBLE to implement effective corrective action.

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MLC Chief's Corner (continued)

(continued from page 9)

And that is what we are trying to accomplish; the bottom line is to prevent the N/C from happening again—not only by that technician but by anyone else who may fall victim to the nonconformity. I've written articles on quality in the past, but this was a great reminder to me in regards to why we manage the quality program as outlined in Technical Order (TO) 00-20-14. I would love to take credit for the vision of implementing this program, but I can't—others before me designed and implemented the program. And while I can empathize with some of the frustrations you experience in regards to the time it takes to comply with the program, I am thoroughly convinced that, when done properly, it is an asset to our overall program. We (MLC) are not looking for a *War and Peace* version of your efforts; simply capture the facts, use sound investigation, weigh all possibilities, come to a logical conclusion and implement an effective solution. It's not that difficult and I have seen many EXCEPTIONAL quality programs where everyone buys into it and does not consider it particularly labor intensive.

So please understand why we do things the way we do and embrace the program to the best of your ability. Good luck and I'll see you in a future quality interview...

PLAN FOR YOUR FUTURE!!!

In case you didn't know it, I am your representative to the Maintenance Chiefs Advisory Board (MCAB). At our recent MCAB, the subject of career job reservations (CJR) came up and provoked a lot of discussion. Many Maintenance Chiefs are concerned because many good troops are not getting CJRs. There is clear guidance concerning the CJR policy and I highly encourage all personnel to become familiar with it. It is not just young troops who require a CJR to remain in PMEL, but all supervisors so you can appropriately counsel your troops on their best career options. There is also guid-

ance on exceptions to policy, but they are highly scrutinized: every one approved means another person will not get one. There is a lot of information on this subject at:

<http://www.afpc.randolph.af.mil/enlskills/Reenlistments/CJR.htm>

Again, I encourage you to research this, stay on top of information and do your best to maintain as much control of your career as possible.

AND SPEAKING OF THE FUTURE...

The Commander opened up this edition with some discussion on our program and the International Organization for Standardization (ISO) and specifically ISO/IEC 17025, *General Requirements for the Competence of Testing and Calibration Laboratories*. As the Commander pointed out, TO 00-20-14 details many AF requirements not found in ISO/IEC 17025. Thus, we cannot merely adopt ISO/IEC 17025 as our quality document. We can, however, look at ISO/IEC 17025 requirements to see if there are good management practices that we can use to make our programs stronger.

In this light, we recently briefed your command functional managers (FAMS) on the Commander's thoughts on this subject during the Advisory Group. Mr. Robert Nappier gave a comprehensive briefing on some recommended Quality System/Management System (QS/MS) improvements. The purpose of this briefing was to provide your FAMS with an overview of the evolution of our QS/MS, the current requirements of the QS/MS and AFMETCAL's vision of incorporating more of the ISO standard into our program. The presentation outlined the major differences between our current QS/MS requirements contained in TO 00-20-14 and the voluntary consensus standard contained in ISO/IEC 17025. Mr. Nappier completed an in-depth gap analysis that highlighted the similarities and differences between these two documents. The gap analysis also out-

lined the areas where our TO 00-20-14 QS/MS did not specifically address the ISO standard 17025 requirements.

There was significant resistance, as there often is to change, to mandating document control (for one specific example) as a future initiative. So what we are now considering is providing a VOLUNTARY participation that would result in ISO 17025 compliance statements on future Air Force Certificates of Compliance. We want to emphasize that most of our recommended changes could be accomplished with minor changes to TO 00-20-14; for example; inclusion of processes already defined in PMEL continuity binders and the establishment of document control procedures in the PMEL's Quality Manual. The Commander has tasked MLC to develop a Quality Manual Template to post on METWEB that would assist the PMELs with further developing their Quality Manuals to meet these requirements. We have procured a commercial product and are currently reviewing it for future posting.

You should see a lot more on this subject in the near future, but I wanted to keep the field informed on our current projects. I want to stress again that this concept would be completely voluntary. Your lab will make the decision if they want to pursue the "above and beyond" ISO 17025 compliance statements on future Certificates of Compliance.

This would in NO WAY indicate a Certificate of Compliance without the statement is diminished in regards to full program compliance. We simply want to consider ways to ensure our Air Force Metrology and Calibration program remains the leader and realize that a stagnant stance will not guarantee this goal. Again, there are no plans to direct changes to the evaluation program or processes; you should, however, expect future information on opportunities to participate. *(continued on page 11)*

MLC Chief's Corner (continued)

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A FOND FAREWELL

Dover PMEL K8 Guru Digging a New Niche. After almost 38 years of federal service in support of high-flying efforts of the USAF, Mr. John Crockett has decided on a career transition that will bring him down to earth – literally.

Mr. Crockett retired from his position as a calibration technician with the DET-1 OL-B PMEL at Dover AFB DE where he served for more than 18 years; primarily as the mainstay of the laboratory's K8 section. During his service with the Dover Lab, he established himself as a consummate K8 technician and theorist whose depth of understanding and attention to detail provided the lab and its customers with safe, accurate, reliable and traceable calibration support to the highest accuracy electrical parameter measurements.

Mr. Crockett began his service to the Dover AFB PMEL in July of 1986, after prior service as an Aircraft Autopilot and Instrument Systems Technician, both Active-Duty and as an Air Reserve Technician. During that portion of his service, he played a key role in the 436 MAW transition from C-141A aircraft to the first C-5A Airlift Wing. Mr. Crockett's expertise was also utilized in support of a number of concurrent development activities to bring the C-5 flight control and autopilot systems online and up to specification as the aircraft matured into the work-

horse heavy hauler it is today.

During John's exemplary service with the Air Force, he was a recipient of numerous accolades including, but certainly not limited to, the AF Achievement Medal and AF Meritorious Service Medal. As a PMEL practitioner, Mr. Crockett attended and was an honor graduate of the Advanced Calibration, Measurement and Diagnostics Course at Lowry AFB. He also earned recognition as the 436th Avionics Maintenance Squadron Technician of the Year, along with several awards for superior performance, including sustained superior performance. His conscientious approach to all aspects of his work, reinforced by a thorough understanding of the principles of metrology and the underlying physics, allowed him to not only identify deficiencies in procedures, but also to recommend solutions to correct or improve our practices.

Constants in Mr. Crockett's life are his faith and devotion to his family and country. He is an active member of his church and has been married since 1971 to the former Bethel Bretscher. They have two children, Rebekah and Michael, both of whom are currently attending graduate school. In addition to his abilities as a technician, John is also certified as a schoolteacher in the area of Natural Sciences.

John's interest in and appreciation of nature has been the source for his long standing enjoyment of gardening and the impetus for impressive landscaping projects and even his

choice of employment in his post-PMEL period. He has accepted a position as a caretaker at the Delaware Veteran's Memorial Cemetery. Although Mr. Crockett is not entirely certain as to the full range of duties he'll be performing there, those of us who have been privileged to know him and work with him are wishing him well and hoping he really digs it! [Submitted by his "PMEL family and friends" at Dover AFB DE.]

I want to thank Mr. Crockett personally



Mr. John Crockett retired from his position as a calibration technician with the DET-1 OL-B PMEL at Dover AFB DE.

for his service to our nation, the United States Air Force and the PMEL function. I had the privilege and honor to serve with John for several years at the Dover PMEL. Please join me in congratulating him and his family for their tremendous support!

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From the Bench

Boonton Power Sensor PN 51085

Some PMEL's have reported that the Boonton power sensors 51085 are not flat below 50 MHz and failing calibration. Boonton will change the EPROM to allow additional calibration factors below 50 MHz at no charge.

Contact Boonton at (973)-386-9696 for

return merchandise authorization (RMA) number. Boonton POC is Rick Theiss, Product Manager/Senior Applications Engineer.

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The Wide, Wide World of TOs

“PMELS and TOs are both essential parts of the Air Force’s war-fighting effort.”

I’m here to discuss the thrill of DoD MIDAS, and the agony of ETIMS. Sorry, only the older generation will get the joke. Enough of my attempt at humor --PMELS and technical orders (TOs) are both essential parts of the Air Force’s war-fighting effort. With this article, I hope to update you on some of the changes going on in the land of TOs. We’ll start with the demise of DoD MIDAS and AFMETCAL’s effort to make it easier for you to handle those pesky Army and Navy calibration procedures. Then, we’ll move on to the Enhanced Technical Interchange Management System (ETIMS) and its future in the Air Force.

Most of you are familiar with DoD MIDAS: the two CDs you receive quarterly that contain all of the Army and some of the Navy and AF calibration procedures. This CD set is a joint services project to eliminate duplication of effort between the services when it comes to writing calibration procedures. Around the time you read this, the AF version of DoD MIDAS, 33K-1-102-CD-1, will be rescinded and will no longer be available. Don’t panic, the Army and Navy procedures that are called out in AFCAV will still be available, just through a different route. The roughly 130 Army and Navy procedures that were on DoD MIDAS and required for use by the PMELs will be made available via MetWeb. Plans are to have a page under the TO Support section with hyperlinks to each calibration procedure. When required by your lab, these procedures can be downloaded for your use to perform calibrations for equipment listed in AFCAV. The biggest benefit from this will be the fact that you, your QA, or anyone else in the lab will not have to scramble around trying to verify Army or Navy procedure dates. All that will be required is a quick check of MetWeb to verify that your copy matches the MetWeb version. Currently, the plan is to only include on MetWeb the Army and Navy procedures that are on DoD MIDAS, but future plans are to place all Army and Navy procedures in AFCAV onto MetWeb. Please feel

free to contact me with comments, suggestions, or issues.

Now for the sad, sad news: ETIMS, as a continuing program that we all hoped would be fielded soon, has been shut down. Repeated delays and issues with the code have resulted in the contract being terminated for nonperformance. The Air Force is going back to the drawing board in its acquisition strategy. With the current system, JCALS, quickly nearing the end of its life cycle, the highest levels of the AF have become involved. Personnel at HQ AF/IL (Installations and Logistics) are currently developing the acquisition strategy. Possible solutions include using an organic solution or using the contracting approach called “Fast Track.”

Here at AFMETCAL, we are staying very involved because, as most of the PMELs already know, our TOs are digitized and ready to go. Currently, AF policy holds us back by requiring that we “push” updates to you by some source other than email; TOs cannot be emailed unless encrypted and digitally signed. We are looking into an AFMETCAL-developed way to process AFTO 22’s and make Calibration TO’s available for Air Force Customers via METWEB. If you have an idea for a solution for the interim which meets the AF policy we would love to hear it.

In closing, we hope the change we plan to make with DoD MIDAS will make your job in the lab just a little easier. While the news from the ETIMS front isn’t so good, you can always help us figure out a solution for interim use. For those of you who attended the last worldwide conference and heard me talk of the benefits of the “soon to be released” ETIMS, this year I will be wearing a raincoat to protect myself from thrown tomatoes. Alas, as we all know, some things are out of our control.

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We're on the Web!
www.afmetcal.af.mil

AN/USM 670, Electronics Systems Test Set

Problem: We received two Electronics Systems Test Sets (AN/USM 670) from two separate flight line work centers; neither of these units would pass calibration.

Facts: After researching the history on these two units, we discovered that one of the units was brought to PMEL where it passed initial calibration. The initial calibration performed on this unit was a manufacturer's certification (no quantitative measurements were taken). The other unit was not taken to PMEL for initial calibration until the work center noticed the manufacturer's date due calibration was overdue. After many attempts at getting the units to pass calibration, an engineer team from WR-ALC came to troubleshoot the units.

Outcome Part I: The malfunction on these units was isolated to a separate CCA card (both units had the same problem...each unit had one bad CCA). Prior to

placing the order for the parts we discovered the price tag on the CCA components was in excess of \$32K. Each CCA had the identical price tag even though the bad cards were completely different.

Outcome Part II: Aviano PMEL initiated a price challenge on the CCAs for the AN/USM 670. While the price challenge is being processed (currently at USAFE ZOP), the current price for these CCAs is what you will spend to replace them (\$32K).

Follow-up: At the time of this writing, a decision on the price challenge was not made. Once a decision is made, we will up-channel the results. POC: Technical Sergeant Melvin L. Sims

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Variable Coaxial Attenuators/Step & Toggle Attenuators,

The K-procedure 33K4-4-64-1 for Variable Coaxial Attenuators has been incorporated into 33K4-4-74-1, the general procedure for Step and Toggle Attenuators. In addition, the Table 1 specifications have been moved to 33K-1-100-2 and are viewable via AF-CAV. 33K4-4-74-1 is now the general calibration procedure for variable, step and tog-

gle switch attenuators. It has been field tested and was put to print on 30 November 2005.

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Fluke 5790A/AF AC Measurement Standard

Fluke has issued a Rev 4 of the Addendum dated 5/03. This revision corrects some of the one year absolute specifications. The corrections are noted in bold type. If you have not already done so, you may download this addendum at <http://>

us.fluke.com/usen/support/manuals/default.htm. Search on 5790A/AF, and then click on download.

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Phone: 740-788-5003
DSN: 312-366-5003

The AN/USM 670, Electronics Systems Test Set from AAI Corporation.



“33K4-4-74-1 is now the general calibration procedure for variable, step and toggle switch attenuators”



Fluke 5790A/AF AC Measurement Standard.