QIT #2 Receives Accomplishment Award

QIT (Quality Improvement Team) #2 was a team assembled to work with the Shearcut operation which was producing a "hair" type defect on NDT (Non-Destructive Testing) material. The hair problem resulted in customer complaints, a reduced machine capacity and very frequent blade changes.

The original team had two additional members, Vivian Hwang who was transferred to another location and Gary Trotter who accepted VTI.

The team decided the **PURPOSE** for their existence was to improve the quality of shearcut film **IN A WAY THAT** permitted operations to increase machine capacity without hair defects **SO THAT** customer complaints would be eliminated, and capacity could increase with costs reduced.

The team started analyzing the problem. The shearcut knife would cut smaller quantities of film but not the necessary thickness for optimum production. They found records showing there had been seventy-nine blade changes the previous year. It seemed all evidence pointed to the blade design being the culprit.

"We were lucky," said Charles Sweat, "we had a problem which was solvable. The team started out by defining the problem and collecting samples. At first we didn't know if the hair defect was base, emulsion or a combination of both. There had been some previous work on the problem before we organized as a team. However, the information from the previous investigations was confusing: one study said it was base only and another study said it was emulsion only. Actually it was both.

QIT #2 was presented an accomplishment award May 5, 1988. Team members pictured (L-R) are: Glenn Hyder, Jasper Cornett, James Dahle, Steve Praytor and Charles Sweat.

"We took all the blades, studied each one, checked the geometry and metal composition, analyzed how each was sharpened and how each performed. We even looked at different ways of cutting film. The method in use is to bring the knife's edge into full length contact with the film and pressure-mash it through a stack of film. Knowing something about knives, it seemed to the team, a knife with sliding action would work better. On that count we were wrong. Our thinking, we found out, was outdated. Newer technology proves the mashing type knife to be the required design."

"I know this is going to sound odd," Sweat continued, "but we found having a slightly dull edge on the knife was one key in eliminating the defect. Stumbling onto this was a unique experience: Sometimes a knife would perform well and sometimes it didn't do so good. Sometimes a new knife would produce the defect and an old one would not. Sometimes a recently sharpened knife would produce the defect and sometimes it would not. We really had to be close observers."

James Dahle added, "In addition to blade geometry there were several other changes, made by our team, which led to improvement in the process. Among those were the selection of a fine grain carbide tip blade and reduction of speed which improved the cutting life. It was not easy determining the best way to go. When you think about it, the possibilities were endless. The very first thing we did was to determine the Cost of Quality. How much was this defect costing us? Once this was established we then had a basis, some idea of where to start."

In the final analysis, with the changes made by QIT #2 in place, the defect is gone and the blade life has been greatly extended.

Editor's note: Having met their GOAL/PURPOSE, QIT #2 disbanded.

Mammography Film Introduction Team Receives Accomplishment Award

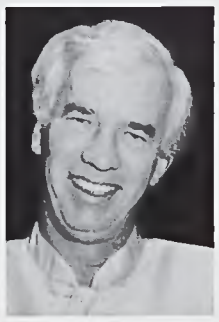
Editor's note: The new product entered controlled sales in June, 1987 and has already made significant contributions to company earnings. 1987 sales were 12% of the domestic market. The 1988 goal is 28% of the domestic market.

SITUATION PRIOR TO THE ACCOMPLISHMENT:

In 1982, the American Cancer Society published the results of its National Task Force on Breast Cancer Control, which emphasized the potential life-saving value of mammography. The Society subsequently revised their recommendations on the frequency women should receive mammograms, resulting in a significant increase in the mammography film market size. DuPont films were not competitive in this growing market, and the sales volume of Lo-dose film was eroding at the rate of 15% per year. Worldwide 1983 sales were only 7% of the market share.

THE ACCOMPLISHMENT: The accomplishment is successful development and scale-up of the new DuPont Mammography Film. **Lee Kitts**, Brevard-R&D Research associate, had been scouting new technology to achieve optimum performance for this application. When Lee was assigned to this project, half-time, he drove the technology to a successful demonstration that actually exceeded goal performance. This technology however, is only profitable when it can be used to provide a product that meets the customer's need. The entire team has fueled this new product introduction with the individual efforts required to rapidly scale-up and commercialize DuPont Mammography Film. The individual areas of contribution are:

Lee Kitts, in addition to his formulation and team leader responsibilities, took the initiative to develop a fundamental understanding of mammography and the customer needs. This involved numerous field visits, conference attendances, and direct interaction with nationally recognized experts and opinion makers. This extra effort contributed to not only a successful product design, but also a successful and rapid new product introduction.



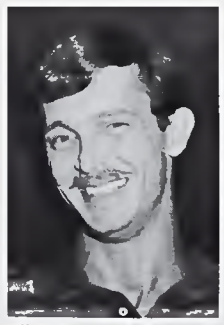
Jim White, Brevard-Process Engineer, guided the production area in defining the coating and drying conditions required to demonstrate manufacturability. This involved a considerable amount of extra time and off-hours participation in the early productions for controlled sale. The result of this effort is seen in the high combined yields and low cost of manufacture.

Charlie Sweat, Brevard-Process Engineer, took the initiative to go beyond his assignment and seek out methods to overcome the occurrence of whitetails in the backing. His extra efforts have helped to assure product flow to the customer.

Gene Sanders, Brevard-Product Analyst, established the emulsion sensitization and sensitometric test procedures that are used in each production. During the scale-up program, this required a considerable amount of extra time during weekends and off-hours. This resulted in a consistent sensitometric uniformity in the early stages of scale-up.

Ed Smith, Brevard-Process Engineer, designed and implemented the slitting, chopping and finishing inspection procedures that assure good yields and consistent finished product quality. This required an extra effort that resulted in an improved inspection system, supporting routine manufacture. Most of this work was done during evenings and weekends.

Jim Woodroffe, Brevard-R&D Research Physicist, designed a sensitometric and image quality test method that is based on customer use conditions. This required selection and installation of a mammographic exposure unit, followed by fabrication of special test equipment and methods. This method is now standard for testing of experimental and competitive mammographic film/screen systems.



Gary Owenby, Brevard-R&D Technician, carried out the image quality testing that assured final product quality. Over a three year period, this involved several hundred detailed, time-consuming procedures, which were all run carefully and completely. The result was high quality data that kept product performance aimed at the customer's need.

Other members of the team also receiving awards were: **Jim Foyles**, Product Manager, Medical Products Dept., Marketing Division, Wilmington, Del.; **Russ Holland**, Technical Associate, Medical Products Dept., Marketing Divison, Wilmington, Del.; **Dottie Andrews**, Sr. Technical Service Representative, Medical Products Dept., Marketing Division, Wilmington, Del.; **Gordon Nitsch**, Sr. Technical Associate, Imaging Systems Dept., Manufacturing Division, Rochester, N.Y.