



OPERATIONS CHALLENGE 2021



Top-tier performances in the Safety and KSB Maintenance events led Controlled Chaos from the Water Environment Association of South Carolina to a second-consecutive overall Division I victory. This year's win marks the team's first-ever overall victory in a full-scale, in-person Operations Challenge competition. Kieffer Photography

WASTEWATER'S TOP TALENTS RECONNECT IN CHICAGO FOR 34TH COMPETITION

Justin Jacques with Steve Harrison

Every sport has its dynasties — those elite teams with the drive to distinguish themselves from their rivals and capture success year after year. These teams gradually establish legacies that endure far beyond any single competition.

The 34th Operations Challenge competition proved our sport no different, featuring rigorous top-tier performances from teams with familiar names and records spanning decades as well as new teams making their WEFTEC debut.

Thirty-two teams from all corners of the U.S. met in Chicago to compete in five classic Operations Challenge events: Process Control, Laboratory, Collection Systems, Safety, and KSB Maintenance. Returning in person to the national competition for the first time since 2019, they reacquainted themselves through rigorous competition. Seven veteran teams aimed to add to their legacies in Division I, 18 teams vied to establish themselves in Division II, and seven brand-new teams began forging fresh dynasties in Division III.

Brenna Durkin, who this year took on the role of Operations Challenge Committee Chair, described the results as particularly close. She noted that several events were decided by only a few points.

In the end, **Controlled Chaos** from the Water Environment Association of South Carolina, the **Technicians** from the Chesapeake Water Environment Association, and the **Smooth Operators** from the North Carolina Water Environment Association left Chicago with the top spots in Divisions I, II, and III, respectively.

“All of this year’s competitors demonstrated outstanding professionalism, teamwork, and a tireless drive to succeed,” Durkin said. “Congratulations to Controlled Chaos, the Technicians, and the Smooth Operators on a hard-fought win. We’re excited to see all of you again next year!”

THE AGE OF CHAOS

South Carolina teams emerge from the fray on top of Division I



Controlled Chaos originates from Mount Pleasant Waterworks in a suburb of Charleston, South Carolina. Controlled Chaos included coach Troy Newton, captain Patrick Ross, Kevin Ganley, Seth Duncan, and Tyler Waterhouse. Kieffer Photography

During last year’s virtual Operations Challenge competition, Controlled Chaos from the Mount Pleasant (South Carolina) Waterworks earned their first-ever overall Division I win. This year they defended that Division I title in person and sent a strong message to the Operations Challenge community: Controlled Chaos is the team to beat.

Coach Troy Newton, captain Patrick Ross, Kevin Ganley, Seth Duncan, and Tyler Waterhouse made up the team. Together, they placed first in their division in the Safety and KSB Maintenance events and within the top three in Process Control, Collection Systems, and Laboratory.

Achieving an exemplary 4.5-minute time in the Safety Event was particularly gratifying for the team, Ross said. Controlled Chaos spent much of their practice time focusing on ways to avoid the penalties that had dogged them in past outings.

“The Safety Event and Laboratory Event have always been troublesome for us,” Ross explained. “To come out of the Safety Event with a clean run and to survive a very shaky Laboratory run were great accomplishments for us.”

This year marked Newton’s debut as coach. Teammates emphasized that Newton’s vigilance was critical to their success — he excelled in recognizing subtle flaws in the team’s performance

and promptly correcting them.

“My boys will make you pull your hair out because I know what they are capable of,” Newton said. “I love these guys and I am so proud of them. I consider them a part of my family.”

“The reception we got during the awards ceremony was something we’ll never forget,” Ross said. “We didn’t expect all of the congratulations and compliments, let alone that loud of a roar from the crowd. To win side-by-side with our South Carolinian brothers from Greenwood Metro made it even better.”

Lethal Concentration from the Greenwood Metropolitan District, another Division I team representing the Water Environment Association of South Carolina, finished second overall.

“To us, and I’m sure to most people involved, Operations Challenge isn’t just something we do — it’s a privilege that we *get* to do,” Ross said. “It’s a way of life that has allowed us to become smarter and more efficient water professionals for our companies and the communities we serve.”

2019 champions **Elevated Ops** from the Rocky Mountain Water Environment Association finished in third place overall after placing first in the Process Control Event, finishing with an overall score just two-tenths of a point below that of Lethal Concentration. 🐬

TECHNICAL EXCELLENCE

Technicians outperform 17 teams to claim Division II victory

Division II was particularly crowded this year. With 18 teams striving for the overall win, taking home the trophy was not easy. But with first place wins in the Safety and KSB Maintenance events, the WSSC Water (Germantown, Maryland) **Technicians** finished on top. The team, representing the Chesapeake Water Environment Association, included coach Bradley Yeakle, captain Ronald Moler III, Frank Schmidt, Michael Marinelli, and Miquel Malcolm.

Like many teams, the Technicians reported difficulties in finding practice time this year. Only two members work at the same facility, with others spread throughout WSSC’s roughly 2,600-km² (1,000-mi²) service area. Work assignments, personal obligations, and travel restrictions frequently interrupted the team’s preparations, particularly during the early months of 2021.

“We had to take a break in the beginning, but we never stopped thinking about Operations Challenge,” Marinelli said. “When we were given the go-ahead to practice, that’s what we did, and we worked hard building the consistent routine we needed to be competitive.”

The team focused particularly on the Safety and KSB Maintenance events once practices began, Moler said. The Technicians experimented with various approaches to these events, including a “pretty significant change” to how the team ran the KSB Maintenance Event just one month before WEFTEC. They benefited from several strategic adjustments suggested by coach Yeakle, too.

But more than their methodology, Moler credits the team’s success to their cohesiveness as a team.

“I’m going to drop a big secret about these two runs on competition day: The strategy is to run fast and clean,” Moler said. “In all honesty, what has paid off for us so well is that our team has a great



chemistry. When I call these guys my brothers, I mean it. We work so well together, we trust each other, and we can even anticipate each other’s moves.”

“The last two years have been full of challenges, but we stayed focused, and everyone showed up ready to perform,” added Schmidt.

The second overall spot in Division II went to **RI-CONN United** from the New England Water Environment Association. RI-CONN United took the top spot in the Laboratory and Process Control events. **Brown Tide** from the New York Water Environment Association earned third place in the division. 🐬

Representing the Chesapeake Water Environment Association, the Technicians achieved an overall victory in Division II. Captain Ronald Moler III, alongside Frank Schmidt, Michael Marinelli, Miquel Malcolm, and coach Bradley Yeakle, placed first in the Safety and KSB Maintenance events. Kieffer Photography

A LITTLE ELBOW GREASE

Top showings in physical events propel Smooth Operators to Division III win



After placing within the top three on all five events in Division III, the North Carolina Water Environment Association Smooth Operators assumed the Division III top spot. Team members included coach Chris Hill, captain Bryon Orr, Julius Phillips, Kyle Meeks, and Charlie Buck. Kieffer Photography

As Operations Challenge coordinators announced the first-, second-, and third-place finishers in each Division III event, one team returned to the stage again and again: The Smooth Operators from Greenville (North Carolina) Utilities, representing the North Carolina Water Environment Association.

The Smooth Operators — coach Chris Hill, captain Bryon Orr, Julius Phillips, Kyle Meeks, Charlie Buck, and alternate Steve Hedgepeth — were named overall Division III champions after their inaugural appearance at the WEFTEC competition. They earned top three trophies in all five events, taking first in the Safety, Collection Systems, and KSB Maintenance events.

All members of the team are water resource recovery facility (WRRF) operators, which Hill credited for the team's natural aptitude in the competition's most physically demanding events.

"At any time, they could be pulling a pump, repairing a line, or rigging up to enter a tank," Hill said. "They apply those skills, knowledge, and abilities to the Operations Challenge events and practice, practice, practice."

It was more than brawn that earned the Smooth Operators their win ahead of the six other teams in their division. The team also demonstrated their

brains, finishing the Laboratory Event in just over 11 minutes; a time on par with several Division I teams. The Smooth Operators also took third place in Process Control, scoring 1,155 out of 2,000 possible points.

"The size of the convention area, the number of event stations, the number of teams, and the history of Operations Challenge was a little overwhelming on the first day," Hill said. "The Smooth Operators really pulled it together on the second day to rally and win all three of Tuesday's events in their division."

The Smooth Operators made their debut last year during the virtual Operations Challenge, where they earned second place in Division III after a top showing in the truncated Collection Systems Event. The 2021 challenge marked only the third time the team had competed together in-person, and their first time competing in the Safety and KSB Maintenance events at the WEFTEC level.

The Watertown Waterbears from the New York Water Environment Association placed second in Division III. They earned first in the Laboratory and Process Control events. The Florida Water Environment Association Bio-Wizards finished third overall after a second-place finish in the Collection Systems Event. 🐻

TRA CReWSers Mark the End of an Era



With seven overall Division I victories since their debut at WEFTEC 1996, the TRA CReWSers from the Trinity River Authority, in Arlington, Texas, have brought home the top title more often than any other team in Operations Challenge history. On the heels of one of the competition's most recognizable and celebrated dynasties, the 2021 competition marked the CReWSers' retirement, confirmed coach Steve Price. Members of the 2021 TRA CReWSers included captain Dale Burrow, Howard Williams, Mark Reeves, and Raudel Juarez.

Humble Beginnings

It all began in the early 1990s, when Bill Tatum, then manager of TRA's Central Regional Wastewater System (CRWS), attended a regional Operations Challenge event hosted by the Water Environment Association of Texas (WEAT). Tatum was inspired by the pace of the events and the dedication of the competitors and resolved to organize a team to represent TRA.

Tatum approached John Bennett in 1993 for a "conversation that changed [his] life," Bennett said. Bennett went on to be a longtime CReWSers competitor and coach who would eventually serve

as Operations Challenge Committee Chair.

"Bill told me he was forming an Operations Challenge team and wanted me to be the captain," Bennett said. "I replied 'what the heck is Operations Challenge?'"

Alongside Bennett, the first CReWSers cohort featured Steve Price, Fred Norris, and Dale Burrow. Each member of the original team was chosen from different departments at CRWS to secure diverse skillsets, Burrow described, and many remained with the team for years. Burrow himself would compete for 22 consecutive years before retiring in 2017, returning to the 2021 competition for the team's final appearance.

The team first competed together during a state-level qualifier in 1995.

"We had no idea what Operations Challenge was or how to practice for it," Burrow said. "After coming in dead last in the first state competition, we were determined to never look that bad again. We were hooked at that point."

The First Big Win

Throughout the next decade, the CReWSers experimented with different training methods and team compositions. They made their national debut at WEFTEC 1996 in Dallas and continually placed

This year marked the TRA CReWSers' final appearance at a WEFTEC Operations Challenge competition, capping a legacy that spans nearly three decades. The CReWSers took first place in the Division I Laboratory and Safety events. Kieffer Photography



The TRA CREWSers made their national-level debut at WEFTEC 1996. The original team included John Bennett, Steve Price, Fred Norris, and Dale Burrow. Most of these competitors have remained involved with the CREWSers for decades. Courtesy of Dale Burrow

near the middle of the pack. WEFTEC 2005 in Washington, D.C. — the year the CREWSers would win their first Division I title — was where the team’s diligence began to pay off. That year’s team included Price and Burrow, as well as Jacob Burwell, who also competed alongside the team for more than a decade. Bennett, who had “retired” from the team one year earlier to serve in administrative roles for the competition, remembers the 2005 awards ceremony fondly.

“After the second and third-place teams were called, the LA Wrecking Crew started chanting ‘CREWSers, CREWSers, CREWSers,’ and everyone else joined in. It was so loud, the announcer had to

wait for the chant to die down,” Bennett said. The team pulled him onstage for a celebratory photo. “I have the photo of us on the stage in my office. Let’s just say all of our eyes were a little watery.”

The CREWSers’ victory made history: It marked only the second time Operations Challenge Division I champions came from outside Virginia or California. (The *Commode Commandos* representing the Rocky Mountain Water Environment Association won Division I in 1999.)

“Virginia and Los Angeles were already competing against each other and had a big rivalry going when we came into the picture,” Burrow said. “No matter how hard we trained, they seemed to be one step ahead of us each year. We were beginning to think they were unbeatable.”

“They definitely made us a better team. I always respected the fact that they were the first ones to congratulate your team if you won.”

The golden age of the TRA CREWSers had begun. The team would hold the Division I title in 2006, narrowly lose it to the *Commode Commandos* in 2007, only to reclaim it in 2008, 2009, and 2010. The team also won the competition in 2015, 2017, and 2018.

Building Careers

As the team’s successes continued, Operations Challenge became a staple of professional development at TRA’s water resource recovery facilities. Price described that interest in the competition among TRA staff developed quickly. This led to a thorough tryout and onboarding process for new recruits.

The authority has established a dedicated



From left, perennial CREWSers competitors Raudel Juarez, Dale Burrow, and Jacob Burwell rush to complete the Laboratory Event at WEFTEC 2008 in Chicago. The CREWSers earned their third Division I title that year; over their history they have earned seven. Courtesy of Dale Burrow

Operations Challenge training facility for staff, complete with the full range of competition equipment. Price added that TRA facilities also have gradually adopted and integrated several of the tools used in the competition into their daily operations.

“Our management has supported us every step of the way over the years,” Burrow said. “The team has also had lots of support from co-workers covering our shifts, helping us prepare events for training, and some even standing in as judges during training. Without support from management or co-workers, the CREWSers never would have made it.”

Raudel Juarez, then an operator and now CRWD’s operations manager, joined the team in 2007 after acing that year’s tryouts. He would compete with the team for the majority of its Division I win-streak. He credits much of his career’s development to his decision to participate.

“Being a part of this program has been one of the best opportunities of my career. The ability to come into contact with so many great leaders in the industry would be difficult to find by any other

program,” Juarez said. “Operations Challenge helped me get my Class A certification and helped me realize the need to continue my education.”

Bennett offered similar praise for the value of Operations Challenge. When the CREWSers formed, Bennett was CRWD’s chief mechanic. Today, he is Deputy Executive Manager of TRA’s Northern Region Operations Group.

“Because of Operations Challenge, I gained exposure that I never have had as a mechanic,” he said. “I learned more about process control than I ever would have, which helped me get my Class A license. I became a trainer for TRA and learned public speaking. It motivated me to go to college and obtain my degree. I developed a passion for our industry and the people that work in it.”

Not Gone Yet

While the TRA CREWSers dynasty may be drawing to a close, many of this year’s members indicated their plans to continue their involvement in the competition through behind-the-scenes support roles or on future TRA teams.



Division I mainstays the LA Wrecking Crew from the California Water Environment Association have seen it all during their decades of Operations Challenge participation, including six overall Division I wins. Longtime Wrecking Crew coach Paul Johnson described the qualities that all Operations Challenge champions have in common: “You want someone to be active, smart, athletic, mechanically inclined — you can’t just put anybody out there,” Johnson said. “It takes someone who wants to win, has that competitive edge. It takes a certain breed.” Kieffer Photography

Team HRSD Newcomers Continue Tradition of Success



Derek Havunen, Kolby Guse, William "AJ" Dickens, alternate Shelby Creeley, and captain Billie Swearingen all competed with Team HRSD from the Virginia Water Environment Association. This year marked the first national competition for all of them. Coached by Team HRSD veteran Patrick Porto, the team finished second in the Division III Safety and KSB Maintenance events. Kieffer Photography

to make past teams proud and beat their times. We just want to be good and continue their legacy."

Perfect Strangers

Like many teams competing this year, Team HRSD's roster represents a range of skillsets. The team included two WRRF operators, an interceptor technician, a member of HRSD's Small Communities Division, and even a customer care specialist. All members of the team work in different facilities within the HRSD service area.

The team was quick to prove their heritage during the 2021 competition, finishing second in the Division III Safety and KSB Maintenance events. Swearingen described that the team placed a particular emphasis on these events during practices, while also identifying each member's strengths and weaknesses and coming together as a team.

"Everyone brings their specific talents to the team," Dickens said. "We have a good mix here."

In addition to feeling the intensity of the WEFTEC competition for the first time, this year's Team HRSD also experienced both the dedication and solidarity of the Operations Challenge community. All members of the team described meeting dozens of rivals who immediately made them feel welcome.

"The hospitality and overall kindness of everyone here coming by to wish us good luck and offer tips and tricks has been incredible," said Porto.

"Operations Challenge has a great community," added Dickens. "Other teams want to beat you, but they also want to help you ... as long as they can still beat you."

The Journey Is the Destination

Tim Scott, who volunteered as a Safety Event judge this year, has been involved with Team HRSD since 2007 as a competitor, coach, and supporter. Scott described how HRSD's approach to Operations Challenge has changed over the years.

Today, HRSD places less emphasis on winning and focuses more on professional development, he explained. In recent years, HRSD has widened its tryout process to make any HRSD employee eligible to compete regardless of their job function. They also instituted "term limits" to ensure as many people can participate as possible.

"We don't want to be exclusive; we want to be inclusive," Scott said. "We might not finish at the top of the podium, but we want more people to have the opportunity to get there."

Win or not, Scott said competing in Operations Challenge transforms the careers of those who participate. He estimated that more than 90% of former Operations Challenge participants from HRSD have since received promotions. Some

The Hampton Roads Sanitation District (HRSD; Virginia Beach, Virginia) is one of Operations Challenge's oldest supporters. HRSD has sent teams representing the Virginia Water Environment Association to each WEFTEC competition since 1989. Beginning with the Ches-Eliz Lightning and the Pink & Black Attack, HRSD teams have found routine success across Divisions I and II for decades.

In recent years, Team HRSD has continued that tradition. Members competing under the Team HRSD name took the Division II title in 2010, 2013, and 2014. They built a reputation for their particular skills in the Laboratory, Process Control, and Maintenance events.

This year, a collection of entirely new faces sat at the Team HRSD table. Coached by Team HRSD veteran Patrick Porto, team members consisted of first-timers Derek Havunen, Kolby Guse, William "AJ" Dickens, alternate Shelby Creeley, and captain Billie Swearingen. Their goal: To take their place in Team HRSD history while learning new skills and having a great time.

"We're coming for them," Swearingen said. "We're trying



have even shifted career paths, including one former account investigator who competed on Team HRSD and ended up in WRRF operations after a conversation with a teammate.

Those who form and coach HRSD teams are encouraged to take a relatively hands-off approach, Scott said. A vital part of the Operations Challenge experience is the process by which groups of new teammates work together to solve problems and answer questions. As a result, he said, they build

their communication and teamwork skills.

"We like to be mentors, but we also want to step back and let competitors decide what's best for their team," Scott said. "As you start the year as a new team, you have no idea what you're doing. Then you start gradually developing a routine. This competition isn't just beat-your-chest bravado. It boils down to 'how well can four people work together to accomplish one goal?'"

All members of this year's Team HRSD work in different facilities and capacities within the HRSD service area. "Everyone brings their specific talents to the team," said competitor William "AJ" Dickens. "We have a good mix here." Kieffer Photography



What's in a name? Since the first Operations Challenge competition, countless teams have shown off their creativity with grin-inducing team names and eye-catching uniforms. This year's contenders continued that tradition, with monikers like the Sewerside Squad, the Dirty Birds, and the 69th Street Poo Mafia. For some teams, such as New England Water Environment Association newcomers Mass Chaos from Holyoke, Massachusetts, there's a meaning behind the name. "Coming into it being a first-year team while everything's going on with COVID-19, we knew this year was going to be absolute chaos," said Mass Chaos member Jason Swain. For other teams, such as the Division II Union County Predaturds from the North Carolina Water Environment Association, the meaning is a little more direct. "We like the Predator movies and work with turds," said the Predaturds' Dillon Hall. Kieffer Photography

WEAO Keeps the Competition Going Despite Travel Restrictions

As teams vigorously bisected pipes and performed complex sampling procedures, the sidelines at Operations Challenge 2021 teemed with just as much activity. Everyone — spectators and competitors waiting their turn alike — cheered on the action and reconnected after two years apart. Noticeably absent, however, were any non-U.S. teams. Ongoing, pandemic-related restrictions on international travel meant many Operations Challenge favorites, including teams from Denmark, Colombia, Argentina, and Canada, were unable to attend this year's competition.

The news that teams representing the Water Environment Association of Ontario (WEAO) would have to skip WEFTEC 2021 troubled Jeff Johnson, business development manager for ASL Roteq (Brampton, Ontario) and chair of the WEAO Operations Challenge Committee. One WEAO team — the Peel Wastewater Connoisseurs — made their debut during last year's virtual competition and became the inaugural winners of Division III. Missing the 2021 competition meant weakening the team's momentum just as it began to pick up.

Johnson and others on the committee resolved that the show must go on, even if it meant hosting the competition themselves.

"After several meetings we concluded we needed some way to keep Operations Challenge alive,"

Johnson said. "Our goal was to get as many teams to compete as we could, and we felt the best way was if we came to them."

Operations Challenge Tours Ontario

Many of the pieces necessary to re-create a mobile Operations Challenge competition across Ontario already were in place, Johnson said. The committee loaded equipment used for its regional qualifiers onto a truck owned by ASL Roteq and hit the road.

During the week of September 13, they visited two facilities about 70 km (45 mi) apart. First, they stopped at a pumping station owned by the Region of Peel's wastewater department and, next, they visited the Duffin Creek Water Pollution Control Plant in Durham.

The competitors participated in the scaled-down, two-person versions of the Process Control, Laboratory, and Collection Systems events developed last year for the virtual competition. These events proved easy to adapt to a mobile format. In the Process Control Event, the teams completed 50 written, multiple-choice questions in 20 minutes before resolving hypothetical challenges on a process simulator. The Laboratory Event required them to analyze samples representing a normal treatment process for factors such as total dissolved solids and conductivity. They used this

During the week of September 13, members of the Water Environment Association of Ontario Operations Challenge Committee hosted a mobile Operations Challenge competition. The traveling competition offered versions of three events that were used during last year's virtual Operations Challenge. Ian Smith



Three Ontario teams — two from the Region of Peel and one from Durham — completed the events at their home facilities. 2020 Division III champions the Peel Wastewater Connoisseurs placed first overall in the competition. Ian Smith

data to evaluate the removal efficiency of different treatment processes. In the Collection Systems Event, participants installed a 10-cm (4-in.) lateral sewer outlet onto a new, 20-cm (8-in.) stretch of PVC pipe.

Home-Field Advantage

Two teams from Peel and one team from Durham completed the three events on their home turf. They competed in the same places they had practiced.

"The odor [of the pump station and treatment facility] added a kind of familiarity to the event," Johnson said, recalling the warm, sunny weather on both days of the competition. "I was both surprised and pleased to not only have the competing teams show up, but also an excellent audience including management at each location."

When the dust settled, the 2020 Division III champions held their title. The Region of Peel Wastewater Connoisseurs — Lino Zanardo and Maitrik Patel, along with coach Dennis Newdick — placed first. They were followed closely in the point tally by the Region of Durham Sludgehammers. The Sludgehammers included Adam Hubers, Kirk Gonsalves, and coach Andy Griffin. The second team from the Region of Peel, known as the Wastewater Connoisseurs 2.0 and also coached by Newdick, placed third, featuring Peter Barbisan and Nathaniel French.

As winners of the WEAO mobile Operations Challenge competition, the Connoisseurs earned an invitation to compete in next year's competition at WEFTEC 2022. Because they have not yet experienced a full-scale, in-person WEFTEC competition, they will remain in Division III.



Almost every team reported that the COVID-19 pandemic took its toll on practice time in the months leading up to Operations Challenge 2021. It was clear on competition day that navigating social-distancing protocols, obtaining travel approval from their organization, and finding spare time during their around-the-clock jobs left many wishing for just a few days of extra preparation. The Cakebreakers, representing the New Jersey Water Environment Association (NJWEA), are a mixture of two previous teams: the Jersey Devils and the Riptide. "We just started practicing in mid-July, when usually we've started practicing a good three months prior to that," said Cakebreakers captain Art Cowan. During their limited time together pre-WEFTEC, the team focused almost entirely on the Collection Systems Event. Their strategy paid off with a first place Division II win in that event. Kieffer Photography