Conference Presentations Address Expectations, Challenges & Solutions By Kristen McIntosh



On Wednesday, Nov. 3, RTA President Rick **Gibson**, president of Appalachian Timber Services officially opened the 103rd edition of the Railway Tie Association Symposium and Technical Conference with the pounding of the gavel. More than 200 members were present in St. Louis, the city where RTA was organized in 1919, while others joined remotely.

Gibson recognized the efforts of the RTA Executive Committee, other RTA committee members, staff members Debbie Corallo and Barbara Stacey, and former Executive Director Jim Gauntt. The team pulled together to organize all facets of the annual Tie Grading Seminar and the annual conference in the face of several challenges. "These individuals played critical roles to achieve success. They did this while keeping every other RTA program and service functioning at a very high level. Consider that 2021 saw one of the best Tie Grading Seminars ever held. We also hired a new executive director, who I will introduce shortly. Additionally, just look around you. Even while facing the pandemic and other issues, we are meeting together face to face. Those are indeed remarkable successes, especially considering the very

hard decisions the RTA board had to make back in June."

During the business session, Gibson announced the officers and committee members elected for 2021-2022: Richard Gibson, president, Appalachian Timber Services; David Koch, first vice president, Wheeler Lumber Co.; David Whitted,

To you and the other 3,000+ RTA members, please embrace this opportunity equally as have I with a sense of new beginnings all the while respecting tradition and capitalizing on sound, forward thinking." - Nate Irby, RTA executive director

second vice president, Stella Jones; John Giallonardo, Koppers Inc.; Bill Behan, Gross & Janes Co.; Matthew Netterville, Netterville Lumber Co.; Michael Skeen, CSX Transportation; Sheila Gudenrath, Union Pacific Railroad; and Kristine Storm, Genesee & Wyoming.

Gibson then introduced Dr. Nathan "Nate" Irby, formerly with Union Pacific Railroad, as the new RTA executive director. Irby briefly addressed the group. "We have solid foundations and we do have room to grow.

It is my honor to address this crowd and hope this message finds each of you well. To you and the other 3,000+ RTA members, please embrace this opportunity equally as have I with a sense of new beginnings all the while respecting tradition and capitalizing on sound, forward thinking. As you know, RTA offers a plethora of education, outreach, research, news, statistics, and information to all members of the wood crosstie industry. RTA has been operating for over 100 years, has just appointed its 10th executive director, and is poised to remain a platform for information dissemination, networking, and research and development."

Irby described his approach to leadership. "I'm a boots-on-the-ground kind of guy. I'm a utilitarian tactician, and I like to see things get done. Not only is it satisfying for me, but I hope the work I do speaks for itself. I like to speak with people eye to eye. My word and my handshake are genuine. And I can appreciate hearing the bad news just as much as the good. I take pride in being transparent, building relationships and arriving at a collective understanding. We might not always walk away reaching consensus, but please know I've listened to better understand your perspective, and I hope you walk away better

> understanding mine. I like feedback. I highly value honesty. I have a lot of work to do with membership, current and

prospective. Engagement is a key component for survival of this organization, and we all have a stake in that, so please take advantage of opportunities that present themselves to capture and expand RTA involvement among your direct and indirect constituents. I will work hard for you every day I am on the job. You and I will both be proud of the work we collectively accomplish."

Irby's address was followed by the day's presentations and panel discussions, beginning with the Economic Forum.

Economic Forum

Connor Lokar of ITR Economics presented the economic keynote address by re-



viewing the 2021 economy, adding that it is expected to continue growing in 2022 and 2023 but that growth would slow significantly. "The economy is slowing down. The economy is

going to decelerate further. The growth rate is essentially being cut in half as we head into next year."

Lokar added that next year will not look or feel like 2021. We are going to see the inflation cycle turn over. We are going to see the supply chain strain, and stress pressure on global logistics networks start to ease and get better next year, not continuously worsen like we've experienced so far in 2021. And what it's going to take is demand coming back for us to get there."

Lokar also noted that the United States is at the top of the cycle now for hardwood demand and pricing but to expect housing starts and other leading indicators to decelerate in the coming months. Lokar further added that his company predicts the U.S. economy will experience a Great Depression in 2030.

Industry Analysis & D.C. Legislative Update

Following Lokar was longtime railroad industry analyst **Anthony Hatch** who updated the group on the railroad industry outlook for the future and **Chuck Baker**, president of the American Short Line and Regional Railroad Association, who provided the legislative update from Washington, D.C.

Hatch described five enduring railroad competitive advantages, including financial condition and liquidity and infrastructure. "The railroads are in excellent financial



condition. Through this pandemic they improved margins and cash flow. If there's a problem, they need to solve, they can fund it. If you look back at the last 50 years of railroad

industry, often when they had problems, they were sort of financially incapable of solving them, which is why they needed deregulation, etc. Right now, they should be spending more. They are spending a lot, and I'll talk about technology later, but a lot is not enough. Where you all come in is infrastructure advantage, which is huge for them. This infrastructure bill trying to struggle its way through just points to the fact that railroads funding their own infrastructure, which was a disadvantage when the highway system was built (building out a competitor network with taxpayer money), now the railroads can make their own decisions and unlike the highways do not have to struggle politically for funding."

Baker highlighted how short line railroads are expected to benefit from the passage of the infrastructure bill. "I'd say



it's a great bill from both a funding and investment perspective," he said. "For short lines, the highlight of the bill is the \$5 billion CRISI grants over five years. Short lines are

directly eligible applicants for the grants. We are extraordinarily optimistic about that. There's \$8 billion for INFRA grants. There's a lot of money out there. And, through the hustle and creativity of short lines and the 45G tax credit, short lines over time will be able to gradually eliminate deferred maintenance and upgrade some of our tracks. Some of the advice we are offering our members is that given that all these programs other than the CRISI grants requiring a public partner to be an applicant, now is the time to be dramatically stepping up communication with the government to compete for federal money. For tie suppliers and contractors, I encourage you to have conversations with short lines. They are looking years ahead in terms of major improvements. Now is a great time to talk about availability, lead times, etc., and I can tell you they will appreciate the outreach."

Luncheon Keynote Address

Former NTSB Chairman **Robert Sumwalt**, now retired, provided the luncheon address, discussing the critical role of safety leadership and making the point by illustrating several recent catastrophic accidents and describing what



steps leadership should have taken to avoid them. He encouraged audience members



to trust their instincts and follow all safety processes and procedures without fail, even in the face of time constraints or other challenges. "If you have a feeling something's not

right, do the easy thing and check." He urged everyone to ask themselves this: "Do we have chronic unease, an obsession with possible failures, and are we avoiding hubris and complacency? Be honest with yourself." He added that leadership must be obsessed with continuous safety improvement to avoid accidents.

Hardwood Session: Today's Sawmill Challenges

Moderated by **Dana Cole**, executive director of the Hardwood Federation, hardwood manufacturing professionals participated in a session describing some of their greatest challenges. The panel was composed of **Brian Brookshire**, executive director of the Missouri Forest Products Association, **Frank Wilson** of Wilson Brothers Lumber Company, **Paul Gaines** of Madison County Wood Products and **Darwin Murray** of McLain Forest Products.

Cole provided an overview of the Hardwood Federation's role as the public policy arm for the industry. The Federation

is composed of 28 industry organizations, including RTA. "Our top four issues are, number one, making sure that wood products are part of any carbon scheme that this administration is putting forward. This is taking up an awful lot of our time right now. Taxes, workforce development and vaccine mandates are also some of the things we are focusing on." She urged RTA members to contact the Hardwood Federation and join the mailing list to stay informed about the work being done on these issues. "It's really important that you engage with your members of congress—on the ground, in your areas, in your homes, in your workplaces—because the more they hear from you the more they will be educated on the issues that impact you and your companies and workers."

Cole also mentioned the Real American Hardwood Coalition, a group of associations



developing a domestic marketing program for wood products. "It is essential we provide a robust informational gateway for consumers to learn about the great value,

beauty, durability and environmental benefits of hardwood products."

When asked what challenges keep him up at night, **Gaines** said his company's biggest challenge is workforce availability and decline. "In some cases, it's limiting the amount of production we are seeing from the

forests. I'm not sure in the future how we are going to cope with this. You've got to have people on the ground to get timber out of the forest."

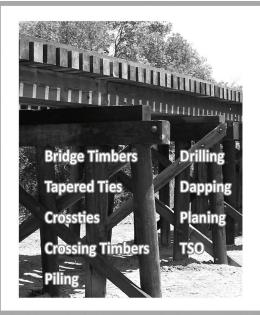
Murray said workforce shortages are also of concern. "We are starting with training our leadership and encouraging them to project how much they care about our employees. I just recently met with one of



our employees, a young mother working on the line at our flooring mill, and asked her what keeps her coming back to work each day. She said, 'It's because you all care.' We

have instituted a lot of programs to show our employees we care about them. It's not that we didn't before, but we've really had to step it up, and we are fully staffed today." He also said labor shortages are impacting production and that while production is not at the levels it was in the recent past, "production is coming up."

Wilson also addressed labor shortages, especially related to loggers. "I have been dealing with employees all my life, and I cannot understand how we went from full employment to nobody wanting to work," he said, adding that it is imperative leaders understand the needs of a younger workforce. "You've got to have that influx of younger people, and we're not doing a good job of attracting them. We've got to do a better job if we are going to solve this



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employment shortage."

Wilson mentioned that his mill hosted students from Norway who were in the United States to learn about the



manufacturing business.
"These young men choose
to go into the forestry
industry in high school,
and they are trained at that
time. This is what we're
going to have to start doing

over here. When we increase production, our workforce is not enough to sustain it. We're going to have to do more training. We're going to have to start letting the young people see what is out there. In high school, there's a lot of young men who enjoy working with equipment. We just never let them work on it because of age regulations."

Brookshire said his association members asked him to create a school for loggers. "So, we approached every technical school in

RTA conference attendees always look forward to receiving updates on the latest cutting-edge research and development initiatives. In this photo, Dr. Jeff Lloyd of Nisus Corp. addresses the group on extending tie life and using alternative wood species for ties.

give up, but I do think there's an opportunity for us to collectively come together from a general industry standpoint, meaning those

> who recognize the importance of trained loggers especially in hardwoods because it is a challenge for us to go totally mechanized. We need to give this

another shot as an industry, but I think it must be set in a technical school setting. We know the technical side of logging, but in terms of recruiting students we struggle."

Gaines said his company invests in equipment that allows it to appeal to younger staff. "As they have said, there's no outside



training, so we have to be willing to train them. Ten years ago, five years of experience were necessary to run the equipment. Now, we're willing to train on the job," he said.

"Logging work is manual labor and it's hard to find someone willing to do it for \$20 an hour, which is probably average. I think the biggest thing is to be able to provide something that entices them to do it and help them be able to make ends meet."

Other challenges of concern that could impact the industry down the road are

byproducts markets and supply issues that are causing companies to carry more inventory on their shelves. "I never dreamed we'd have trouble getting motor oil, a band saw, belts for machines. All of those things have become issues for us," Wilson added.

AREMA Presentation & RR Engineering Session

Union Pacific's **Mike Freeman**, president of the American Railway Engineering & Maintenance of Way Association, provided an update on the association. He was followed by **Ed Sparks** of CSX Transportation and **Adam Bankston** of BNSF Railway who discussed engineering-related projects and initiatives.

"AREMA membership remains strong. We are pleased to be the professional railroad organization of choice for 5,500 people. AREMA will end 2021 in sound financial condition. Our 2022 annual conference will be held Aug 28-31 in Denver. Our 2023 convention will be held Oct. 1-4 in Indianapolis in conjunction with RSI, REMSA and RSSI," Freeman said. "Our association initiatives are focused on strengthening the future of the organization. One key to that is technology. In this ever-changing era, we're seeking to better leverage technology to deliver educational content more efficiently. We are also supporting the next generation by creating scholarships, events and programs tailored specifically to them."

You've got to have that influx of younger people, and we're not doing a good job of attracting them. We've got to do a better job if we are going to solve this employment shortage." - Frank Wilson, Wilson Lumber Co.

Missouri and talked to them about how this could work, and we developed a curriculum. We were turned down because we could not guarantee a certain number of students to attend right off the bat. That was a hurdle we could not overcome. Missouri loggers



average in age about 54. So, we started our own logging school three years ago within the association. With grant money and big industry commitments, we had the money to move

forward with the 10-week program and ran it for about a year and a half. We reached out to FFA programs in high schools, developed YouTube videos and went through hoops to recruit. We had scholarship money to cover housing, and we had instructors on board. But one of the classes only had five students, and the next one had three. We just could not recruit the students. We're not willing to

Freeman then offered an engineering report on Union Pacific, stating that



maintenance work to extend the life of open deck ties includes keeping the structure tight, especially on timber structures; keeping hardware tight; limiting the number of

penetrations into the tie; and plugging the tie or using chemical methods to prolong the life of the tie if spike kill is an issue.

Bankston said BNSF is working with TTCI and AAR's Tie/Fastener Strategic Research Initiative on a 10-year tie life



study to help BNSF better understand how ties degrade under different conditions so engineers can accurately predict where and when ties are likely to fail. "We are

using the Loram Technologies Inc. Aurora scan system to tell us what the internal and surface conditions are. We are then plugging that into a statistically driven model to understand what that degradation actually looks like. We are starting to see our efforts pay off and get the tie life dialed in." Bankston said five-year study results likely would be previewed at the AREMA convention in 2023.

Sparks discussed CSX's progress on a variety of construction projects, including the Carolina Connector. Sparks said this project is a joint initiative with the state



of North Carolina and is situated north of Rocky Mount, N.C., "where we built a new intermodal terminal. It went into service Oct. 7 and is

generating revenue for our railroad." Sparks said the project, known as "CCX," called for the use of many wood ties. Another construction project mentioned was the Howard Street Tunnel and associated clearance projects. "The design is funded, and we are working through all the agreements to fund construction. We expect to start construction next year. This will be a challenging project," he stated, saying the project includes bridge modifications and track lowering.

The day's presentations were followed

by a reception that included recognition of RTA's award winners.

Hardwood Session

Thursday, Nov. 4, business sessions kicked off promptly at 7:30 a.m., with **Judd Johnson** of *Hardwood Market Report* providing an update on the future of hardwood rail tie supply. "The resource itself is not a problem. But the business health of



the hardwood sawmill is critical," he said. "In 2021, transportation bottlenecks, disruptive manufacturing, supply shortages, labor shortages—these are all very real challenges, and

we are beginning to see evidence of this at the consumer level to the extent that I don't think that any of us here have seen anything this before."

Johnson said revenues for sawmills are down. "The less volume shown in this slide and the less value as shown in the previous slide demonstrate very clearly that revenues for the sawmill industry are way down from what they were before."

Research Session

The Research Session followed, kicking off with a presentation by **Jeff Lloyd** of Nisus Corp. on what 50 years of dual treatment of ties has taught us, including methods that can be used to extend the life of ties and ultimately reduce the amount of tie material that must be disposed of after useful life in track. Lloyd said it is imperative to ensure tie treaters are hitting the AWPA and AREMA standard for borate. "In my opinion, many treaters in the U.S. are not doing that and it's important that we do it. Dry properly to open checks for treatment. Treat fully with copper naphthenate or creosote. Do your field treatments. Put preservative under the plate. The best way to do that is to put the ties the right way up and to predrill for the spikes. This is what we used to do. We're not doing it anymore because of how we've automated tie installation. If we're not going to do it, thru-bore the ties."

Kenza Soufiane of the University of Delaware discussed research that studied the impact of adjacent support condition on premature crosstie failure. "Research motivation and goals were to predict a



railroad tie's condition and its remaining life as a function of the condition of ties surrounding it; help make better decisions on tie

replacement and tie gang prioritization; and contribute to the overall improvement of railroad infrastructure maintainability and safety."

Mark Denavit of the University of Tennessee, Knoxville, provided a report on a research project, funded by Stella-Jones, that studied how the use of two-step dual treatment during seasoning could allow the use of underutilized abundant species. "The



goal of this work was to document the protective effect of borate treatment of green ties, quantify the impact that pre-treatment decay (stack burn) has on the mechanical properties

of unprotected wood ties; and compare the effect of stack burn to the inherent differences among some wood species." Denavit said, "Some species like yellow poplar have traditionally been deemed unsuitable for railroad ties but only have slightly inferior mechanical properties than other species that are commonly used like sweetgum. It is possible that yellow poplar ties with those initial inferior mechanical properties, if they are dual treated, could, by the time they are placed in service, have better mechanical properties than other species that are not dual treated." In conclusion, Denavit reported that pre-treatment decay reduces mechanical properties, and that early borate treatment limits decay during seasoning and maintains tie strength and stiffness. In short, Denavit said, "Limiting decay during seasoning may enable greater use of non-traditional species."

Next, **Tim Carey** of Arxada, formerly Lonza, provided an eight-year update on



a study of in-track ACZA-treated hardwood ties. ACA and now ACZA have been used to preserve and protect railroad ties in the West since 1936. Carey

reported that Mike Sanders of Mississippi

State University, who is assisting with the study, stated that "all ties seemed to be performing well at the time of inspection. No major biological deterioration was noted in any of the test ties at the time of the inspections." Carey said ACZA has maintained levels of preservative treatment, extending the service life of ties beyond current expected norms even in a harsh environment and that borates may further extend the service life. When testing mechanical endurance results, ACZA-treated ties show that waterborne treatments can withstand typical Class 1 railroad loads and can withstand the lateral stresses of being in a "Y" curve. "In the future, the hope is to bring the technology east," Carey said. "Treating plants are now on the west coast. It's a good product and it's doing a good job. It's always good to see things perform better than you expect."

Beth Stokes of Mississippi State University updated the group on the ongoing RTA-MSU alternative wood preservatives research project (AWPRP). The project evaluates the relative performance of newer



preservative systems next to creosote and borate/ creosote systems, using refractory and nonrefractory wood species at two locations, with and without Formosan termite

pressure. "In the annual evaluations, all ties are visually inspected from above during a walk-through and rated based on a 0-10 scale. Degradation or damage is cataloged by photos taken during annual evaluations. Cracks, checks, splits, damaged hardware, termite and decay damage, and other noticeable characteristics are recorded." Stokes reported that in Phase 1 of the study researchers found extensive decay in the controls at Sites 1 and 2, with Site 1 ties exposed to higher levels of moisture due to rainfall, poorly draining soil, more shade and litter. She said checks and splits are common but are somewhat worse at Site 2. "In Phase 2, we are seeing increasing decay in controls. Site 2 ties are drier, and Site 1 ties have higher exposure to moisture. Site 2 has increased Formosan termite presence. Multiple treatment groups indicate little to no damage from decay or termites. Sample change is gradual at this size, and long-term



evaluation should be continued."

Lloyd took the stage again with a presentation focused on tie reuse at the end of life. "We have a huge issue with carbon



dioxide emissions. The last time we were at this level, there was a forest in Antarctica. Just about everybody recognizes it's a problem, and just about everybody wants to do

something about it," Lloyd said. "Railroads can pay per tie to landfill or incinerate ties. We can reduce the number of ties by making them last longer. We can reuse the materials for landscaping and mulch. If we recycle material for energy, we can gasify and recover biochar, which might have upfront costs but longer-term benefits."

Charles Ludwig of CHZ Technologies provided a presentation on thermolyzer technology and ties, Electric Power Research Institute (EPRI) and utilities as a potential partner, and biochar. "We have a technology



developed in Germany that takes shredded end-oflife materials and turns them into a very clean, pure gas—a renewable synthetic gas—and clean solids. The solids have the

ability to recover materials that are there." Ludwig discussed current technologies to utilize ties at the end of life, including co-gen/incinerator and pyrolysis with the output being oils. "Let's take the material and distill it and use as it as fuel oil. The problem is with material left in the bottom,

all the treating compounds must be disposed of. The thermolyzer technology requires no flame or oxygen and destroys the toxic compounds."

Creosote EPS Regulatory Update

David Webb of the Creosote Council provided an update on state and federal creosote regulations. "One of the major things we are looking at right now is the re-registration process for creosote with EPA. We need to satisfy EPA with regard to



creosote risk assessment and migration issues. We responded to them by the deadline. We provided a lot of information that has to do with what would end up going on the

label and would affect the use of creosote by the various treating companies. We agreed with the agency that some of the personal protective equipment needs to be changed inside and outside the cylinder. We've also had recently some significant information from EPA about how we need to move forward with testing programs with migration with both water and soil."

Wood Preservation Update

Dallin Brooks of the Western Wood Preservers Institute discussed the need for everyone to share the story of preserved wood and its impact on infrastructure. "We need to help people really understand how important the railroads and wood ties are for safety and sustainability. We need to tell that to the entire supply chain.

They don't understand the whole story and how important preserved wood is to critical infrastructure. We are critical



infrastructure, and wood ties are a significant source of storing carbon from the atmosphere. We need to tell our story to forestry associations; government agencies; railway

employees, boards, and commissions; and cogeneration facilities. We also need to accurately tell our story that preservatives offer passive tie protection; that should not be referred to as industrial or commercial products but rather infrastructure products."

Railroad Purchasing Forum

Always a highlight of the RTA Conference, the Purchasing Forum offers railroaders the opportunity to project their tie program for the coming years. Moderated by Genesee & Wyoming's Kristine Storm, panelists included Anthony Weiss of BNSF Railway, David Knopsnider of CSX and Sheila Gudenrath of Union Pacific. Storm said while it has dropped slightly,



ties continue to represent the largest portion of the railroad's capital spend allocation at 38 percent, with rail coming in next at 18 percent.

Storm reported that for 2022 the railroad is expected to replace 900,000 wood ties, 900,000 board feet of switch timbers, 4.5 million board feet of bridge timbers, 150,000 board feet of crossing timbers and 500 total steel ties.

CSX's **Knopsnider** projected the



railroad would replace 2.6 million ties this year and 2.8 million next year. In 2020, that number was 3.2 million. Knopsnider reported that CSX will continue with a robust

capital investment program based on deterioration models, experience, necessity, and capital.

BNSF's **Weiss** took the stage to discuss the railroad's capital plan for the coming year, including that 2021 capital investments were expected to total \$2.99 billion, with 81 percent allocated to core network and related



assets. Thirteen percent would be devoted to expansion and efficiency, and 6 percent to freight cars and other equipment. In 2021 about 2.7 million

ties were replaced. Expected tie replacement for 2022 is 2.8 million.

Gudenrath provided a pre-recorded presentation to the group. "For program year 2022, we estimate approximately 3.3 million wood ties and 50,000 concrete ties for a total of 3.35 million ties. This, of course, is subject to change."

Producer Forum

All new to the RTA Conference was the Producer Forum, composed of **Doug**Mellott of Mellott Wood Preserving, John Giallonardo of Koppers Inc., Michael McNail of Missouri Tie LLC, Bill Behan of Gross & Janes Co., and George Caric of Stella-Jones.

year, but we've proven
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and our customers so we
are all on the same page
about raw material and
transportation challenges."

John Giallonardo,
 Koppers Inc.

Giallonardo said his plants have continued to operate safely and efficiently despite



challenges. "It's going to be a challenging year, but we've proven our industry is up to the challenge. We continue to work to educate ourselves and our customers so we are all on the

same page about raw material and transportation challenges. Our industry is here to stay and is made up of good people, and we'll overcome these challenges."

"My first RTA was in this same city in 1979," **Caric** said. "We're noticing



headwinds going in to 2022. We had trouble with labor, trucking and materials, and trying to get things to the railroads. We were waiting to get trucks

to deliver our crossties. We will get through this. It's a great industry with a great future, but it's going to take a lot of hard work and determination to get to that great future.

Behan said he believes there will still be a very strong demand for fiber, crossties, bridge ties and switch timbers



going forward. "I think there will be continued pressure on pricing to obtain fiber and, as an industry, are we going to be able to fight some of the competing industries

that are consuming some of our fiber? It will be challenging for us, but I think we will be able to step up and help some folks in 2022. We are doing more in specialty products than we've ever done in the past few years, and that's something to look forward to as we continue to grow."

Mellott said since production of crossties has been down, "we have to take what is



given so we can keep crossties coming in. We give the railroads a quality product. If a sawmiller gives us a substandard tie, we have to pay them for a grade tie. We're being

squeezed with costs of health insurance and other costs that we can't pass on."

McNail said his company is facing some of the same concerns expressed by



the others. "We are also having labor issues and difficulties sourcing raw materials due to competitive markets. We believe 2022 is going to be challenging with pricing;

it's changing daily, so we will have to stay on top of it."

The conference closed following the Producer Forum, with Gibson reporting plans are in the works for the 2022 conference to be held in Nashville, Tenn. Please stay tuned to **RTA.org** for updates on conference dates and registration details.