

# LIVE LOAD

Quarterly Newsletter from  
Valley Forge & Bolt Mfg. Co.



## NEW IN-HOUSE HEAT TREATMENT LINE

Growth is something that we all strive for. Here at Valley Forge, business continues to grow and with growth comes many challenges. In 2014, growth prompted many capital equipment purchases including an in-house heat treatment line. Having our own in-house heat treatment capabilities is something that we have been wanting for over 30 years. With the expansion into our new Jefferson Street facility, we had the ability to put a dream to reality. This new department allows us to be in control of our own destiny when servicing our customer's ever growing needs.

The new lineup is up and running and has the capability of heat treating 1200 pounds per load. The gas fired Pacific Scientific Integral Quench Furnace carries a maximum processing temperature of 1750°F. Carbon potential is controlled and monitored by a state-of-the-art series 9205 programmable atmosphere and temperature controller. The SSI software package is bolstered with a Yamataki temperature controller. All heat treating is processed using an endothermic gas protective atmosphere, for superior product cleanliness and protection from high heat oxidation. The in-line elevated temperature parts washer, with dunk and spray capabilities, provides excellent post cleaning, thus reducing excessive temper scale. This post quench washer removes oil contamination from the product prior to final tempering in one of two 1450°F Pacific Scientific Temper Ovens. All loads are transferred from station to station via charge car.

In the world of high end fasteners, quality and traceability are the cornerstones of customer satisfaction. With the Super Systems Incorporated

(SSI) software, precision and lot to lot consistency of mechanical properties are controlled under one roof. Few fastener manufacturers can make this claim. Electronic data collection including recipes, furnace/temper times and temperatures, carbon potentials, and quench temperature monitoring assure that every load has complete lot traceability.

In addition to the new lineup, we have also welcomed another new face to Valley Forge: Karl Vaughn has joined us as our new Heat Treat Supervisor/Metallurgist. Karl has an A.A.S Metallurgical Science Technology degree and is a Master Mechanic. He is happy to be out of the Detroit cold and to have joined Valley Forge to operate the exciting new heat treat line.

After much anticipation, the wait is finally over, Valley Forge heat treating is here. We look forward to the great things this new capability will bring to our customers and the company as a whole.

VIDEO AT: [vfbolts.com/the-latest-valley-forge.html](http://vfbolts.com/the-latest-valley-forge.html)



# Anecdotes

## from the President



by Ron Clarke

June 19, 2015

### Prologue

Decapitated little fasteners are never a pleasant recollection, so to my publisher, may you be buried under an avalanche of ISIS propaganda for persuading me to recall this traumatic event ----- moving on---- so did you know publisher, that just like books, anecdotes should have titles. However, unlike books, it is possible for a reluctant author like myself, to craft a title with such literary skill, that after writing said title, no more words would be needed for the rest of the anecdote. With this stationery saving plan in mind, I have struggled to title the event I am about to describe, in the hopes that a single line would be large enough to satisfy your picky professional standards----- but alas, literary success eludes me once more. So to my multitude of readers ---- I tried ----- what's that I hear ----- long winded----- It's the publisher's fault.

Guess this title!

I'm not going to reveal them yet, but even though I failed to use them I did come up with a couple of titles of my own. The one is from a poem by Kipling, and though the line is taken out of context and certainly not applicable in this century, it could well have qualified for the event in the year it happened. Of course the other title had to be words in a song. Both poem and song were well known in an age that may unfortunately disqualify many readers in our

jointing world, but alas, with historical precedent on my side, I am left with the sad decision to not glue, but screw, equal opportunity.

### Background Info

The place was Jamshedpur, India in the early sixties, where, even though living in Calcutta, I spent months of my life installing and servicing American, German and Swiss machinery at TATA's Daimler Benz auto forge facility. Welcome a participant into the story, a maintenance mechanic at the plant, a character named Charan Singh, whose "man bites dog" attitude was known and generally tolerated by fellow workers and supervisors alike, and of course known to me, an outside contractor who had achieved the impossible by successfully working with him over the years. Other than a passing hand wave, I had not been officially introduced to Gruber the unwitting 'other' participant

***"...his lead pencil broke while negotiating the left arm of the swastika.."***

of this narrative, whose first name was Peter. Gruber had recently arrived from Germany to work on a very large, ailing, double acting hammer. Peter had no English so could only communicate with hand signals and guttural utterings which no one understood.

It was thought that the cause of their mutual dislike probably started early on when Peter in a combined flash of inspiration--desperation, had attempted to communicate with Charan Singh by drawing pictures on a pad, but the point of his lead pencil broke while negotiating the left arm of the swastika, bringing a rude snigger from Charan--- sending said Peter into an awful Teutonic tizzy—worsened, when no one could find him

a pencil sharpener. Perhaps this portended—is this a word Publisher?—events to come, and not long after, it was Peter who decided to stop me with a Tarzan like introduction wearing a huge cheeseburger smile, by sticking his ham of a hand on his considerable chest and saying 'Me Peter'.

Seems like Peter had a suspicion that since I worked on German machines I was a kindred spirit and the answer to his communication problem, with his upcoming hammer rebuild. Had I known what lay ahead I may have caught the first plane back to Calcutta, but looking back, I now realize I was witness to the birth of the expression "Getting Torqued".

### The Players Bio

Peter Gruber was a large, genial, beer drinking man with a red face and hams for hands. Peter was not just a mechanic—he was a "German mechanic" and despite communication difficulties, managed to constantly convey his undeniably superior qualification to Charan Singh and crew with unmistakable intent.

Charan Singh was tall, wiry, middle aged and turbaned, a very proud Sikh---- who was a self-taught mechanic, as many were in India in those days. Fully self-reliant and ready to take on any challenges, he had worked very well with me on large press installations over the years. Acknowledging what one doesn't know can make average people successful. A little knowledge is sometimes dangerous and Charan would never admit to a mistake because his pride would not let him. As a result he was often involved in sometimes near violent altercations with colleagues and higher muckimucs.

And then there was I, the innocent peacemaker in this impending incident. I got on with most everybody because early in my life I realized that no matter how smart you think you are there is always someone around the corner who is smarter, and who you could learn from. But even I, with my self-admitted diplomatic skills, failed to heed the

warning signs.

### The Incident or "Death of a Diaphragm"

It was Charan Singh who drug me away from my afternoon tea at the maintenance manager's office, to be present while he and Peter assembled the critical hammer diaphragm. The circular diaphragm was about five feet in diameter and was bolted down with a series of what looked like 5/16" hex head screws. The assembly sat on a workhorse and had been prepped by Gruber with German precision, with all screws snugged down, sequence marked and ready for the final tightening.

The plan was for Peter and Charan Singh, both experienced wrench turners, to sit on opposite sides while torquing the screws simultaneously in a sequence recommended by the manufacturer. Things went sour from the start when Charan Singh accused Peter of sitting on the wrong side of this symmetrical assembly. When the smoke cleared and order restored, it turned out that the side had nothing to do with it but that Peter was sitting on Charan Singh's favorite stool. I was beginning to think that there must be some truth in the rumor that Charan Singh went nuts after twelve o'clock. So sides were switched and order restored by my diplomatic self, or so thought I.

I would inform some of you--- dare I breach PC again--- younger readers, that in the days before "click" torque wrenches, accurate preload on small screws was totally dependent on the mechanics skill. So the job ahead for the two proud mechanics, one from the east and the other from the west, demanded considerable skills. So there they sat on their stools like two pugilists waiting for the bell. Would have been a great iPhone moment.

Peter made the first turn on position marked # 1 with Charan simultaneously covering and torquing his #1 on cue... The sequencer, seated on his own stool, lifted placard #2, so both mechanics covered #2 and torqued on cue. #3 was completed smoothly and I thought maybe this is working.

#4 went fine and I called a pause after #6 to reorganize the placards. We restarted at #7 and after cue was called at #8 Charan Singh's ring spanner came away with a head still in it and all hell broke loose. The German mechanic uttered a shrill scream of anguish and anger, the sequencer fell off his stool and I could have sworn that the wounded diaphragm resonated in tune with Peter Gruber's vocal misery.

What happens next would have caused an international incident if anybody could have found us on the map. Gruber, yes the same Peter Gruber, covers #9 and with a casual snap of his wrist and to the surprise of all, willfully torques the head off. Rightly sensing a slight and not to be outdone, Charan Singh quickly responds by torquing off the heads of both his #9 and #10 in quick succession. All this happens at warp speed so that when the dazed sequencer props himself up with the help of placard #10, Gruber obliges by decapitating said screw with a flourish. After all befell ist befell, ya!

Like watching a tennis match all eyes turn to Charan Singh in anticipation who promptly removes the heads of his #11, #12 and #13 and stares at Gruber with a challenging glare that almost says I can do anything better than you... It is at that precise moment and in pin drop silence, when Gruber's wrench is poised and ready to retaliate, that the

calm, cautioning, changing voice of the maintenance manager is heard saying, "Be careful you buggers, don't shear off any heads, we don't have any more special screws ----- daaaamn." And sanity returns as all faces turn to my good friend Eric whose last name I shall withhold because he has either passed on or is still in hiding.

Epilogue

Had there been an international incident resulting from Gruber's behavior it may have brought forth press like this:

India government lodges complaint with FRG embassy in New Delhi over events involving destruction of property by FRG passport holder and fugitive Peter Gruber last seen fleeing the scene with bearded Sikh in hot pursuit.

India PM in heated talks with German chancellor who finds Gruber's behavior unacceptable---- now I know where Obama found that word. Chancellor makes light and challenges PM to a beer drinking contest. PM declines indignantly---- he only drinks Mango juice but since he is the offended party he has choice of weapons and chooses instead a hot chili eating duel. The chancellor accepts, while citing precedent, volunteers his vice, who is Mexican, to be his champion. PM is snared in his own trap when his

own vice unexpectedly pleads a sudden case of hemorrhoids.

Indo-German relations restored.

Not so well known diplomat also known as Mr. Bolt restores Indo-German relations by eating the Indian chilies and drinking all the German beer.

Mercifully--- The End.

- Mr. Bolt



Technical Article:  
ASTM International & Valley Forge

by Glenn Snowberger

ASTM International is an organization that develops and publishes consensus technical standards for 12,000 plus materials, products, systems and services. Within the many technical committees there is a specific section devoted to fasteners called the F16 Committee on Fasteners. Valley Forge has been a contributing and voting member of ASTM since 2000.

When you see a fastener with a grade identification marking, such as "BC" or "BD", have you ever thought about what it refers to? These markings signify that the fastener has been manufactured and complies with a specific technical standard, in this case ASTM A354.

In 2002, Valley Forge recognized the importance of having a consensus standard detailing the requirements for Load Indicating Fasteners (LIFs), both the MAXBOLT™ and SPC4™. We then approached the ASTM subcommittee, F16-02, for steel bolts, nuts, rivets and washers, with a proposal to develop this standard. After discussion within the committee it was determined that a Work Task Group would be formed to develop the standard. After two (2) years and several ballots, a standard was presented to F16 for acceptance which resulted in the publication of

ASTM F2482, Standard Specification for Load-Indicating Externally Threaded Fasteners.

With the publication of the standard, several companies have approached F16-02, proposing that their product be included in the specification. In the case of RotoBolt®, following discussion and comments over several committee meetings, it was determined that a Work Task Group be formed to develop a new standard. The rationale for this was that the product was an attribute (Go/No Go) type of system not offering a true measurement of bolt tension. This product informs the user, through a "finger test" method, that design tension has been reached. Subsequently, a Work Task Group was formed and work began on the standard, however, after a period of time the work was abandoned. RotoBolt® withdrew from the effort, resulting in the Work Task Group being disbanded and the Work Item Number being closed.

In 2013 the F16-02 subcommittee was approached by Stress Indicators, Inc. to ask for the opportunity to have their SmartBolt® fasteners included in ASTM F2482 standard. A presentation followed that detailed the product and how it enables the user to determine that the proper bolt tension has been

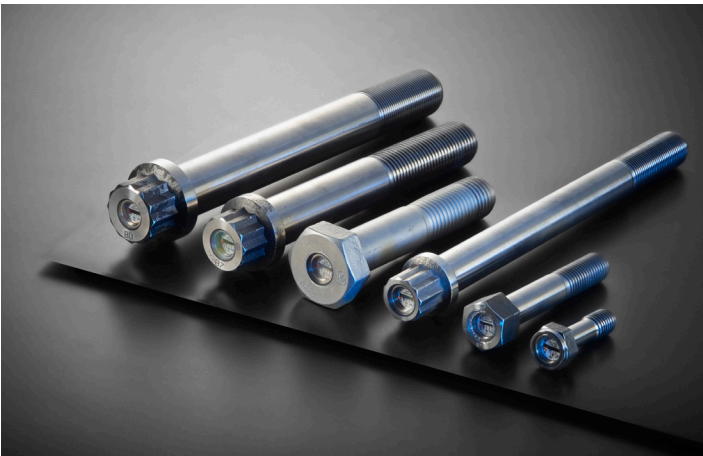
achieved. The discussions that followed centered on the question of, “Does the product measure bolt tension?” SmartBolt® was promoting the idea that the change in color is a measuring tool. There were many opinions that this product was also an attribute (Go/No Go) type of system, since the product provided a visual indication of tension being achieved. There was however a decision by the committee to assign a Work Item number and form a Work Task Group so as to move towards possible inclusion in F2482. This represented a major change in direction by F16-02, which we will explain later.

Work on the proposed changes or additions to the standard were completed and the proposal was submitted for a ballot which closed on January 20, 2014. At the May 2014 F16-02 meeting, the ballot results were presented with the negative votes being found to be persuasive. This then required that the ballot be revised or amended and then re-balloted. At the November 2014 subcommittee meeting, Stress Indicators, Inc. expressed their continuing interest in pursuing inclusion of their product in the standard. At the May 2015 meeting it was announced that the SmartBolt® work item had been withdrawn and was no longer on a ballot.

Now as Paul Harvey said here is “the rest of the story”. You have to wonder why F16-02 would move ahead to consider inclusion of an attribute type product into a standard that clearly specifies measuring capabilities? ASTM F16 has looked at and determined that due to the large number of standards that are in publication, many of which are similar, they would attempt to combine standards wherever possible when they are subject to review. This is similar to the earlier movement to have inch and metric products covered in one (1) standard. This direction will clearly be shown with the publication of ASTM F3125 Specification for High Strength Structural Bolts, Steel and Alloy Steel in 2016. This is the inclusion in one (1) specification of ASTM A325/A325M and ASTM A490/A490M.

Because of the directional change by ASTM toward reducing and combining standards it is possible that

in the future an attribute (Go/No Go) type of system for indicating fastener tension will be included in the ASTM F2482 specification. Valley Forge will continue to work to see that if this does come to be, the standard will have clear and precise distinctions showing the two (2) types of products. We will clearly advocate for the separation within the standard as to differentiate between the two (2) types of load reading fasteners.



# THE LATEST AT VALLEY FORGE

The second quarter here at VFB was very busy! Lots of tradeshow and lots of travel.  
Here are the highlights!

## 20th North Sea Offshore Cranes & Lifting Conference 2015 Stavanger, Norway

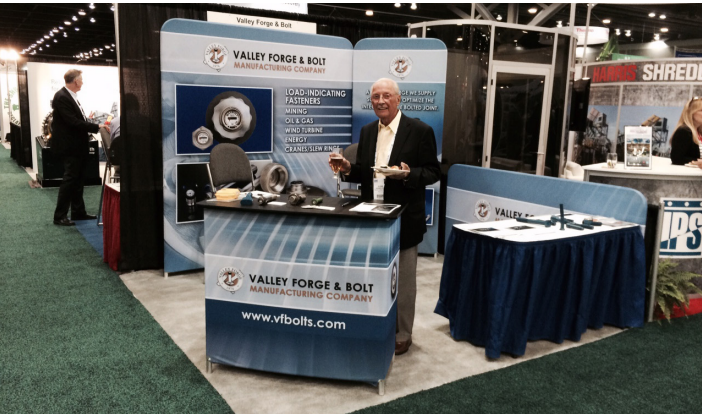
Following on from our first successful appearance in 2014, Bill Denby and Barry Thomas, attended and exhibited at the North Sea Offshore Crane and Lifting Conference in Stavanger, Norway during April. The event was attended by 228 delegates from 19 different countries.

It was a fantastic opportunity for us to meet existing and new clients from the Pedestal Crane community and talk about applications and solutions. We were actually sought out and approached by a number of new prospective clients, with interest in knowing more about our technology which has already resulted in meetings, during and after the event in a number of countries

At the event, Valley Forge launched the new wireless system receiving excellent feedback. We are excited to be attending the 21st ‘North Sea Offshore Crane and Lifting Conference’ in Aberdeen from April 2016, where we look forward to continuing our consolidation of position within the Offshore Pedestal Crane market.



## ISRI Convention 2015 Institute of Scrap Recycling Industries Vancouver, B.C., Canada



Glenn and Michele attended the Institute of Scrap Recycling (ISRI) show in Vancouver in April. Customers that visited our booth included Harris Waste, Wendt Corp., Riverside Engineering, US Shredder, AMSCO, Richmond Steel, Mid City Scrap and Compressed Steel to name a few. The scrap industry is currently slow due to the low cost of steel. When steel is more in demand, prices are higher and scrap becomes more valuable.

The beautiful city of Vancouver is like a clean version of Hong Kong, with many hi-rise apartments. Glenn is enjoying the fare - at ISRI they always supply great food and drinks for exhibitors and attendees alike - great seafood was enjoyed by all!



## THE LATEST continued.....

### Valley Forge & Bolt Proud Sponsor of KOEI Annual Forum 2015 Houston, Tx

VFB once again sponsored the KOEA annual meeting and dinner held in May at the Sheraton Brookhollow in Houston. This year's event featured speakers from Shell Oil, Hyundai, Samsung and Wood Group Kenny. With hundreds of offshore engineers the event offers an opportunity to learn about current and future oil and gas projects as well as the ability to talk and network with like-minded industry professionals. Anyone interested in joining can visit <http://www.koea.co/content/membership.html>.



### Elko Mining Expo Elko, NV

The 30th Anniversary of the Elko Mining Expo was held in beautiful Elko, Nevada the first week of June. While we saw a smaller attendance level than in past years, we were happy to attend and support the industry at our booth with ME Elecmetal.



### AISTech Conference Association for Iron and Steel Technology Cleveland, OH



May 2015 marked the 12th anniversary of AISTech 2015, the Association for Iron & Steel Technology's premier annual technology event. Representing 44 countries, 531 exhibitors, & 515 technical sessions, this year's event was attended by 7000 industry professionals and students. Valley Forge was hosted by Jeff Blankenship and [MRSI Maintenance & Reliability Solutions Inc.](#)

Demonstrating SPC4™ Load Indicating Technology and Ball Lock™ Washers using an A105/SA105 300 series weld neck flange, we showed the effects of "cross-talk" and how it affects joint tension on the adjacent and opposing fasteners in the 8 bolt assembly to a myriad of steel industry folks. From executives and engineers to superintendents, maintenance managers and millwrights all were impressed by the Valley Forge products.



## THE LATEST continued.....

### April 2015 Quarterly Meeting

Yet another quarterly meeting! This time featuring the hand crafted sandwiches of Capriotti's! We heard all about Bret's trip to China and the exciting new developments there. We also talked about new markets, new customers and had a quality department presentation, just to name a few.



### OTC 2015 Offshore Technology Conference Houston, Tx

VFB has exhibited at OTC since 1998 and watched the conference grow steadily to the premier show that it is today. With over 4000 vendors and nearly 100,000 attendees this year's show highlighted advanced technologies in subsea oil and gas. VFB designs and manufactures a variety of products specifically for subsea applications. Ask us about your requirement today.



Make sure to get the next issue!  
**OCTOBER 2015**