



Six Sigma “leans” T700 engine production line

by Lois Contreras
CCAD Public Affairs

By now it is a well-known fact that the partnerships CCAD has entered into with private industry have had a definite impact for the better on production. Point in case is the CCAD directorate of engine production’s T700 engine family line. Since the implementation of Six Sigma process improvements, turnaround time (TAT) has improved considerably.

Under the CCAD/GE partnership signed Sept. 2000, the statement of work requirements included providing new material support, technical and engineering support and production control/production planning support. Shared goals were to reduce engine TAT, increase engine time on wing (TOW), implement commercial best practices, improve processes and shop flow, and provide Lean/Six Sigma manufacturing support and training for employees.

Tony Conrad, T700 Integration manager with GE, and his team have seen a significant reduction in engine TAT which is attributed directly to the implementation of Six Sigma concepts.

The material support portion of the partnership brought about the establishment of an on-site warehouse to maintain CCAD inventory with 1000 plus part numbers supported. The 100% material support from GE means minimized risks



Tony Conrad (l), T700 program manager with GE, discusses a chart with Robert Herrera, program administrator with the Lean Transition Office. “Everything we do is data driven,” says Conrad of the improved processes implemented on the T700 engine line at CCAD. A combination of Six Sigma/Lean process implementation has resulted in a reduction in the engine TAT from 261 days at the end of 2000 to 100 days today.

to production schedules. The shop floor ordering process has been reduced with the establishment of material kits on engines and modules. To date, 33 kits have been identified and implemented and over 9200 kits delivered to the shop floor. The GE team has also established a bi-weekly critical parts review with representatives from AMCOM, CCAD, GE Lynn, and GE CCAD. This has resulted in the development of a depot overhaul factor validation process and immediate direct vendor contact. As a result, the critical parts list has dipped from 90 to less than ten with the added ability to advance release material to support surge requirements is now in place.

(See “Lean” continued on page 8)



Heart Healthy Survey
17-28 May 2004
Info packets will be distributed soon.
For more information:
Juandalynn Givhan
x6570

Inside this issue:	
CCAD's "big hangar" gets a facelift	2
Be a part of the solution, not the problem	3
On the road...	3
Components production mgmt philosophy spells success	4
Soldier	5
Around the depot	6
CCAD represented at AAAA convention	7
The Aircraftsman is published by and for people like	8

CCAD's "big hangar" gets facelift

On Mar. 31 directorate of engineering personnel were busy with tugs, trailers, and cranes putting a new CCAD logo above the building 8 main hangar doors. The CCAD team compiled of the personnel listed in the photo below worked together to design, develop, manufacture, and install the logo. The images below provide a pictorial story of the process involved in getting the logo in place.



Please see narrative at bottom of page for identity of the logo team pictured above.



The CCAD logo was fabricated from 1/4 in. aluminum plate cut on the water jet cutter. The stencil consisted of eight 10" high by 84" long pieces applied horizontally to form the approximately 6'6" high by 7' wide logo at an approximate weight of 130 lbs.



The top photo shows (l-r) Rena Davis, directorate of manufacturing/process production' silk screen shop designed and installed the stencil; Ramiro Salinas, chief, tool & die branch organized the manufacturing; Paul Mills, ME tech./CNCM programmer designed logo; Joe Prado, machinist, cut out logo on water jet cutter; Ray Muniz, and Ignacio Guzman, riggers, provided ground support; Joe Benavides, rigger work leader supervised the installation; Ray Muniz (worked so fast the camera caught him in two different places at once!); and Agustin Acosta, secured logo in place. Not pictured are Robert Chavira, welder, who helped assemble and secure logo in place; William Moreno, machinist, who helped cut out logo; Fred Vera, chief, industrial trades branch, organized installation; Mario Rocha, painter, painted logo, Steve Spurlock, crane operator, lifted logo in place; and Paulino Landa, sheet metal mechanic, provided ground support.

Be part of the solution, not the problem

The total national cost paid for health care, days away from work, and lost production due to alcohol and drug abuse is estimated at **\$70 billion**.

Today in the United States, 71 percent of all drug users over the age of 18 are employed either full- or part-time; that's more than 10 million workers.

Studies reveal that substance abusers as employees have a tremendous effect on the workplace. They are more likely to have extended absences from work, show up late, be involved in a workplace accident and file a workers compensation claim. Substance abusers in the workplace significantly contribute to increased health care costs, disability insurance costs, absenteeism rates, employee theft, and accidents, as well as decreased productivity, product quality and employee morale.

In FY03, The CCAD Army Substance Abuse program (ASAP) identified 18 people who tested positive for alcohol or other drugs. Five of the positives came from people seeking employment at CCAD. They were not offered a job. Of the thirteen (13) employees who were positive, nine are no longer employed at CCAD. The remaining four sought rehabilitative treatment and have continued as productive employees.

Be part of the solution, not the problem. Report impaired personnel to your chain of command, the Wellness Center or CCAD Security.



Visit to 101st Airborne Division – Members of the CCAD team visited the 101st Airborne Division at Ft Campbell last month. Shown in photo during the tour of the engine shop are (l-r) Joe Herrera, director of engine production; Tammy Tuttle, chief, programs branch; Robert Stillman (partially seen next to Herrera), acting director of production management; Pete Rivera, director of resource management; Pat Oler, deputy to the commander; Larry Simone, director of aircraft production; Col. Jim Budney; Mo Asaad, director of manufacturing/process production; and Gary Adams with the 101st AB Div. who conducted the tour.

On the road

Visit to 160th SOAR (A) – Col. Jim Budney, commander, CCAD checks the tag on an engine just out of the shipping container at the 160th SOAR(A) hangar at Ft. Campbell and visits with soldiers during the tour of the process shops last month. CCAD directors were impressed with the tour and briefings they received during their visit.



Components production management philosophy spells success

by Lois Contreras
CCAD Public Affairs

The CCAD directorate of components production's success in meeting direct labor hours, and sick leave and revenue goals, improving performance, and exceeding production schedules is attributed to teamwork and open communication between management and employees, according to Wayne McConley, director of the largest directorate at the depot.

"I have some of the best employees at CCAD," said McConley. "They are highly motivated, hard-working, and they understand how important a job they do in support of the Soldier fighting the war."

The hiring of almost 200 much-needed employees during FY03 was also a contributing factor to the directorate's success. That, coupled with the right training, has built a team that is constantly meeting or exceeding production goals. Out of 1200 programs scheduled last year, 900 were completed on time and within cost. The

remaining met with parts/assets shortages, problems that are all too familiar throughout the depot.

McConley recalled the surge on components when he had limited funds and overtime and how employees in his directorate rose to the occasion by volunteering to work regardless of pay. This, he says, is indicative of the spirit of patriotism displayed throughout the directorate.

Performance charts which are reviewed daily are also a big contributor. The addition of the management analysis office, whose function is to track all scheduled programs, has facilitated identifying areas that may be having problems. At the first sign of a production schedule problem, McConley and the respective division and branch chiefs go to the area and discuss the problem and how to fix it. Though not one to believe in finger pointing, he does believe in accountability. Each employee is aware of their ownership in the components produced and knows that his/her ideas and thoughts are respected. McConley believes that treating employees with dignity and respect fosters cohesiveness and serves to instill pride in meeting all production goals.

"I like my job because it is supporting the troops," said Johnny San Miguel, instrument mechanic in the Instrument shop. "Another reason is

that the pay is good, and a third reason is my family."

San Miguel says communication between the supervisors and employees in the directorate is very good and he definitely feels he is part of a team.

At present, the directorate has three shifts working to support the engine workload with digital control units and history counters. Performance is high on all three shifts. Ten percent of the directorate of components production's workload goes to support CCAD programs and the rest goes to support war reserves stock,

and aircraft in the field that are waiting for components. All components, to include bearings, rotor blades, hydraulics, and avionic instruments — everything but the engine — needed by the customer are produced

by this one directorate. A big job and responsibility, but as McConley says, "Each division and each branch chief knows the business. Each knows the AWPS and the standard depot system and how to manage. Each one is a business manager who is held accountable for his work center performance matrix. We all support each other and we have a mechanism in place so that if I am not here, the work will continue."

"We believe in having a good time while getting the job done and showing our employees that they are appreciated," concludes Julian Martinez, chief of the electronics division.

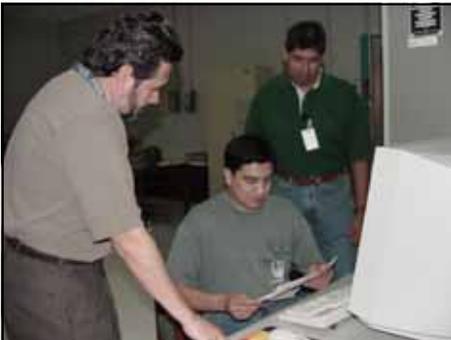
That philosophy is certainly working for the directorate.



Wayne McConley, director of components production (l), and Julian Martinez, chief of the electronics division (r), hold a plaque that will be presented to shop employees. "We have a good, highly motivated team," says McConley. "I know that even if I am not here, the work will go on."



Roy Carrizales (standing) an instrument mechanic in the directorate of components production, stops by to chat with Johnny San Miguel (sitting) while he works on a pressure altimeter. "I like my job because I know what I do supports our troops," says San Miguel.



David L. Garcia, 2d shift supervisor in the avionics shop of the directorate of components production (l), checks on information being entered into the computer by Joe Mendez (c), as Adan Zamora stops by with a question.



Soldier

Office, Chief of Public Affairs' Command Information Division announced this official mandatory change last October through PA Preview, Post-30- and at regional workshops. The Army Chief of Staff, through the Chief of Public Affairs, has directed that when referring to U.S. Soldiers, the first "S" in the word "Soldiers" be capitalized when used in all Command Information products.

So, next time you read an Army publication (such as the *Aircraftsman*), you will know why there is a capital "S" in "Soldier."



Casimiro A. (Casey) Barrera engine pre-shop analysis (r), received an on-the-spot award for his part in the development, and implementation of EXCEL programs that automated the use of travelers which is a tremendous success, and has significantly reduced the process time on engine, cold module, or power turbine module through work center. George Garcia, supervisor, engine induction/final & T55 engine test cell (l) presented the award.



Ricardo Reyna, engine pre-shop analysis (r), received an on-the-spot award for his participation in the engine PSA work center SIMPLER LEAN event. He identified and ordered materials needed to make inspection stations and disassembly cells uniform and tooled for maximum effect. George Garcia, supervisor, engine induction/final & T55 engine test cell (l) presented the award.

Around the depot...



The T700 Fuel Control Branch, 542F0 held a luncheon to honor Felipe Ramirez (seen at right in photo above), for 28 Years of Civil Service on 01 Apr 04. Mr. Ramirez and his wife Mary Ramirez (CCAD Retiree) are planning to do a lot of traveling.



Nelda Labbe-Spurgeon (l), supervisor in the engine test cell, directorate of engine production, discusses her Six Sigma project with Len Meyer, Six Sigma consultant with GE. Once Spurgeon completes her project, which includes identifying a problem area, analyzing, identifying and implementing a solution, she will be awarded the Six Sigma Green Belt. Both Six Sigma and Lean initiatives implemented in the T700 engine line have met with tremendous success in increasing productivity.



SGM Scott Hendershott (shown at right in photo left), was awarded the meritorious service medal by Col. Jim Budney on Mar. 30. Hendershott was commended for his service as depot sergeant major from the period Apr. 03 to Mar. 04. Hendershott, an individual mobilization augmentee with AM-COM, returned to his civilian job as a New York State trooper.

CCAD represented at Army Aviation Association of America annual convention



Wed. afternoon found directors (l-r) Wayne McConley, (components); Joe Herrera, (engines); and Pete Rivera (resource management) helping unpack and set up the CCAD display. Also seen in picture with back to camera is Jorge Aguilar from QA.



Attending the Fri. luncheon featuring retired Gen. Crosbie Saint were (l-r) Jim Kaylor (QA); Larry Simone (aircraft production); Col. Jim Budney; and, Pat Oler, deputy to the commander.



Shown at right is Jorge Aguilar tying a Texas bandana around the youngest convention attendee's neck during the Thursday evening combined AAAA chapter reception in which the Corpus Christi Chapter participated.



As always, the convention brought old friends together. Above, Jennifer Oler, retired/former CCAD commander Col. John Penman, spouse Lee, and Pat Oler pause for the *Aircrafter* camera.



Jorge Aguilar talks up CCAD to a visitor to the display on Mar. 25. Also seen in photo with back to camera is Tammy Tuttle talking to another visitor.



The CCAD T700 cutaway engine display received quite a bit of attention from Soldiers. In photo above, Tammy Tuttle, directorate of aircraft production, talks to a visitor to the CCAD exhibit.

CORPUS CHRISTI ARMY DEPOT
COL JAMES J. BUDNEY, JR.
DEPOT COMMANDER

The Aircraftsman
Public Affairs Office
308 Crecy Street
Mail Stop 19
Corpus Christi, Texas 78419

Phone: (361) 961-3627
Fax: (361) 961-3039
Email: lois.contreras@us.army.mil

Lois Contreras
Public Affairs Officer

Sharon Haynes
Protocol

Our Products Reflect Our Pride

We're on the Web!
www.ccad.army.mil

The *Aircraftsman* is published by and for people like...



...Hector Lopez, instrument mechanic in the rotating electric shop, directorate of components production, seen here working on a searchlight for the UH-60 Black Hawk...



...and, Steve Spurlock of the industrial trades branch, directorate of engineering services, the only crane operator at CCAD, seen here after the installation of the new CCAD logo on the front of the Bldg 8 assembly line hangar.

Reduction in turn-around time one of many Lean goals

(*"Lean" continued from page 1*)

Under the technical/engineering support portion of the partnership, the Team T700 has introduced commercial best practices with a goal to establish CCAD as a T700 engine center of excellence. The introduction of Six Sigma tools, commercial best practices, and the Lean manufacturing concept has seen 160 projects initiated with 124 completed to date. The impact resulted in a project-related and approved TAT reduction of 41 days during 2001 against a contract requirement of 37; 90 days during 2002 against a 70-day requirement; 30 days during 2003 against a 20-day requirement; and, year-to-date, an 8-day reduction against the 2004 contract requirement of 20 days. The team also established GE/CCAD power up lean logistics (PULL) teams in five key areas of the T700 engine shop. The team consists of AMCOM, CCAD, and GE personnel who monitor engines, modules, and component schedules to address critical production constraints and establish projects and actions to resolve problems. The PULL teams' impact has increased the number of engines, cold section modules and power turbine modules shipped each year. In 2000, the total units shipped increased by 520; a trend that has increased steadily each succeeding year—with 610 in 2001; 1014 in 2002; 1155 in 2003; with the goal to top 1400 in 2004 on pace to date. The engine TAT has been reduced from 261 days at the end of 2000 to 100 days and total work in process has also reduced from 654 units to an average of 320. The total units carried over from 2002 to 2003 was reduced from 420 plus to 120 and further reduced to 75 units carried over from 2003 to 2004. Material savings estimated at \$6.6M resulted from the implementation of repair development activities which added

new repairs to the manual.

The production control and production planning team implemented master schedule for engines and modules provides back shop schedules for 12 key/critical components, engine and module TAT reports, and tracking of major modules through the shop. Along with the master schedule, engine and module assembly workstation tracking charts to track the engine pull date for assembly; identify component and module shortages; identify the date the units clear testing; identify the number of WIP days for each unit; and track the status of rework and associated actions needed, were also developed and implemented. A weekly and monthly Lean/continuous flow schedule was also implemented to tie the induction and production schedules, provide for a lean continuous flow process, and reduce WIP and TAT and provide material planning.

Team T700's engine/module production/manpower chart shows an 83% increase in production efficiency which translates to an improvement from the old ratio of 1.2 units per worker to 1.6 units per worker.

"One thing you need to realize," said Conrad, "is that everything is data driven. For every process implemented, the fact that it is needed has been proven."

Field representatives for GE are assigned throughout the world which enhances customer feedback and support through communication and data analysis.

Among the team's goals and objectives for 2004 is the reduction of engine TAT to a consistent 115 days or less.

With the success the team has realized to date, that goal seems well within reach.

CCAD Employee Appreciation Day
Celebration of CCAD's 43rd Birthday (April 21, 1961)
Time/Location: Friday, Apr 23, 2004, 1200 – 1700 hrs
Sunfish Beach
Brisket & trimmings, Music, & Great Door Prizes
POC: Paul Lewis, x1-3915

