



Stationary Battery Basics Seminar Attendee Briefing

What: The Alber Stationary Battery Basics Seminar

Seminar Course Description & Outline: Pages 2 – 4 of this document

Registration Form: Click [HERE](#)

Who Should Attend: System engineers, installers, maintenance personnel, technicians, electrical engineers, consulting engineers, equipment specification engineers, system integrators, electricians and any other persons engaged in the installation, operation, maintenance and testing stationary battery systems.

Where: [Office Evolution at Easton Town Center](#), 4200 Regent St., 2nd floor, Columbus, OH 43219. Next door to the McCormick and Schmick restaurant.

Instructor/Host: Rick Tressler, Sr. Training Engineer, Alber

Point of Contact: Rick Tressler rick.tressler@alber.com 614-841-5840.

Available Dates for this Seminar: **June 21-22, 2016 (Tuesday & Wednesday)**
REGISTRATION CUTOFF 31 MAY, 2016

September 13-14, 2016 (Tuesday & Wednesday)
REGISTRATION CUTOFF 23 AUGUST, 2016

Duration: Two days per seminar

Start/end time: 8:00 a.m.-5:00 p.m. daily

GPS Users: coordinates Lat 40.05363N, Lon -82.91647W will place you in front of 4200 Regent St. Verify position on your device. Some devices require the minus (-) symbol to be entered in longitude field of your device.

Maps and Directions: Pages 6 – 12 of this document

Lodging: Refer to hotels listing on page 13



Fees and Payment: \$600 USD per person. No quantity discounts.

Credit Card Orders

Credit card information is NOT required at time of registration. Alber accounting group will contact you after the seminar to conduct the transaction.

When registering, the credit card holder's name, email address and phone number must be provided on the registration form.

Payment by Purchase Order

Purchase must be made out to:

Alber
7775 West Oakland Park Blvd
Sunrise, FL 33351

Send your purchase order to Rick Tressler at rick.tressler@alber.com

Registration Process: Complete the registration form available [HERE](#)

Refreshments: Continental breakfast and lunch will be provided by Alber each day of the seminar.

What to bring: Notebook PC if you have one. One is not required, however. We supply the rest.

Internet Access: Free wireless public access internet access is provided at the seminar

Dress: Business casual

Smoking Policy: Smoking is not permitted inside the building. Designated areas outside are available.

Travel Logistics: Plan your arrival for the day before the start of the seminar. Class is scheduled for all day (8-5) both days. Plan your departures accordingly. ***Day 2 typically ends at 4:30-5:00 p.m.***

Stationary Battery Basics Seminar

Course Description

Alber has been conducting its well-known seminar, *Stationary Battery Basics* for many years and has helped thousands of people learn more about their batteries so they can improve the reliability of their mission critical systems. The seminar begins with the fundamentals of batteries and explains their electrochemical characteristics in a way that makes the learning process easy. The kinds of batteries employed in industrial and commercial applications are covered, along with an introduction into battery system installation requirements. Day two continues with installation, and then moves into the requirements for proper maintenance processes and procedures. As the seminar progresses, a discussion on capacity testing is presented that takes the mystery out of discharge testing batteries and details how industry standards apply directly to proper testing procedures. The seminar wraps up day two with a discussion about battery ohmic testing. Measurement of battery internal resistance, conductance and impedance is discussed and the basics of how ohmic measurements are made. In total, five chapters are presented over the two day period.

Our instructor possesses extensive knowledge and experience in a variety of applications and can usually answer questions, help students with application-specific problems that ultimately help them to improve system reliability. Our instructor has over 35 years experience in the industrial power and battery industry.

Alber offers seminars to the general public throughout the year. These are conducted in Columbus, Ohio in a modern business meeting facility. Attendees make their own travel arrangements and stay close by the meeting venue.

Tuition is \$600 per person. A continental breakfast and lunch is provided each day at public seminars. Enroll today!

Each student is provided with a complete set of handout materials on CD, a pocket battery dictionary of terminology, pen and hat. Certificates of attendance are provided as PDF documents to the site point of contact within 30 days of the seminar.

For additional information about this and other training and seminar opportunities, contact Rick Tressler at 614.841.5840 or email Rick at rick.tressler@alber.com.

Stationary Battery Basics Seminar Course Outline

Chapter 1 – Day 1

- Battery Applications
- Electrochemistry Basics
- Types of Plates and Grid Materials
- Battery Selection Criteria
- Battery Construction
- Understanding Battery Life
- Voltage and Current Terminology
- Premature Battery Failure and Causes
- Major Failure Modes
- Battery Racks and Stands

Chapter 2 – Day 2

- Safety & Training Note
- IEEE Stationary Battery Committee
- Delivery inspection
- Storage considerations
- Spill containment
- Assembly and loading of racks
- Cell handling techniques
- Making cell-to-cell connections

Chapter 2 – Day 2

- Interisle, interrack and intertier cable groups
- Verifying connection integrity
- Commissioning
- Documentation
- Battery cleaning
- Acceptance testing

Chapter 3 – Day 2

- Goals of a Maintenance Program
- Specific Recommendations
- IEEE Standards
- What Needs to be Done
- Safety
- Battery Disconnects

Chapter 3 - Continued from previous page

- Conditions Affecting Service Life
- Failure Modes
- Preventing System Failures
- Flooded Battery Visual Inspection Criteria
- Internal Resistance Measurements Case Study
- Failures of Monoblock Batteries and Resistance
- Water Additions
- Benefits of Proper Maintenance
- Example Battery Readings in Interpretation

Chapter 4 – Day 2

- Defining Capacity Tests
- Why Testing is Needed
- Who Recommends Testing
- Defining Battery Capacity
- Understanding the Electrical Ratings of a Battery
- Types of Tests
- Equipment Requirements
- How the Testing Process Works
- Calculation of Battery Capacity

Chapter 5 – Day 2

- Understanding Ohmic Measurements
- Schematic of a Lead-Acid Cell
- Measurement Methods
- Detection of Cell Problems
- Ohmic Problems and Cell Performance
- Metallic vs. Electrochemical Problems
- Problem Evaluation
- Measurement Intervals

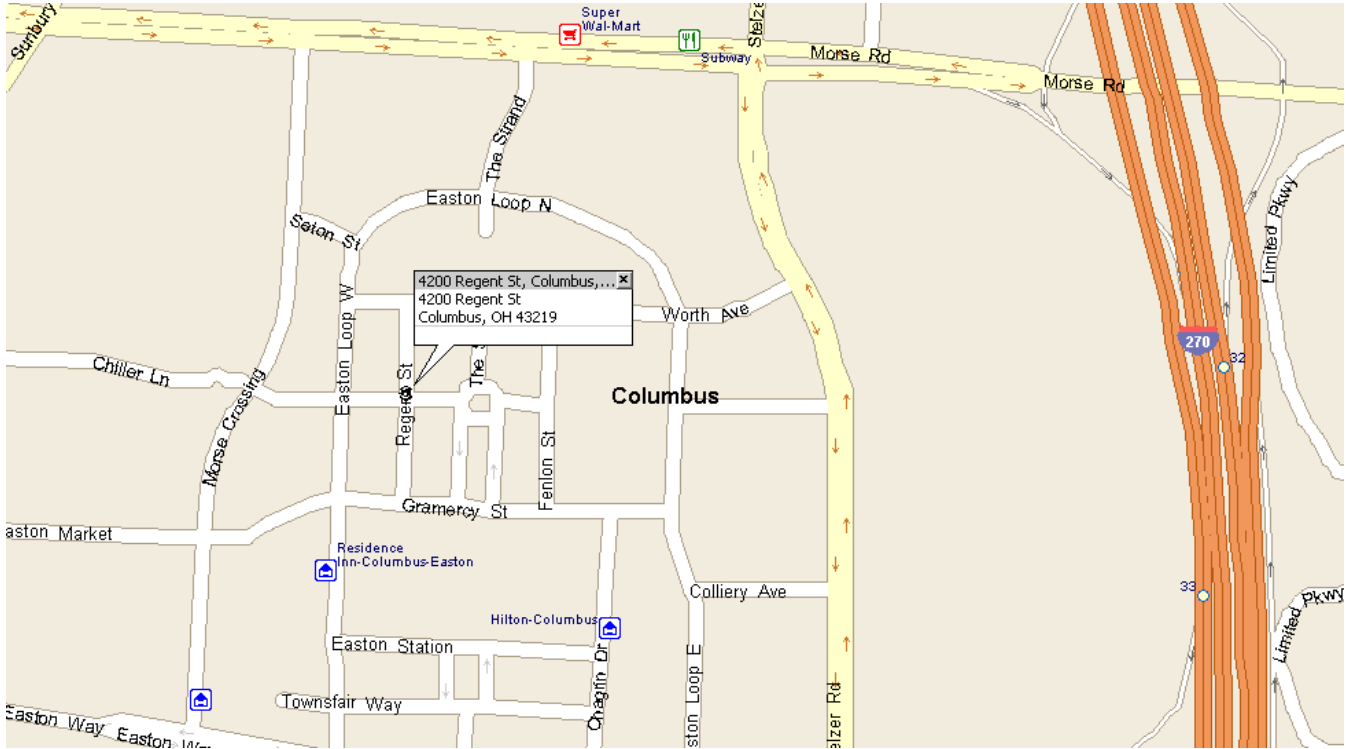
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Overall Picture of the Area Seminar Located at 4200 Regent St

GPS: 40.05363N, -82.91647W

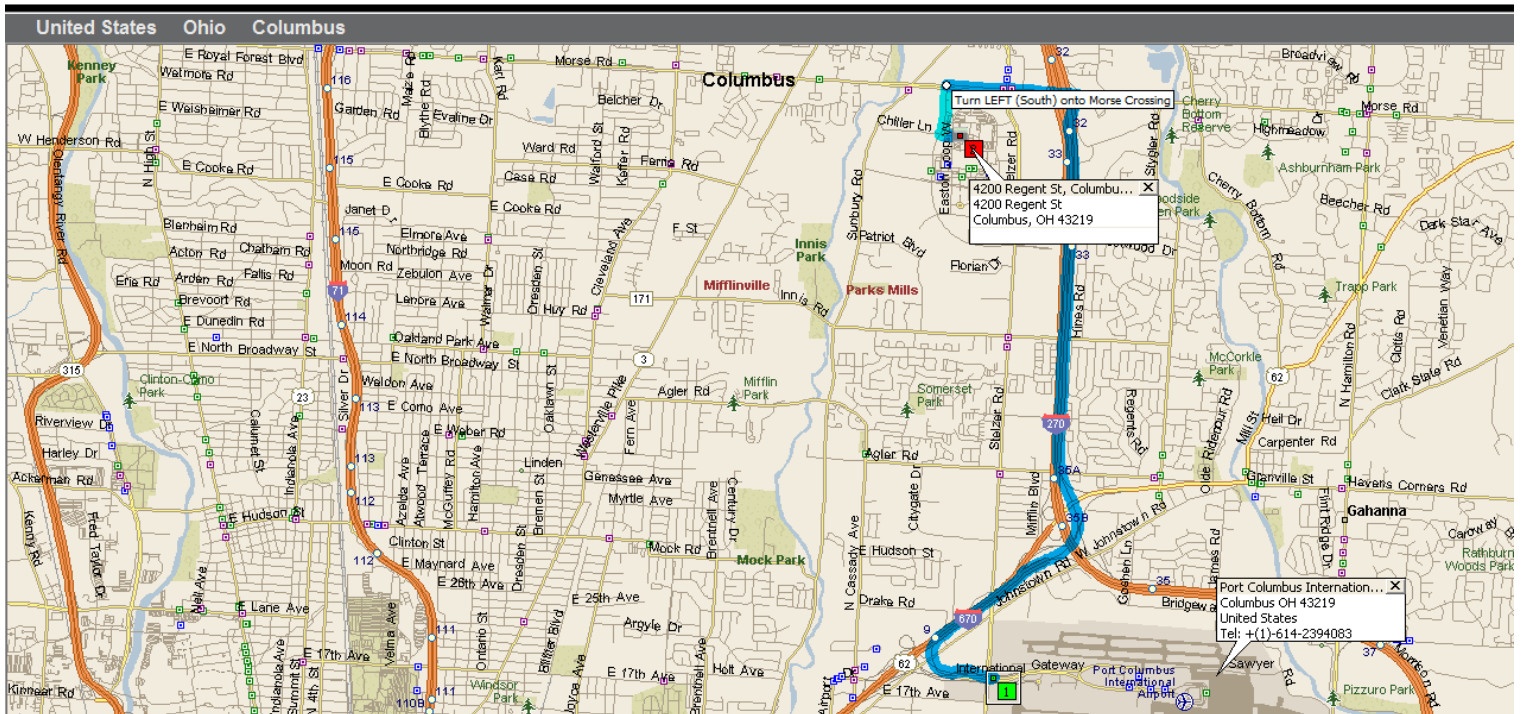


Detailed Map of Area Immediate Around the Seminar Location



Columbus Airport to 4200 Regent Street – 6 Miles

Time	Mile	Instruction	For	Toward
Summary: 6.2 miles (8 minutes)				
Construction information for your route is out of date. Click this line to update.				
9:00 AM	0.0	Depart near East Columbus on International Gate 32 yards		
9:00 AM	0.1	Take Ramp (RIGHT) onto I-670 [US-62]	1.5 mi	I-670 E / US-62 E / I-270
9:01 AM	1.5	Turn LEFT onto Ramp	0.2 mi	US-62 E / I-270 N / Gahanna / Cleveland
9:01 AM	1.8	Take Ramp (LEFT) onto I-270	2.8 mi	I-270 N / Cleveland
9:04 AM	4.6	At exit 32, turn RIGHT onto Ramp	0.3 mi	Morse Rd
9:04 AM	4.8	Turn LEFT (West) onto Morse Rd	0.9 mi	
9:05 AM	5.7	Turn LEFT (South) onto Morse Crossing	0.3 mi	
9:07 AM	6.1	Turn LEFT (East) onto New Bond St	0.1 mi	
9:08 AM	6.2	Arrive 4200 Regent St, Columbus, OH 43219 [4200]		

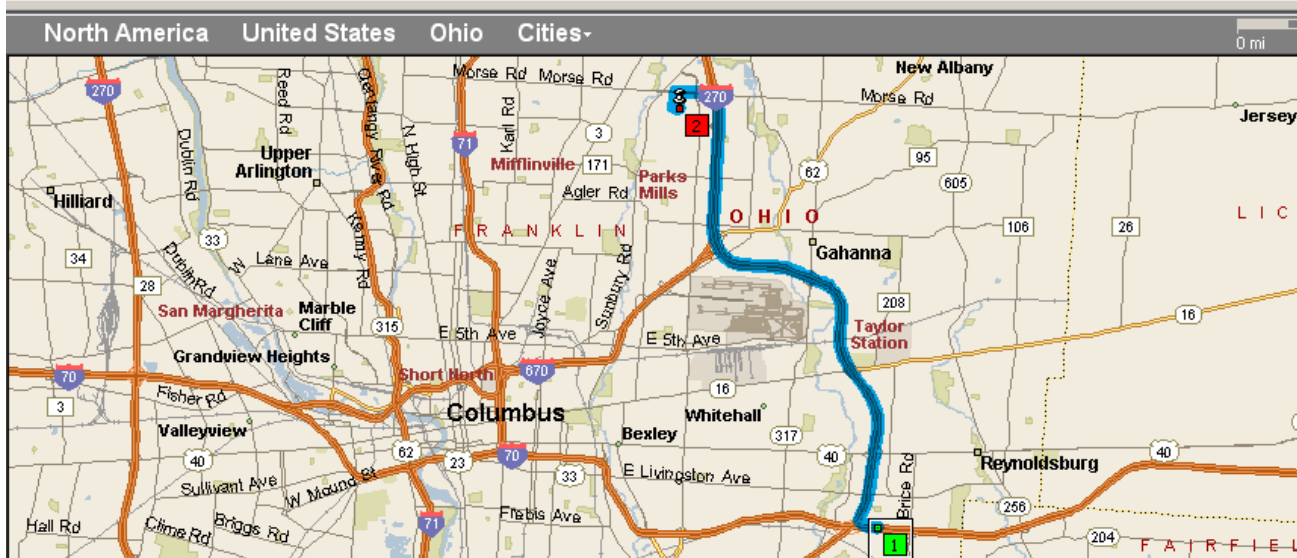


Driving in to Columbus from the East

Summary: 12.2 miles (14 minutes)

Construction information for your route is out of date. Click this line to update.

9:00 AM	0.0	1 Depart 108A-B on Ramp (West)	0.2 mi	I-270 / Cincinnati / Cleveland
9:00 AM	0.2	Keep LEFT to stay on Ramp	1.3 mi	I-270 / Cleveland
9:02 AM	1.5	Keep LEFT to stay on Ramp	0.3 mi	I-270 / US-40 / Main St / Whitehall
9:02 AM	1.8	At exit 41A, take Ramp (LEFT) onto I-270	8.8 mi	
9:10 AM	10.6	At exit 32, turn RIGHT onto Ramp	0.3 mi	Morse Rd
9:11 AM	10.8	Turn LEFT (West) onto Morse Rd	0.9 mi	
9:12 AM	11.7	Turn LEFT (South) onto Morse Crossing	0.3 mi	
9:13 AM	12.1	Turn LEFT (East) onto New Bond St	0.1 mi	
9:14 AM	12.2	2 Arrive 4200 Regent St, Columbus, OH 43219 [4200 Requer		

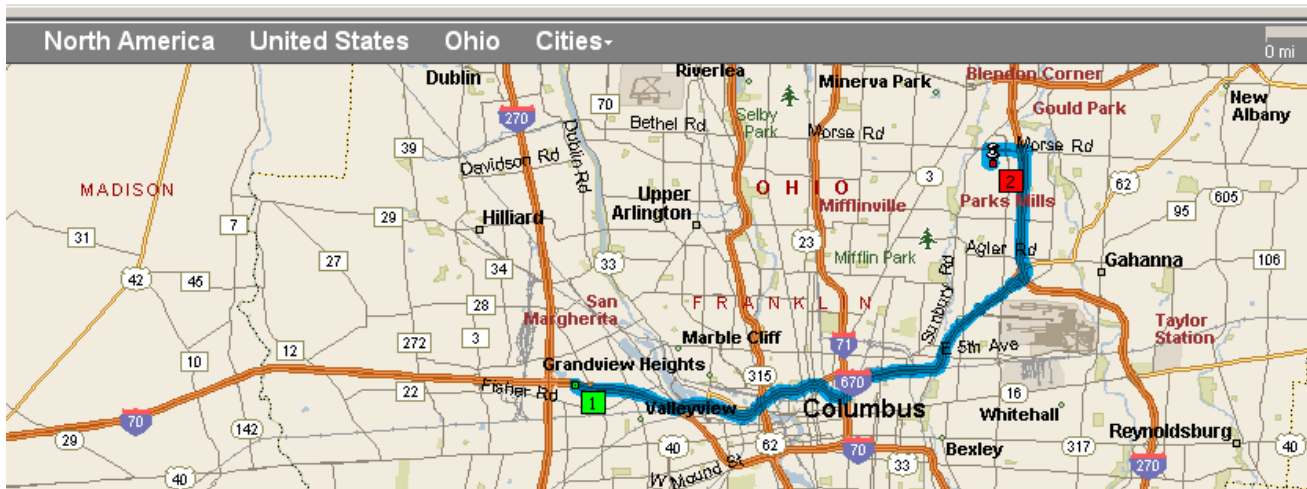


Driving in to Columbus from the West

Summary: 17.3 miles (19 minutes)

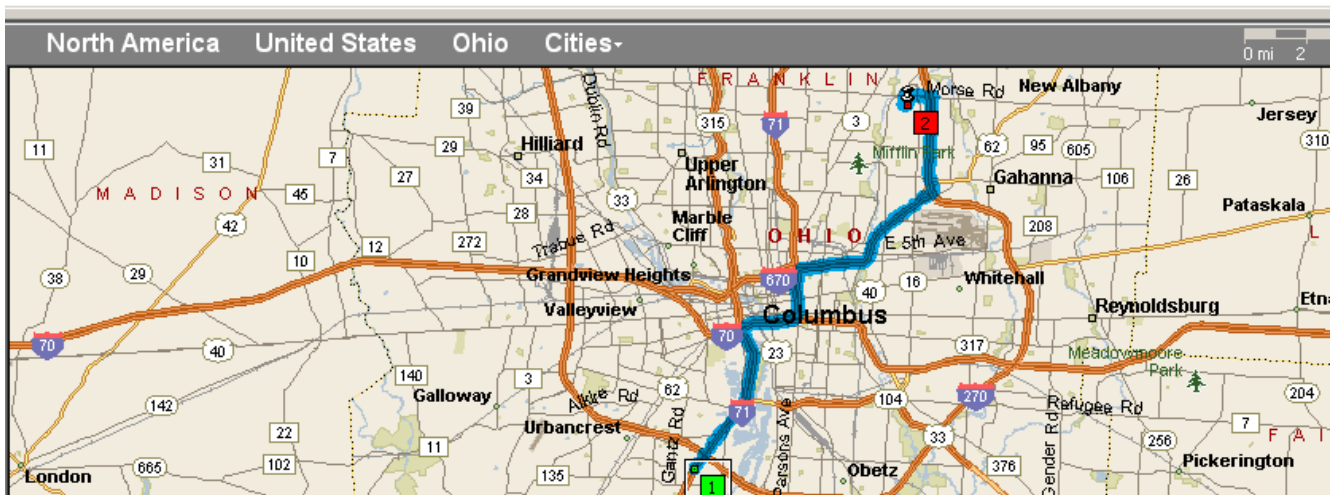
Construction information for your route is out of date. Click this line to update.

9:00 AM	0.0	1 Depart I-70, Columbus, OH 43228 on Local road(s) (South	174 yds
9:00 AM	0.1	Bear LEFT (East) onto Interchange Rd	0.4 mi
9:01 AM	0.5	Take Ramp onto I-70	1.8 mi I-70 / Columbus
9:03 AM	2.4	Keep LEFT onto I-670	10.3 mi I-670 / Airport
9:13 AM	12.7	Turn LEFT onto Ramp	0.2 mi I-270 / US-62 / Cleveland / Gahanna
9:13 AM	12.9	Take Ramp (LEFT) onto I-270	2.8 mi I-270 / Cleveland
9:16 AM	15.7	At exit 32, turn RIGHT onto Ramp	0.3 mi Morse Rd
9:16 AM	16.0	Turn LEFT (West) onto Morse Rd	0.9 mi
9:17 AM	16.9	Turn LEFT (South) onto Morse Crossing	0.3 mi
9:19 AM	17.2	Turn LEFT (East) onto New Bond St	0.1 mi
9:19 AM	17.3	2 Arrive 4200 Regent St, Columbus, OH 43219 [4200 Reger	



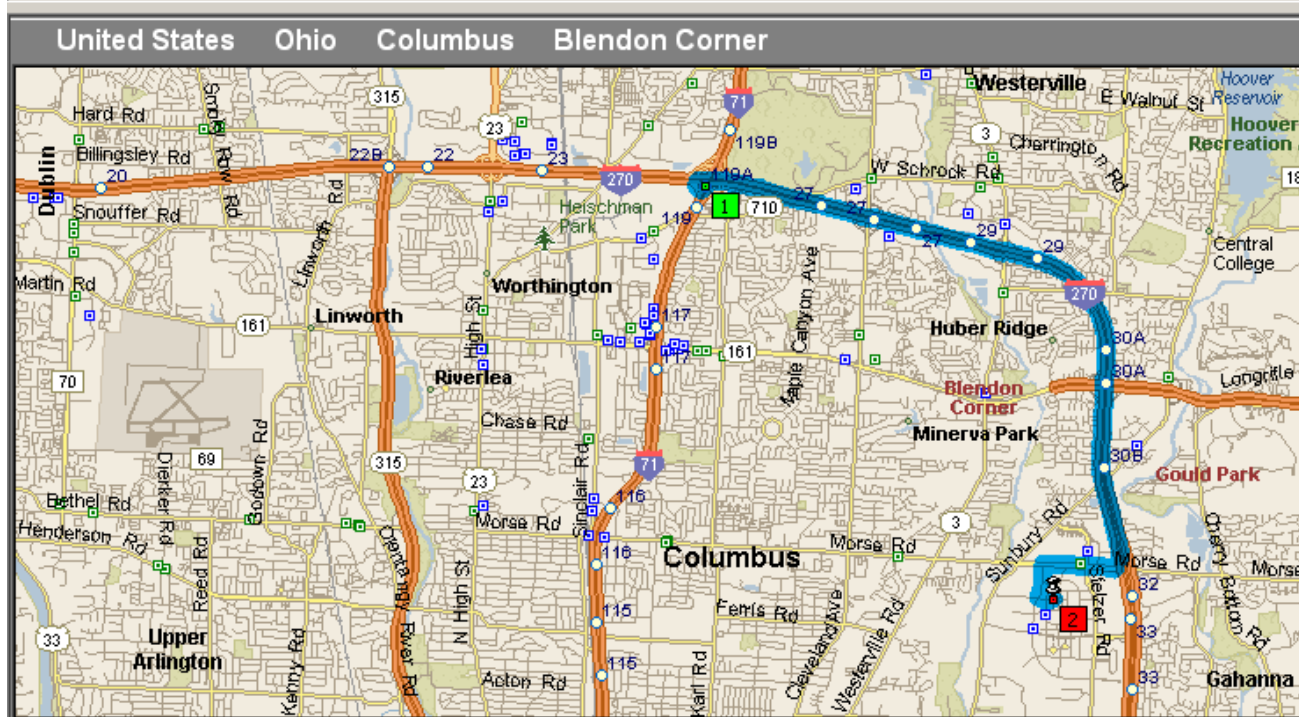
Driving Into Columbus from the South

Time	Mile	Instruction	For	Toward
Construction information for your route is out of date. Click this line to update.				
9:00 AM	0.0	1 Depart 101 on I-71 (North)	4.8 mi	
9:04 AM	4.8	Take Ramp (RIGHT) onto I-70 [I-71]	1.8 mi	I-70 / I-71 / Cleveland / Wheeling
9:06 AM	6.7	At exit 101A, take Ramp (LEFT) onto I-71	1.3 mi	I-71 / Cleveland
9:07 AM	7.9	At exit 109B, turn RIGHT onto Ramp	164 yds	I-670 / Airport
9:07 AM	8.0	Take Ramp (LEFT) onto I-670	5.4 mi	I-670 / Airport
9:12 AM	13.5	Turn LEFT onto Ramp	0.2 mi	I-270 / US-62 / Cleveland / Gahanna
9:12 AM	13.7	Take Ramp (LEFT) onto I-270	2.8 mi	I-270 / Cleveland
9:15 AM	16.5	At exit 32, turn RIGHT onto Ramp	0.3 mi	Morse Rd
9:16 AM	16.8	Turn LEFT (West) onto Morse Rd	0.9 mi	
9:17 AM	17.7	Turn LEFT (South) onto Morse Crossing	0.3 mi	
9:18 AM	18.0	Turn LEFT (East) onto New Bond St	0.1 mi	
9:19 AM	18.1	2 Arrive 4200 Regent St, Columbus, OH 43219 [4200 Reger		



Driving Into Columbus from the North

Time	Mile	Instruction	For	Toward
Summary: 7.8 miles (8 minutes)				
Construction information for your route is out of date. Click this line to update.				
9:00 AM	0.0	1 Depart 119A on Ramp (South-West)	0.2 mi	I-270 / Wheeling
9:00 AM	0.2	Merge onto I-270	6.2 mi	
9:05 AM	6.4	At exit 32, turn RIGHT onto Ramp	0.3 mi	Morse Rd
9:06 AM	6.7	Turn RIGHT (North-West) onto Morse Rd	0.7 mi	
9:06 AM	7.4	Turn LEFT (South) onto Morse Crossing	0.3 mi	
9:07 AM	7.7	Turn LEFT (East) onto New Bond St	0.1 mi	
9:08 AM	7.8	2 Arrive 4200 Regent St, Columbus, OH 43219 [4200 Reger		





Hotels Near Seminar Venue

All three of these hotels report to offer free airport shuttles. Contact the hotel to verify. These hotels are not the lowest cost, but are convenient to the seminar. Alber does not have negotiated rates with any of the hotels.

The Hilton Columbus (0.5 mi.)

On-site at Easton Town Center
3900 Chagrin Drive
Telephone: (614) 414-5000

Residence Inn at Easton (0.3 mi)

On-site at Easton Town Center
3999 Easton Loop West
Telephone: (614) 414-1000

Courtyard by Marriott Columbus - Easton (0.2 mi)

On-site at Easton Town Center
3900 Morse Crossing
Telephone: (614) 416-8000

Other Hotels

Courtyard Port Columbus International Airport

<http://www.marriott.com/hotels/travel/cmhap-courtyard-columbus-airport/>

2901 Airport Dr
Columbus OH 43219
(614) 475-8530

Fairfield Inn & Suites Columbus Airport

<https://www.marriott.com/hotels/travel/cmhaf-fairfield-inn-and-suites-columbus-airport/>

4300 International Gateway
Columbus, OH 43219
614-237-2100

Country Inn

<http://www.countryinns.com/>

2900 Airport Dr
Columbus OH 43219
(614) 478-2900

Staybridge Suites Port Columbus Airport

<http://www.ichotelsgroup.com/h/d/sb/1/en/home>

2890 Airport Dr
Columbus OH 43219
(614) 473-9888

Click [here](#) for more hotels near the airport.