

## MEMORANDUM

To: Katalin Voros, Operations Manager  
From: **Ben Lake**, Cory Hall Machine Shop Sr. Superintendent  
Subject: 2009 Year-End Report  
Date: 29 January 2010

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My responsibilities as Engineering Technical Supervisor 2 of the Cory Hall Machine Shop last year were to manage day-to-day operations and provide support to Material Science Engineering's (MSE) machine shop. The Shop supported fifty-six Principal Investigators from various departments including EECS/ERSO, CITRIS, Physics, ME, ChemE, BNC/QB3, CNR, Astronomy, Life Sciences, NuclearE, ESPM, Biology, UCSF, LBNL, BMLA, and MSE. The following report summarizes the activities and accomplishments for 2009.

### I. MANAGEMENT & ORGANIZATION

The Cory Hall Machine Shop is a 100% recharge operation under ERSO management. In 2009 the unit consisted of one Engineering Technical Supervisor 2, B. Lake Jr., one Principal Laboratory Mechanician, J. Gavazza, two Development Technician V's, R. Amaral and A. Peterson, one Development Technician IV, E. Hester, and a half-time Administrative Assistant III, N. Peshette. All projects are submitted to the Shop in the form of work orders. Our accounting system consists of two major parts, the Machine Shop Job Management System (MSJMS) and "Time Logs". This system allows for accountability for all expense and income. We have housekeeping assignments and responsibilities that range from servicing machines, monitoring shared equipment for condition and proper guard settings for grinders, band saws and sanders to cleaning specific areas such as shared work surfaces, machine tools and the sink. These responsibilities are rotated monthly. The MSE unit consists of two Principal Laboratory Mechanicians, K. Yee and S. Montalvo. They report to C. Kumai, R&D Engineering Supervisor 2 in MSE.

The MSJMS program maintains a log of all work orders that are submitted to the shop. It records several important pieces of information that enable me to prioritize and assign projects to Shop personnel. It keeps an on going record of current work load information. The "Time Log" is a program which allows me to determine: who worked on what project, when it was worked on, and how long it took to complete. When we combine the "Time Log" document, submitted work order, and a copy of any material ordered, the loop is closed. All questions can be answered, including time spent and what materials were used at what cost. This system is the cornerstone of the business end of our operation. The individual documents are updated daily and are reviewed twice a month by me to ensure all information is current and accurate. I also use this system to provide vital information for yearly performance appraisals, which were submitted on time in 2009.

I meet bi-weekly with the Microlab and Machine Shop Operations Manager, K. Voros, to discuss workload, job priority, and general shop business and activities. I chair monthly Shop meetings, which are attended by my supervisor, K. Voros, and shop personnel including MSE staff. We have an agenda and discuss financial status, open items from previous meetings, projects specific to the safety and development of the Shop, general housekeeping issues and other items as needed.

## **II. PRODUCTION & SERVICES**

The Cory Hall Machine Shop completed 338 jobs for 56 PI's and the Microlab in FY 2008/2009. There were 118 jobs submitted in the form of job requests from the Microlab and 15 for Marvel Nano Lab (MNL). In addition we provided 225 hours of Proforma work for EECS, which included support for instructional laboratories and classrooms, removing and remounting shelving, engraving plaques and nameplates, and installing audio/visual equipment.

Our website, <http://mshop-erso.berkeley.edu>, features our capabilities, lists contact information, and has job request forms and general information such as photographs of completed jobs. It has streamlined our operation by answering some frequently asked questions and gives our customers an easy way to contact us. It is now even searchable through Google as Cory Hall Machine Shop or ERSO Machine Shop.

Safety is always a concern and I work with the campus EH&S department to stay current with information regarding our responsibilities as a machine shop to provide a safe working environment. I pride myself in keeping a safe, well-organized, clean and alert machine shop. I am a participant on the Cory Hall Safety committee, which helps me stay tuned to the changing environment we work in and allows me to pass on important information and guidance.

## **III. FINANCIAL STATUS**

The recharge rate is calculated to include all known and projected costs. R. Spivey, Administrative Manager, supervises this activity. During fiscal year 2008/2009 the Cory Hall Machine Shop collected recharge revenues of \$304K, which covered supplies and expenses and the deficit carry-over from the last year. The Machine Shop started fiscal year 1009/2010 with a carry-over deficit of \$842.

Finances for the two components of the joint shop, ERSO and MSE, remain separate except for some shared supplies which are split 65% ERSO and 35% MSE.

## **IV. COMMENTS**

One exciting project that the Machine Shop is very involved with is the outfitting of the new Marvel Nano Laboratory. Our responsibilities include transplanting delicate, precise, instruments and semiconductor processing equipment from the Micro Lab in Cory Hall to the new facility in Sutardja Dai Hall. We also re-engineer current equipment to operate in the new lab with new standards as well as receive and install new equipment such as AMET EPI and ALN2. The challenges that this project presents are both exciting and motivating. I am fortunate to work with such a talented crew. They allow me the opportunity to grow and develop with the changing needs of our client base. I continue my efforts to maintain and develop the quality of the Machine Tools, equipment and education of the Machine Shop and the people in it. This year the Shop personnel spent 4 days in training sessions to learn "Orbital Welding", a process used in state of the art Laboratories to join stainless steel tubing together and achieve 100% penetration and purity, to install process gasses needed to operate a world class semiconductor processing facility. I have budgeted for and selected machine tools to be rebuilt. My goal continues to be responsible for the most safe, efficient, organized, and well equipped Machine Shop on the campus of U.C. Berkeley.