

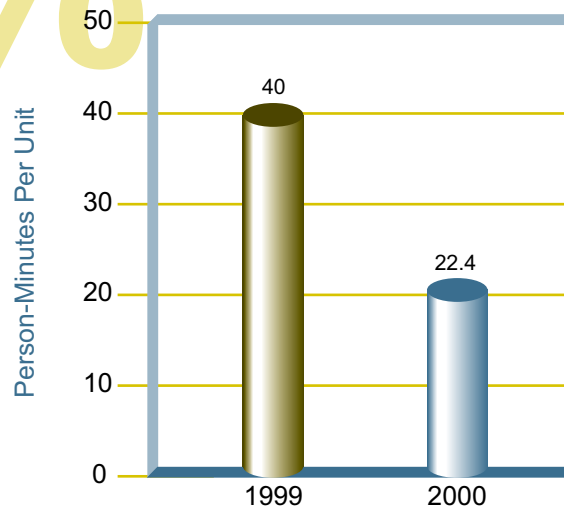
# Lucent

## Lucent Technologies Achieves Breakthrough Production Savings with Humantech

Lucent Technologies designs and delivers networks for the world's largest communications service providers. With headquarters in Murray Hill, New Jersey, and 47,000 employees worldwide, Lucent is a leading global supplier of communications networking equipment, holding strong leadership positions in Internet infrastructure for service providers, optical networking, wireless networks, and communications networking support and services.

# 44%

## 44% Reduction in Product Build Time



Humantech designed, built, and installed an amplifier assembly line for Lucent's Columbus, Ohio, facility. Improved ergonomics increased first-time yield by 61% and reduced product build time 44%, resulting in an annual savings of \$1.2 million.

# Lucent

## The Challenge

Lucent Technologies' Columbus Works facility designs and manufactures wireless networking systems and software. In late 1999, responding to an increased volume of cellular phone sales, the company planned to ramp up production of an amplifier used at its mobile telephone base stations. Recognizing the importance of ergonomic design in terms of both productivity and employee health and safety, the engineers and health and safety staff took this opportunity to make significant ergonomic improvements to the assembly process.

The ULAM (ultralinear amplifier) weighed 35 pounds and had an original bench-top assembly process of 40 minutes per unit. The process flow consisted of five different sub-assembly stations and a transfer cart. With increasing volumes, there were concerns about production yields as well as ergonomic challenges due to manual material handling. Process engineers recognized the need to promptly redesign the operation.

## The Solution

After identifying the line's challenges, engineers and health and safety staff enlisted the help of Humantech to define project goals and manage the implementation process.

Humantech's ergonomics consultants and Lucent's team developed several concept drawings and applied ergonomic design guidelines to 'design out' heavy lifting, manual

manipulation, etc. They searched for existing vendor solutions and ordered customized modifications. The final design included articulating arms for line loading and a custom conveyor that integrated the workstation components.

After the initial receipt and review of the equipment, it was clear that more modifications were necessary. Additional vertical supports were added to workstations and air-lift ball transfers and rollers were added to work surfaces to minimize transfer forces. Performance testing was then done at a fabrication shop. After several production runs, operators, engineers, and health and safety specialists were able to identify additional improvements.

When all modifications were made, the workstation components were shipped fully assembled and installed in place. Some of the final modifications included workstation-mounted lighting and easily adjustable footrests. The company began using the line in June of 2000.

## The Results

The results of the new assembly line are indeed impressive—a 44% reduction in product build time (from 40 minutes per unit to 22.4 minutes per unit) as well as a 61% improvement in first test yields. It is estimated that the new line will save the company approximately \$1.2 million dollars per year. Equally as important, operators are very enthusiastic about the improvements.

### About Humantech

For 30 years, global companies have relied on Humantech for workplace improvements. By combining the science of ergonomics and our unique 30-Inch View®—where people, work, and environment intersect—we deliver practical solutions that impact safety, quality, and productivity. At Humantech, we believe people make productivity happen. The 30-Inch View is a registered service mark of Humantech, Inc., 2008.