Duncan Parnell

WAVE LENGTHS

OVER 20 YEARS *OF GEOSPATIAL NEWS*
Winter 2020

EARNING ITS WINGS:

Woman-owned firm lands big survey contracts in N.C.

The Charlotte Douglas International Airport (CLT) in North Carolina is the 10th busiest passenger airport in the United States, ranking it higher than Orlando and Houston. In 2018, 46.4 million domestic travelers and 3.2 million international passengers moved through its 114 gates and five concourses. To help serve this exponential growth, CLT launched Destination CLT, a roughly $3.1 billion program to renovate its concourses and expand its roadways, curb front, airfield and terminal. Duncan-Parnell's customer, CES Group Engineers, has been combining Trimble's modern survey instruments and scanning technology to provide first-class data to help build CLT's final destination.

CES Group Engineers, a certified women-owned small business has earned a place on some of the highest-profile projects in the region in a notably short amount of time. Having built considerable success in environmental consulting for ten years, CES sought to diversify in 2011 and began providing professional land surveying services, a shrinking industry in North Carolina in recent years. They turned to Duncan-Parnell to not only help them choose the best tools to make their mark in land surveying, they capitalized on Duncan-Parnell's training expertise, consulting services and technical support to strengthen and grow their new surveying business division. Within a few years, CES was securing survey contracts approaching $1 Million.

> **"Duncan-Parnell has been critical to building our successful surveying service. Their knowledge of cutting-edge technologies and support have been instrumental in helping us understand how we can best use the equipment to stay ahead of the competition. It's a winning formula that allows us to consistently deliver on projects."**
>
> *– Judy Heleine, owner, CES Group* Engineers

Destination CLT is one such project. Given CES's proven performance on previous design and construction surveying projects at the airport, multiple CLT prime contractors chose the company as the primary survey provider for more than 24 individual projects. One of those was the South-Crossfield Taxiway (SCT), a massive project that's building a new 4,000-foot-long taxiway to connect the central and east side of the airfield.

CES field crews needed to create a 3D topographic survey of a 300-acre site with varied terrain and infrastructure, as well as locate critical utilities, taxiways, runways and ramps to an accuracy of 0.01 feet.

Within the SCT, there was a 40-acre, concrete cargo apron, comprised of 107, 20 ft x 20 ft concrete slabs laid in a grid pattern. CES was required to pinpoint every concrete joint within this vast area, along with any grade change over the cargo space and taxiways.

To acquire that kind of survey detail, CES Geomatics Division Manager, Kent Hudson, PLS, calculated that it would require crews to take between 5,000 and 7,000 shots with traditional total stations. And they'd be in the field for eight nights. Hudson believed the Trimble SX10 Scanning Total Station, acquired from Duncan-Parnell, would be a better alternative.

Earning its wings continued...

TACKLING THE TARMAC

In January 2019, crews began the survey. Because the SCT is located within CLT's airfield, CES needed to perform their work overnight to avoid disrupting airport operations and for safety.

To meet the accuracies and deadlines required, CES surveyors arrived at the field with multiple Trimble technologies, including R8s GNSS receivers, S7 total stations and a DiNi digital level, all of which had been purchased from Duncan-Parnell.

They first set control using R8s GNSS receivers, occupying each control point multiple times and calculating the averaged coordinates for each point. They then ran a closed traverse loop using the S7 for horizontal control and the DiNi digital level for vertical control to within 0.01 ft. With control established, three different survey crews used multiple Trimble S7 total stations to collect all the field data including ground shots, utilities and critical tie-in points.

Hudson and a colleague scanned the cargo area, arriving on site one night at 11:00 p.m. They used the previously established primary control network and set additional "spur" control points as needed. Setting the SX10 on a chosen control point, Hudson captured the scene, collecting not only the concrete joints and surface elevation variations, but also the tops and bottoms of retaining walls, storm grates and building corners at distances up to 300 feet from the instrument. In 10 scanning set ups, his crew captured the entire 40 acres in a single seven-hour shift.

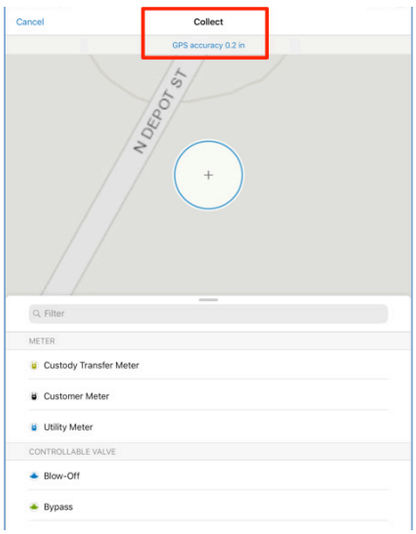
"I went to the site expecting it would be a three-night job, and I was shocked that we got it all in one night," said Hudson. "Our dealer, Duncan-Parnell, had assured me that darkness wouldn't be a problem, and they were right. I not only acquired millions of 3D points that clearly show all the concrete seams and subtle grade variations, I captured substantially more data in just 13 percent of the originally-planned time."
Back in the office, Hudson processed the point cloud using Trimble Business Center software and removed any extraneous features such as parked airplanes. He then created a 3D topographic model of the 40-acre concrete apron and exported it into AutoCAD to produce a final 3D surface. Two days after capturing the data, CES delivered the topographic survey to their client.

Being an integral part of such a high-profile project is testament to how far CES has grown from the residential lot surveys it was providing only eight years ago. Duncan-Parnell is honored to have played a supporting role in CES's success, and as a trusted partner, it is committed to continuing to help CES secure the right technology at the right time.

Tech Tip: Using NTRIP/VRS with the New Collector (iOS)

Requirements:

- ArcGIS Online web map configured for Collector for ArcGIS project
- VRS real-time subscription
- Collector v18.0.0 (and up) installed on iOS tablet or phone (BYOD)
- High-accuracy receiver (such as Trimble R2 or Trimble DA1 antenna)



Steps:

1. Connect and configure receiver to BYOD per manufacturer's instructions.
2. Open Collector app on device and sign in.
3. Click on avatar in top-left corner to access your Profile (settings).
4. Scroll down to Location and click on Provider. Click Add to add the receiver as Provider.
5. Set the antenna height. Most poles are 2m or you may set to the approximate height at which the receiver is held. If not using a pole, the elevation value and offset used to derive that information will not be consistent.
6. Under Real-Time Correction, click Source.
7. Choose NTRIP as the source. Click back.
8. Click Server. Enter the URL and Port from your NTRIP provider. Click Connect.
9. Click Mount Point. Choose the best mount point for your receiver based on manufacturer's instructions. Most newer receivers are capable of using a CMRp or CMRx correction stream and are recommended. If credentials are required, you will be prompted for username and password. If so, enter the credentials and click save.
10. Click Done to return to your Profile.

Note: The Location Profile must be set correctly when using a correction datum that differs from your map datum. This ensures that the proper datum transformation is set between the two datums. Check out our Success Center for more information on this.

You are now ready to use your NTRIP corrections with Collector and your high-accuracy receiver.

For questions, contact Tiffany Puett at tiffany.puett@duncan-parnell.com

Duncan-Parnell completes acquisition of GPServ (Florida)

Great news: Now a full year after acquiring GPServ in January 2019, the Florida geospatial dealer will now officially transition under the Duncan-Parnell brand. The Orlando-based Trimble distributor has provided a wide range of survey and mapping solutions for Sunshine State surveyors and GIS clients along with being a reliable partner among its customers for over 20 years.

It's an honor to enter into the state of Florida, and we look forward to continuing those efforts to make our customers' experience and business better than ever. We're overjoyed that the same familiar faces you've come to know at GPServ and their vast years of geospatial experience will be a part of the Duncan-Parnell family. We are thrilled to have the opportunity to serve our Florida customers and strengthen the resources and solutions for all surveying and mapping needs.

> **"At Duncan-Parnell, we strive to create lifelong relationships built on value. So, I look forward to creating even stronger relationships with surveyors in the state of Florida and being there to continue and expand upon the support and solutions that GPServ has provided for the past 20 years."**
>
> *– Mark Duncan, President, Duncan-Parnell*

News & Updates:

Meet the New Trimble R12 GNSS Receiver
Powered by the all-new Trimble® ProPoint™ engine, the Trimble R12 enables you to confidently measure in a wider range of environments, improves performance and productivity and empowers you to measure faster in more places than ever.

Trimble Access 2019.10 Available Now
This version includes support for the new Trimble R12 GNSS receiver. Pipe network LandXML files are also supported which allows staking the pipes between manholes as well as multiple inverts at the manholes.

TerraFlex™ updates to support TruPulse ® Laser Offsets
Now supports capturing remote features using the TruPulse ® series laser rangefinders. The solution enables easy, accurate and safe capture of GIS features in locations that are physically inaccessible, hazardous and in challenging GNSS environments.

Trimble Water – Telog IFM-32 Insertion Flowmeter
Delivers a flexible solution for monitoring flows in water distribution networks. Helps utilities identify the areas of the network with greatest NRW losses and prioritize leak detection and capital investments in those regions.

Employee Spotlight: Meet Mark White

Mark White is a land surveyor by trade and a technical trainer on survey grade GNSS and robotic total stations. He has worked with GNSS and robotics over the last 28 years with the last 14 years as a full-time trainer and technical support specialist. He has been the training manager for Duncan-Parnell, Inc. the last 7 years.

His surveying experience includes building and heavy highway construction, boundary and topographic surveys, GNSS control surveys, and DOT engineering surveys. Mr. White has taught both static and RTK GNSS surveying classes, along with conventional and robotic surveying classes, to a broad range of clients including military personnel, DOT's, municipalities and private surveyors. Having full time professional training and support staff allows our customers to get the most out of their investment in their surveying equipment and be successful in their projects.

What you need to know about SiteVision

Trimble SiteVision is a user-friendly outdoor augmented reality system that brings data to life so you can visualize and explore complex information with unrivaled accuracy. Capabilities such as visualizing in 3D, measuring positions, collaborating in real time with easy-to-understand visualizations and reporting data to team members. SiteVision can advance any industry you're in such as Architecture, Building Construction, Utilities, Urban Transportation/Planning and more! Let's break down the specs:

- Integrated cm-accuracy GNSS with Trimble Catalyst
- Integrated Electronic Distance Measurement (EDM)
- Flexible design fits most phones (up to 8" screens)
- Waterproof and rugged
- Works hand-held or pole-mounted

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In This Issue

Trimble Authorized Distribution Partner

YOUR TRIMBLE SURVEY & MAPPING CONNECTION
IN THE CAROLINAS, DC, DE, FL, GA, MD ,TN*, VA & WV

NEW – Trimble X7 Transcends Boundaries

The innovative technology at Trimble enables professionals of all scanning levels to quickly and easily capture precise 3D scanning data to produce high-quality deliverables. With the X7, Trimble wanted to solve the 'unknown' and complexities that could arise regarding registration of data back at the office. Chris Trevillian, Marketing Manager Optical and 3D Scanning Instruments explains, "Trimble wanted their users to have more awareness at the moment of capture. Sure, to save time, that's the whole point of this part of the system. It's a real-time monitor, not only a command and control system itself, but also to gather the data, see, analyze and make sure that the registration is working in the field."

The X7 provides fast and balanced performance in both indoor and outdoor environments and is ideal for industrial/tank calibration, civil infrastructure, general survey, road intersection surveys and utilities.

For more information, contact your local sales rep.

New product alert! Spectra SP85

The Spectra SP85 is a next generation GNSS receiver that combines decades of GNSS RTK technology with revolutionary new GNSS processing.

Economical | *600 channels* | *Reliable*

Contact your local sales rep to learn more.

Upcoming Events/Conferences

FEB 27 SCSPLS Convention & Technical Conference
Columbia, SC

APR 08 TNGIC 2020 GIS Vision Annual Conference
Kingsport, TN

APR 20 VRWA Annual Conference & Technical Exposition
Roanoke, VA

APR 26 FWRC 2020
Daytona Beach, FL

APR 29 VAS 72nd Annual Convention
Virginia Beach, VA