

2



# Straight as a Laser

**A controlled line of red light is the newest technique for accurate leveling and alignment**

What makes laser light different from ordinary light produced by the sun or an electric light bulb is the fact that laser light remains at a single frequency.

So, it doesn't go off in all directions simultaneously. It goes straight in only one direction. Thus the sides of a laser beam stay virtually parallel over long distances and it is this unique feature that is permitting the laser to replace the water level and the plumb bob, centuries old methods of leveling and alignment in the construction industry.

Today, a modern wall and ceiling contractor can utilize a thin line of harmless red light approximately 3/8-inch in diameter, rotating a

full 360 degrees, to produce what appears to be a plane of laser light.

This plane of light gives reference in both the vertical and horizontal modes for alignment and leveling applications.

The word "LASER" stands for Light Amplification through Stimulated Emission of Radiation. Lasers have been around for awhile, but it was not until five years ago that Laser Alignment, Inc., of Grand Rapids, Michigan, originated and developed a technique of using the laser beam to install acoustical grid ceiling.

Since then many other applications for laser technology have been developed. Listed below are a few of the more immediate

applications for wall and ceiling contractors.

## Ceiling Applications

The Laser Beacon can usually be set up in less than 10 minutes for a ceiling application as the laser light is positioned 2 inches below the proposed ceiling by mounting the unit on a column or tripod and then leveling it, either manually or automatically.

After a slow scan of the entire ceiling area, provided by an adjustable speed control, to discover any obstructions before the job begins, mechanics can then install the molding or trim around the perimeter of an area, using one central control device.

A magnetic-type target using a two-inch offset is used to view the rotating laser [see photo No. 1], and then the ceiling grid is raised or lowered to the proper height. Splayed hangers supporting 1-1/2 inch channel are adjusted using this same method.

Horizontal level control whenever required on an interior system project is also available [see photo No. 2].

Depending upon the size of the project, many contractors allegedly are achieving productivity gains of between 30 percent and 50 percent compared to conventional methods.

## Raised Access Floors

Laser control has been further developed to include the leveling of raised access floors. The unit is set up in an inverted position [see photo No. 3] on a column to project a plane of reference light, eliminating the need for a transit as well as continuous readings onto a grade rod.

Aluminum pedestals or posts are raised to a precise height through the use of small stand mounted targets and the Laser Beacon [see photo No. 4]. Problems associated with reading a survey rod when working close to the level are thus eliminated.

## Vertical Control

The most recently developed application is with the spinning plane of laser light projecting vertically on walls, floors, and ceilings.

This new innovation is particularly helpful for demountable partitions, horizontal soffets, and partition track which can now be aligned and fastened using a two-inch offset target and a Laser Beacon.

Generally, the key point in this application for production work is that you must be able to shoot a 90-degree layout from a previously established base or control line without taking time to have to “set up” the “90” each time. For example, if you have a corridor 100 feet long that has cross walls running at 90 degrees, you need only to establish the corridor line and thus achieve significant field cost savings.

With a base mounting system, the laser can be used to “shoot” the corridor with typical layout procedures (target at one end, laser at the other). A track is installed with a target on the end of the track—and chalk lines are a thing of the past.

The Beacon, with the proper base squared against the track line, is then moved along the track line to the pre-marked cross wall

points. The cross wall track is also installed with targets only.

Additional 90-degree runs that are typical can be installed from the cross walls in the same manner [see photo No. 5].

## **Other Advantages**

Besides the obvious advantage of production cost efficiencies the laser eliminates the use of “chalk lines” and consequently the need to remove chalk from acoustical ceilings and carpet in those instances where layouts “run through” areas.

On many curtain wall jobs where using a plumb bob is difficult because of winds and heights and even the use of long levels is somewhat impractical, the Beacon with the dry mount line is perfect.

Laser Alignment’s Beacon gets its power from a 12-volt battery or from a standard 110-115-volt outlet, drawing 3 amps of power per hour.

The battery pack is obviously handy for use in congested areas where a connecting cord would create problems.