ICQCC 2011-Yokohama

1. Reduction of lens defects due to scratching

2. ONE PIECE
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8. Abstract (approx. 400-500 words)

Olympus's Ina Plant has been manufacturing microscopes for 67 years using an integrated production system that extends from part processing to assembly. The technologies and skills cultivated at the plant have been passed down and carried on in the production of endoscopes and digital cameras.

Our group of technicians is responsible for machining lens parts, the lifeblood of any microscope.

Since microscopes are used to observe specimens at high rates of magnification of up to 1,500 times, the lens parts they use cannot have any blemishes, even tiny scratches that are invisible to the naked eye. Lens processing requires an extremely high level of skill and caution. Additionally, the glass material used is soft and can be scratched by contact with paper, making processing difficult for even highly skilled technicians and leading to a culture with a deeply rooted belief that some degree of process defects is unavoidable.

Determined to change this culture but still lacking in experience, I found myself leading highly skilled technicians during my fourth year with the company. I launched this effort by putting forth three essential principles based on my strong resolution to completely eliminate defects by refusing to accept even one.

However, this required us to strive to achieve a goal that nobody had previously achieved, and the difficulty of reaching the goal of zero defects prevented us from eliminating the fixed idea of accepting some small number of defects as a mood of resignation overtook the circle many times. We were unable to eliminate defects no matter what we did, and at one point I myself thought about halting the activity due to setbacks and disappointments.

At those times, members of the circle were moved to action by my initial promise to completely eliminate defects, and at one point I was encouraged by the members, strengthening our connection and allowing us to pursue an unified program of activities.

By bringing together my approach as the leader and the extensive expertise and experience of our skilled members, we engaged in a series of thorough observations of real parts, data analysis, and verification experiments, eventually achieving our goal of eliminating scratch defects.

Through this activity, we learned that you can always achieve your goal, no matter how difficult the issues at hand, if you pursue it with persistence and tenacity. Our initiative brought out a great degree of empathy and interest at all of Olympus's plants, and it breathed new vitality into the plants by inspiring new quality control activities.

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①レンズ　キズ不良の削減

②ＯＮＥ（ワン）　ＰＩＥＣＥ（ピース）　サークル
③森井（もりい）　真理子（まりこ）　　伊藤（いとう）　健二（けんじ）
④伊那製造部レンズグループＬ－１チーム　　⑤一般
⑥オリンパス株式会社　伊那工場
⑦日本

⑧発表要旨

オリンパス伊那工場は、顕微鏡の生産を開始して６７年の歴史ある工場で、部品加工から組立てまでを一貫生産しており、伊那工場で培った技術・技能が内視鏡やデジタルカメラの生産に受け継がれています。

私達は、顕微鏡の命とも言えるレンズ部品の加工を担当している技能者集団です。

顕微鏡は1500倍もの高倍率で拡大観察するため､使用されるレンズ部品は肉眼では見えない微細なキズも許されず、レンズ加工には非常に高い技能と細心の注意が必要です。また、使用するガラス材料は軟らかく紙が触れるだけでもキズが発生し、高技能者でも加工が難しく「工程内の少しの不良はやむを得ない」という風土が根付いていました。

この風土を変えようと入社４年目で経験の浅い私が熟練技能者であるメンバーを率いて「１個の不良にもこだわり、絶対不良をゼロにする！」という強い意志のもと、守るべき「徹底三原則」を掲げて活動を開始しました。

しかし、これまでに誰も成し得なかった目標への挑戦であり、不良ゼロを達成することは難しく当初は「１個くらい」という固定観念を打破できず、幾度と無く諦めムードがサークルに漂いました。何をしても不良を無くすことができず、私自身が挫折と落胆で活動が停止しそうになったこともありました。

その様な時は、最初に誓った“絶対不良をゼロにする！”という私の思いをメンバーが受けとめ奮起し、またある時には私自身がメンバーに励まされ、サークルの絆を強め一体感ある活動を進めてきました。

リーダーである私の思いと熟練者の豊富な知識と経験を融合し、徹底的な現物観察、データ分析、検証実験を粘り強く繰り返し、ついに「キズ不良ゼロ」を実現しました。

この活動を通じ、どんな難題でも諦めず粘り強く取り組めば、必ず目標達成できることを学びました。その取り組みは、オリンパスの全工場で多くの共感を呼び、工場に新風を吹き込み、新たなＱＣ活動が歩み始めました。