



TIC Celebrates 25th Anniversary

In this day of instant success—and equally quick failure—Tank Industry Consultants is particularly proud to celebrate its 25th Anniversary with clients and friends nationwide.

Many of you may know of our history and our founder, Crone Knoy. In October of 1979, Crone started a tank engineering company that has grown into what is today known as **Tank Industry Consultants**. He started with an employee roster with all the same last name — “Knoy”—and grew the company to its current roster of 35 engineers, support personnel, and field professionals. The company began in the Knoy dining room, a stone’s throw from the famed Indianapolis Motor Speedway. Headquarter’s personnel are now housed in a custom-built 6,000 square foot facility in Indianapolis. In addition, we have three branch offices — Chicago, IL; Houston, TX; and Richmond, VA.

We are proud of our heritage and continually strive to live up to the principals of our founder:

- ✓ Ethics in Engineering
- ✓ Exceed Customer Expectations
- ✓ Excellence in Reputation

At a recent strategic planning meeting, a group of TIC managers was asked to name something that they were truly passionate about. Without exception, they each proclaimed: “**Tanks**”

Twenty-five years equals a lot of tank designs, specifications, and evaluations. We estimate that over those 25 years, we have been involved in more than 6,000 tank projects. However, the number of tanks is not significant when compared to the tremendous *client loyalty* we’ve experienced. Without the many loyal clients who know TIC as their personal tank engineering experts, this 25th anniversary celebration might not have been.

Through the years, one of the most widely read features in *Tank Talk* has been the President’s (then Chairman’s) Corner authored by Crone Knoy. For this celebratory issue of *Tank Talk*, we delved into the archives of previous *Tank Talks* and selected the Chairman’s Corner that we received the most feedback on. In honor of our founder, his vision and dedication to TIC, we’d like to feature what we’ve come to call “*Corn Rows and Nails.*” We hope you enjoy it.

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Chairman's Corner (Reprinted from *Tank Talk* 28—1997/98)

by E. Crone Knoy, P.E., (deceased) CEO, Tank Industry Consultants

Now I have seen it all!!!! The other day I received some junk mail in my e-mail in basket. Guess what it was? It was an invitation to an **Upsizing Conference**. Several well-known companies were listed as participating in the conference. I printed it and put it aside thinking it was a joke. My daughter, an engineer at Eli Lilly, one of the participating company, saw it and said, "No, Dad, this is for real!" Now really! It seems only yesterday that I was writing an editorial poking fun at *re-engineering* and *downsizing*, and ridiculing the latest management fad buzz words.

As I read various publications, visit other organizations, and attend various board meetings, I am constantly amazed at the reorganizing, retraining, and other non-productive efforts being expended. No matter what the management fad or buzz word being implemented, the end results come back around to the basics of organization, accountability for one's actions and placing client services as the number one priority.

As I am involved in strategic planning of the organizations I belong to, I am reminded of two chores I had on the farm. Hammering nails and planting corn. When driving nails, you must always keep your eye on the nail head. If you don't, the nail will invariably start going crooked, then bend over and have to be pulled out and re-driven. The lesson here is, *You must concentrate on what you are doing at the moment, receive immediate feedback, and make corrections to complete the task at hand.*

My second chore, planting corn, required a different view on the task. As I drove the tractor, I found that my tendency was to just look over the nose of the tractor at the last row planted. When I did this, the rows of corn I was planting would not be straight and the distance between the rows would vary. This not only made an unsightly field, but made it almost impossible to cultivate and harvest the corn. I soon learned that my father's advice, to concentrate on a fixed point at the end of the field, was the only way to plant a crop of corn that would be spaced with room to grow and be culti-

vated and harvested.

I have tried to build Tank Industry Consultants with well-placed, accurately driven nails, focusing on the tasks at hand—creating and maintaining an effective and efficient organization to serve our clients. In between driving the nails, however, I have tried to keep my eye fixed on the end of the row, keeping on the path that would yield the long-term results required to provide meaningful work for our employees and a continuum of service to our clients.

Downsizing, upsizing, re-engineering—they all take energy that could be applied to doing the task at hand. At TIC we have tried to continually keep our eye on the nail **and** the end of the row. Doing so has hopefully kept our organization using its dynamic inertia. To slow down to reorganize means that kinetic energy of the moving organization must be absorbed in order to stop and change directions. In changing direction abruptly, static inertia must be overcome by applying additional energy to get back up to speed. Keeping the organization moving, but constantly correcting to reach the correct point at the end of the field, saves energy (reduces cost) and eliminates the fits and starts of trying on the latest fashions of today's business fads.

I have spoken before of my plans for the perpetuation of Tank Industry Consultants. A major step in an orderly transfer of ownership to the total TIC team was made last spring. This will continue over the next 5 to 10 years, as we keep one eye on the head of the nail... and another on the end of the field.

Thanks for listening. I pledge that the core values of TIC will be here forever.



Tank Tips

Excerpted from TIC's Top 10 Tank Tips

- **Keep it clean.** Vegetation and debris covering the bottom plate can shorten the useful life of a tank. Keep the foundation clean and properly graded to promote drainage away from the tank.
- **Don't be all wet.** Be alert for evidence of bottom leaks. The tank bottom is typically the most likely to leak first. If left untreated, even bottom leaks can lead to catastrophic failure.
- **Keep your eye on 'em.** Tanks should be evaluated every 3 to 5 years by a professional engineering firm, and annually by water department personnel.

**Visit us on the
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Industrial & Water Tank Talks!

For 25 years, *Tank Talk* has been an informational resource for storage tank owners, operators, and engineers. As the storage tank industry has grown, more and more complex issues, standards, and regulations have been implemented. To make sure that all our readers have up-to-date information that is of value to them, we are publishing newsletters for both the water and industrial segments of the industry.

If you have received the wrong edition of this newsletter or you would like to receive both, please contact us:

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Thanks for reading, and if you have any topics, questions, or concerns that you would like to have addressed in future editions of Tank Talk, please let us know.

Emerging Issues in Water Tank Ownership & Engineering

There's no question that we live in a fast-paced world. Constantly changing technology, economics, and regulations affect all aspects of our lives.

Following are brief discussions of several issues in the tank industry which we see as evolving, emerging—and even re-emerging. These changes and how they will affect tank ownership are important to tank owners, operators, and engineers.

TIC has identified four emerging issues of practical relevance to tank owners. These issues are:

- Extending the coating season
- Advancements in surface preparation
- Online project bidding
- AWWA standards updates

Extending the Coating Season

Painting Tank while in Service

Although not yet an optimal solution, painting tanks while in services has been done successfully in limited cases where coatings and application procedures were carefully planned and monitored. Moisture-cured urethanes and water-based acrylics are two types of coatings that have been utilized in these cases.

Utilization of Fast-Cure Coatings

Epoxies and urethane accelerators (amine and tin catalysts) have been utilized to narrow the recoat window to as little as 3 to 4 hours at 75°F. However, these types of coatings have higher VOC content, and the higher surface temperatures may cause blistering of the coating and diminished urethane gloss.

Utilization of 100% Solids Coatings

The 100% solids coatings include solvent-free aromatic polyurethanes and two-component polyimine epoxies. These coatings allow dry film build of 10 to 25 mils in single, multi-pass application. The 100% solids coatings do not contain VOCs, however, they require specialized application equipment and applicator training. These factors make it a more costly coating than some of the other options.

Metalizing

Metalizing has been used on the interiors of water tanks for a number of years, but recent interest in this coating solution has brought it into more of the mainstream of coatings options. During metalizing, pure zinc metal is sprayed onto the prepared surface. Service life for metalized coatings can be as much as two times greater than conventional coatings. The application of the metalized coating must be carefully monitored and the system is more costly than conventional coatings due to the limited number of applicators and materials suppliers available, and the higher degree of surface cleanliness required.

Advancements in Surface Preparation

Heavy Metal Abatement

Pre-treatment additives have been developed which neutralize the leachability of heavy metals in coating debris. These additives can be expendable abrasive additives, or single-component temporary overcoating. Recyclable abrasives are also being utilized to minimize the volume of waste generated, thus decreasing disposal/treatment costs.

Robotic Blasting Equipment

Equipment that a few years ago would have looked like something out of a Buck Rogers comic book is now being used on tank painting projects. Potable wheelblast equipment and ultra-high pressure water jetting are now being used to help achieve maximum steel cleanliness while controlling debris.

Online Project Bidding

One of the newest tools being evaluated is online project bidding. Thus far, it appears that online bids are typically 4% to 8% lower than conventional bids—and some have come in as much as 20% lower. This system requires careful pre-qualification of bidders. Even more importantly, online project bidding requires a technically accurate and comprehensive set of specifications on which to bid.

AWWA Standards Update

Several of the AWWA water tank standards are undergoing significant revision, including format revisions. All contractual language is being removed from standards as they are revised. In addition, a new “general standard” that will augment the individual standards is being developed. The general standard will contain information that is germane to all the standards, thereby allowing the individual standards to focus explicitly on their topic.

D100-96 Welded Steel Tanks

The D100 2005 revision will contain several new and updated requirements. The wind and seismic design criteria in this standard will follow ASCE 7-05, and cone buckling will be addressed using pressure stability. There will be guidance on communication antennas included as well. The standard will be split into flat-bottom and elevated tank standards in the following cycle.

D102-03 Coatings

The D102 revision task force is developing an internal coating submittal review criteria to help expedite and standardize the selection of new coatings. Changes in dehumidification criteria are also anticipated in the next revision.

D103-97 Bolted Carbon Steel Tanks

The next revision of this standard will also include changes in wind and seismic design criteria. Updates for bolt criteria and plate thicknesses are also being discussed.

D104 Impressed Current CP

This standard will undergo moderate revisions in 2004. There is also work being done on a new galvanic anode standard. Publication date is unknown at this time.

Other Standards Under Development

- New Stainless Steel Bolted Tank
- Aluminum Dome Standard
- Composite Elevated Tanks

The M42-Tank Manual will be replaced by Potable Water Storage Handbook in 2005. The Technical Editor of the Handbook is Steve Meier.

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Articles from previous issues of Tank Talk can be found on our web site

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Offices Nationwide

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