



**Jefferson County (Colorado). IT Services  
Terrain Database – Air Photo Analysis:  
Martin Marietta ALV Test Site, 1985-1986**

Series #169

Processed by: Ronda Frazier  
Date Completed: August, 2012

Jefferson County Records Management & Archives  
3500 Illinois St., Suite 2350  
Golden, CO 80401  
(303) 271-8448  
E-mail: [archivist@Jeffco.us](mailto:archivist@Jeffco.us)  
Website: [www.jeffco.us/archives](http://www.jeffco.us/archives)

## **Overview of Records**

---

Creator: IT Services – GIS/Mapping & Media Production

Title: Terrain Database - Air Photo Analysis: Martin Marietta ALV Test Site

Dates: 1985-1986

Series Number: 169

Quantity: 1 box (DOC Ltr.), .35 cubic ft.

Arrangement: Arranged by volume number

Abstract: Report created by the U.S. Army Engineer Topographic Laboratories in support of their task producing a high-resolution, high-accuracy, experimental digital terrain data base to be used with an inertial navigation system for an Autonomous Land Vehicle (ALV). The report provides a pictorial and descriptive introduction to the terrain characteristics of the ALV test site at the Martin Marietta (Lockheed Martin's predecessor) facility in Jefferson County, Colorado. Jefferson County's Mapping Department provided the aerial photographs used for the project.

## **Administrative Information**

---

Access Restrictions: None

Use Restrictions: None

Preferred Citation: Item Description; Box number, Folder number; Jefferson County IT Services – GIS/Mapping & Media Production, Terrain Database - Air Photo Analysis: Martin Marietta ALV Test Site, 1985-1986; Series #169; Jefferson County Records Management & Archives, Golden, Colorado.

Provenance: Transferred to the Archives from IT Services' GIS/Mapping & Media Production office in June, 2012.

Related Records: None

## **History Note**

---

The U.S. Army Engineer Topographic Laboratories was tasked with producing a high resolution, high accuracy experimental digital terrain database of a 12 square kilometer test site. This database was to be used in conjunction with an inertial navigation and computer vision system for an Autonomous Land Vehicle (ALV). The database was to initially consist of six overlays including landforms, soils, surface drainage, land cover, roads, and a digital elevation model (DEM).

The purpose of this report was to provide a pictorial and descriptive introduction to the terrain characteristics of the ALV test site located at the Martin Marietta (Lockheed Martin's predecessor) facility in Jefferson County, Colorado. The field work for the report was done June 7-14, 1985 and the ALV was driven, by remote control, to the western study area on July 29, 1985.

*(Information from ScienceDirect.com – Photogrammetria – Terrain data base generation for autonomous land vehicle navigation (abstract), accessed 8/24/2012)*

## **Scope and Content Note**

---

The Terrain Database – Air Photo Analysis Report was authored by Jack N. Rinker, J. Ponder Henley, and Melvin B. Satterwhite of the U.S. Army Engineer Topographic Laboratories Research Institute, Fort Belvoir, VA. It is divided into four separate volumes. Volume I contains text and 35mm color slides of ground photography. Volume II contains black and white ground photography with stereoscopic and monoscopic views, and includes a folding stereoscope for viewing the stereoscopic imagery. Volume III contains the air photo analysis of two sets of stereotriplets that covered the study sites and provided information on landform, drainage, surficial materials (soils and rocks), land cover in terms of vegetation, and slopes. Volume IV contains the spectral reflectance measurement data.

Volume V as listed in the report's table of contents was not received.

<b>Container List</b>	<b>Box</b>	<b>Folder</b>
Volume IA: Ground Photography, 35mm Color Slides (Sep. 1985) Introduction Site Descriptions and Distance Log Slide Descriptions	1	1
Volume IB: Ground Photography, 35mm Color Slides (Sep. 1985) Site Location Aerials (East) – Air Photo 3-41 Site Location Aerials (West) – Air Photo 4-42		2
Volume IB: Ground Photography, 35mm Color Slides (cont.) Slides 1-200		3
Volume IB: Ground Photography, 35mm Color Slides (cont.) Slides 201-391		4
Volume II: Ground Photography, Black and White (Oct. 1985) Introduction Site Location Aerials – Air Photo Overprint Site Descriptions and Distance Log		5
Volume II: Ground Photography, Black and White (cont.) Stereoscopic Views Folding Stereoscope for Viewing Stereoscopic Imagery		6
Volume II: Ground Photography, Black and White (cont.) Monoscopic Views		7
Volume III: Air Photo Analysis (Nov. 1985) Introduction (Background, Procedure, Air Photo Analysis Factors, Site Descriptions and Distance Log, Viewing Stereo Photography, Reduced Scale Stereotriplet of ALV Areas)		8
Volume III: Air Photo Analysis (cont.) Air Photo Stereotriplet Sets (3-40, 41, 42) (For each Stereotriplet Set: Center Frame Positive Transparencies, Center Frame Prints and Overlays showing Drainage, Slope Areas, Road Slopes and Widths, Surface Materials, Vegetation, Site Locations, Color Slides of Vegetation Classes)		9
Volume III: Air Photo Analysis (cont.) Air Photo Stereotriplet Sets (4-41, 4-42, 4-43) (For each Stereotriplet Set: Center Frame Positive Transparencies, Center Frame Prints and Overlays showing Drainage, Slope Areas, Road Slopes and Widths, Surface Materials, Vegetation, Site Locations, Color Slides of Vegetation Classes)		10

<b>Container List</b>	<b>Box</b>	<b>Folder</b>
Volume IV: Spectral Reflectance Measurements (Jan 1986)	1	11
Introduction		
Spectral Reflectance Curves		
Stereo Photos – Vegetation Structure		
Brochure: “U.S. Army Engineer Topographic Laboratories,” no date		12