

ALUMINIUM INSTRUMENT TESTIMONIALS.

SAN JOSE, CAL, April 14th, 1895.

A. LIETZ Co.

Gentlemen—We have used one of your aluminium mountain transits for nearly a year, for all kinds of engineering work, in places exposed to great heat and strong winds, and find that it gives us better results and more satisfaction than heavy transits of brass.

We find that its small weight allows an easier and quicker handling in rough, mountainous places, and also keeps the instrument in better adjustment and more free from accidents. In fact, we don't see how we got along so far without it, and why engineers and surveyors, who have a great deal of mountain work to do and carry their own instrument, insist upon breaking their backs with a 25-pound instrument, when they can get one which weighs 7 pounds, and does the work fully as well.

Respectfully yours,
HERRMANN BROTHERS,
Surveyors and Civil Engineers.

THE MINERAL FARM CONSOLIDATED MINING Co.,

Aspen, Colorado, April 30, 1895.

A. LIETZ Co.

Dear Sirs—I have been using for several months a transit of your make, having inclined standards.

The standards and telescope are of your aluminium alloy, and give perfect satisfaction, as does the entire instrument, which is of special make throughout. This makes two transits of your manufacture that I have used.

Yours truly,
C. S. BATTERMAN,
Manager.

SAN FRANCISCO, May 7th, 1895.

A. LIETZ Co.

Dear Sirs—Your small aluminium transit, No. 342, proves to be for my purposes the most convenient and satisfactory instrument I have yet had in use.

It is well constructed and large enough for all ordinary underground and surface surveys, and being very light is particularly handy for rapid work.

Yours truly,
ROSS E. BROWNE,
Mining and Hydraulic Engineer.

UNIVERSITY OF CALIFORNIA,
DEPARTMENT OF CIVIL ENGINEERING AND ASTRONOMY.

BERKELEY, May 10th, 1895.

A. LIETZ Co., San Francisco.

Gentlemen—The plane-table alidade made by you for the University several years ago has always given satisfaction.

We have instruments made by several of the first-class makers in this country, and your alidade compares very favorably with these.

Very respectfully,
H. I. RANDALL,
Instructor in Civil Engineering,
University of California.

FERNDALE, CAL., May 15th, 1895.

A. LIETZ CO., 422 Sacramento St., San Francisco.

Dear Sirs—I desire to state that I am well pleased with your small aluminium transit, which I purchased from you about two years ago. It is small, light and accurate. Being light it is particularly adapted for mountain field work.

There is no question but that the aluminium transit is the one for the engineer, as it combines accuracy with lightness.

Yours respectfully,

J. A. SHAW,
Civil Engineer and State Licensed Surveyor.

BOARD OF STATE HARBOR COMMISSIONERS,
No. 10 California St.

SAN FRANCISCO, May 29th, 1895.

A. LIETZ CO.

Gentlemen—With regard to the aluminium Y-level, No. 304, made by your Company for the Board of State Harbor Commissioners, I take pleasure in informing you that it has given perfect satisfaction, and I will state that if it were not possible otherwise than by paying double the price of the old style brass instrument, I would willingly do so in order to get one of aluminium manufacture.

One only has to use such an instrument for a day to appreciate the difference.

As to the workmanship of the above level, I have never seen better in my experience as an engineer.

Yours respectfully,

HOWARD C. HOLMES,
Chief Engineer.

COUNTY SURVEYOR'S OFFICE, SANTA CRUZ COUNTY.

SANTA CRUZ, CAL., June 1, 1895.

A. LIETZ CO., San Francisco.

Gentlemen—I take great pleasure in informing you that I have used the aluminium transit, No. 320, made for me by your firm about a year ago, on all kinds of city and county work, and find it in every way the equal of any old style (bronze) instrument I have ever used.

It holds its adjustments very well, and is as steady in the wind as any of the heavier instruments, while the saving of labor in carrying it is a gain that cannot be over-estimated. I think that when it has been once thoroughly tested by any engineer, he will abandon his old instrument in its favor in every instance.

The graduations and workmanship are in all respects excellent.

Yours truly,

CHAS. L. PIODA,
City Engineer.

SAN FRANCISCO, Sept. 6th, 1894.

I have had occasion to use a small aluminium transit, weighing $4\frac{1}{2}$ pounds, continuously for about six months, and during that time I made it a point to use it in very severe and stormy weather.

I recall a very strong breeze near a California mountain town, when the local engineer of the work, upon which I was then engaged, and I were operating together, he with a large transit weighing $17\frac{1}{2}$ pounds, without the tripod. Although my instrument trembled, its motion was not a violent one, and I could still read a stadia rod at 400 feet distant, when it was utterly impossible for him to manage his heavy instrument at all. The amplitude of its vibrations was longer, and its larger superficial area gave the wind more surface to act upon. Whenever there was a lull in the wind, my transit would stop trembling at once, while the heavy instrument would continue shaking until the next gust would strike it again.

It was proven to our satisfaction that the small aluminium transit was by far steadier than the large instrument, although the latter exceeded it 13 pounds in weight; it was not as top-heavy and the wind had less effect upon it.

The local engineer referred to, who had had quite an objection to a $4\frac{1}{2}$ -pound transit, became fully converted to aluminium instruments after our first mutual experience in the wind, and is today as firm a believer in this metal as I am myself.

OTTO VON GELDERN.

MOUNTAIN HOME, ELMORE CO., IDAHO, May 5, 1894.

THE A. LIETZ COMPANY, 422 Sacramento Street,

San Francisco, Cal.

Gentlemen : The instruments ordered (Aluminium Transit and Level) came to hand in due course of time all O. K., and I have neglected writing you on account of press of business and wanting to have an opportunity to test the transit in different ways.

What can I say in praise of the same? Words are useless. Money could not buy them if I could not replace the same. I think that will give you an idea of my appreciation of your instruments.

The objection was raised by several engineers that the transit would shake in heavy wind. I know better, and experience is the best of knowledge. Example : Having a placer claim to survey, situated upon a low flat island in Snake River, I crossed the island when the waves were rolling about three feet high, and each roller helped to make it uncomfortable by washing into the boat ; commenced at lower end of island, stake No. 1, and ran around the island sixteen courses and angle corners, and closed within three ft. on Stake No. 1, by calculation Lat. & Dept. Area 93 Acres. Now any instrument that will do such work as that in a windy day on Snake River (and it just know show to blow there), I think is beyond criticism.

Having many levels to run I have used the telescope for running the same on one of our canal lines. Preliminary survey. Ran south on Twp. line, and at 700 ft. set stake on lower side of ravine. Returned to starting point and ran south-easterly, crossed ravine in narrow place for flume, and ran down south bank of ravine to stake at 700 ft. and closed ; looked at other paper on which I had taken levels on Twp. line and found that readings were the same for that point. Elevation 9.40 ft. Such an instrument will answer for me ; those who want a better one can hunt for it.

The level is a *Daisy* and meets all requirements.

An Engineer or Surveyor can carry it all day and not feel like leaving it where he stops at night. I would recommend the same to any one of my profession, and advise them to go and do as I did : buy the same from A. Lietz Company.

Yours Respectfully

SAMUEL G. RHODES,

U. S. Dep't. Surveyor for Idaho.