Runway 5 Ground Obstruction Removal – A 10-Year Journey

Yeager Airport (CRW)

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Speakers

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  ➔ BS in Civil Engineering from The Pennsylvania State University
  ➔ 26 Years with L.R. Kimball
  ➔ 20 Years in Aviation
### Yeager Airport (CRW)

- Largest Airport in West Virginia
- Named for Chuck Yeager from Myra, WV
- 20 Daily Flights to 11 Destinations
  - American to Dallas, TX
  - Delta to Atlanta, GA and Detroit, MI
  - Spirit to Myrtle Beach, SC and Fort Lauderdale, FL
  - United to Chicago, IL; Houston, TX; and Washington, DC (Dulles)
  - US Airways to Charlotte, NC; Philadelphia, PA; and Washington, DC (Reagan)
- 250,509 Enplanements in 2014
- Home to the WV Air National Guard
- Single Runway (5-23) 6,802’ x 150’
- ILS Approach to Runway 23 with CAT 1 Minimums

### Runway 5 Ground Obstruction Removal

- **Background and Timeline**
  - A Preliminary Obstruction Study was completed by L.R. Kimball in 2005
  - Review of Runway End (Threshold)
    - Siting Surfaces identified Obstructions to the 40:1 Departure Surface for R/W 23
  - Most of the southern half of the trapezoid was affected
  - Obstruction was located 4,100’ from the R/W 5 Threshold
  - Average Ground Obstruction was 50’+
  - Max. Ground Obstruction was up to 120’
  - Additional Obstructions included trees and houses
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Runway 23 Departure Surface Information

More Background Information

- The obstruction affects departures from Runway 23
  - Limits aircraft takeoff weight during summer months
  - Primarily affects long routes such as Houston and Dallas
  - On some summer days, each flight may lose 3 to 4 seats due to weight restrictions as a result of the departure climb gradient

- The obstruction also affects approaches to Runway 5
  - Current minimums for the R/W 5 ILS are 500' HAT and 1-1/2 Mile Visibility
  - As a result, during poor weather conditions, Runway is not available for landing
  - Removing the obstruction can potentially reduce the minimums to 200’ HAT and 3/4-Mile Visibility
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- Planning
  - Obstruction would have to be removed to improve both departures from Runway 23 and approaches to Runway 5
  - Affected area was a residential area known as the Coal Branch Neighborhood between the Airport and downtown Charleston

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- Coal Branch Neighborhood Subdivision Plan
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- **Environmental**
  - Completed a full Environmental Assessment in 2006/2007
  - Area of Impact was identified
    - Graded area
    - Buffer zone
  - Wetlands and streams were identified
  - Indiana Bat Habitat was identified

- **Land Acquisition**
  - Airport Authority started the Land Acquisition process in 2008
  - O.R. Colan was brought in to manage land acquisition
  - Total land acquired was nearly 39 acres
    - Included 60 separate properties, 9 residences and 3.8 acres of City of Charleston Streets
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→ Land Acquisition
  → Vast majority of the land in Coal Branch was owned by Corotoman, Inc, a local developer
  → The Airport Authority negotiated a Land-Use Agreement with Corotoman
  → A total of 10 properties were acquired through eminent domain
  → Last property was acquired in early 2013
  → Total Value of Land Acquisition = $958,400
  → The Airport Authority demolished the homes after acquisition

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→ Property Acquisition Summary
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→ Design
  → Site was primarily the top of a hill with a ridge running through the middle
  → Site was to be cut to 10’ below the departure surface elevation
  → Depth of cut varied from 15’ to 95’
  → Site was to be graded to drain away from residential area
  → Two sedimentation/detention basins were constructed
  → Rock was cut to 2’ below finish grade
  → 18” of subsoil and 6” of topsoil was placed on finished rock
  → Total Earthwork = 1,350,000 CY

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→ Design (Continued)
  → It was decided to allow the Contractor to identify a waste area
  → Several potential sites were located within a mile of the site
  → Access to the site was a major issue
    → City streets are very narrow and steep
    → Residences were located very close to streets
    → An easement was negotiated with an adjacent landowner to provide access from Deitrick Boulevard (Private Street)
    → $300,000 was set aside for Deitrick Boulevard maintenance
  → Former streets would be available for Contractor vehicle access
  → An allowance was included for hazardous material disposal
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→ Overall Site Plan

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→ Obstruction Removal Grading Plan
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Access Road Plan

Runway 5 Ground Obstruction Removal

Public Involvement

- Significant blasting was required for project
- Airport had major blasting issues during previous projects
- Blasting would occur within 100’ of residences
- Airport used local media to inform the public
  - TV and Radio interviews
  - Encouraged video of site
- A public meeting was held at St. Stephens Church in Coal Branch
  - City Councilman was invited to participate
  - Approximately 50 people attended
  - Most people were overwhelmingly supportive
  - Additional residences were added to Pre-Blast Survey
- A Local Liaison was established by the Airport
  - Blasting complaint form was provided on Airport website
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→ Phase 1 Construction – Tree Removal (March 2013)
  → Work included access road construction, clearing for 24 acres of trees and 6,500’ of 36” super silt fence installation
  → Contractor was required to remove trees and chip all limbs
  → Contractor was S&E Clearing and Hydroseeding of Pineville, WV
  → Contract Value = $455,000

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→ Tree Removal Plan
Runway 5 Ground Obstruction Removal

- Phase 2 Construction – Earthwork (October 2013-Present)
  - Work included permanent access road construction, all grading, stormwater management and erosion and sedimentation controls
  - Contractor was responsible for identifying, negotiating, permitting and constructing a waste area
  - Contractor is Central Contracting, Inc. from St. Albans, WV
  - Contract Value = $13,245,310.88

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- Pre-Blast Survey
  - Contractor was required to hire a Blasting Subcontractor and a Seismic Subcontractor to oversee and monitor blasting
  - Dyno Nobel from Charleston handled all blasting
  - Sauls Seismic, Inc. from Logan, WV provided the Pre-Blast Surveys and Seismic Monitoring
  - A Pre-Blast Survey Area was established within 1,000’ of the site perimeter
  - Additional structures were added in areas of prior concern from previous projects
  - All structures within the area were given an ID number and were included in the Survey
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→ Pre-Blast Survey Plan

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→ Construction Information
  → Contract time is 600 continuous calendar days
  → No stop of contract time for weather
  → Construction started on September 23, 2013
  → Contractor was required to construct an access road from Deitrick Boulevard to Twilight Drive
  → Blasting was initially scheduled to start January 6, 2014, but was delayed due to weather.
  → On January 9, 2014, the Freedom Industries chemical spill occurred immediately downstream of the Airport and the Site
  → First blast occurred the week of February 17, 2014
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- **Waste Area**
  - An adjacent valley was identified by the Contractor as the preferred waste area.
  - Property was primarily owned by Corotoman, Inc. with an additional 13+ acres owned by the Nutter Family.
  - The Contractor negotiated a fee with Corotoman, Inc. for the placement of fill on that property.
  - The Kanawha County Economic Development Authority purchased the Nutter Farm for use as a Waste Area.
  - Approximately 125’ of fill will be placed in the valley.
  - Waste area will result in a 12-acre graded area for future development.
  - The access road for the project will be developed as a permanent access to both the cut and fill sites.

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- **Earthwork Project Construction Photos**
  (Sept. 2013 to Feb. 2014)

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→ Earthwork Project Construction Photos (March/April 2014)

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→ Earthwork Project Construction Photos (May/June 2014)
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→ Earthwork Project Construction Photos (July/August 2014)

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→ Earthwork Project Construction Photos (Sept./Oct. 2014)
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→ Earthwork Project Construction Photos (Nov./Dec. 2014)

Runway 5 Ground Obstruction Removal

→ Earthwork Project Summary Through December 2014
  → Total cost to date = $12,480,150
  → Total volume of material removed = 1,265,886 CY
  → All drainage installation has been completed
  → Approximately 75% of the final area has been covered with subsoil, and topsoiled and seeded
  → Approximately 180 trees have been cut around the site perimeter
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Remaining Work for Spring 2015
- Approximately 50,000 CY of material remains to be removed
- All blasting has been completed
- Airport will repave Deitrick Boulevard
- Stabilize new site access road
- Maintain all E&S measures until NPDES Permit is satisfied
- Complete final as-built survey of site
- Submit as-built survey information to FAA to determine new Runway 23 departure requirements and new Runway 5 approach minimums
- Projected final cost is approximately $250,000 below bid

Project Summary
- Total Project Duration = 10 years
- Final Cost = $17,239,500 +/-
  - Preliminary Obstruction Study = $182,500
  - Environmental Assessment = $231,000
  - Land Acquisition Fees = $303,900
  - Land Acquisition Costs = $958,400
  - Design = $438,000
  - Tree Clearing Construction = $513,200
  - Earthwork Construction = $14,612,500
Thank You

For Additional Information Contact:

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