



Industrial UAVs | Made in America

Drones for the Oil & Gas Industry
2022

Agenda

About Vision Aerial

UAV Platforms

Sensor & Mounting Options

Systems for the Oil & Gas Industry

Training & Support

Questions



Rae Siebels
Marketing

Vision Aerial | About

- sUAS design & manufacturing
- Founded in 2013
- HQ in Bozeman, Montana, USA



Why Vision Aerial?

We create robotics to better humanity.



Payload Versatility



Adaptable Solutions



Superior Service

Versatility for a Variety of Applications

We know what you really care about is actionable data. That's why Vision Aerial drones are highly adaptable: to support the latest and greatest industry tech.



Public Safety



Surveying &
Mapping



Inspection



Agriculture



Research
Applications



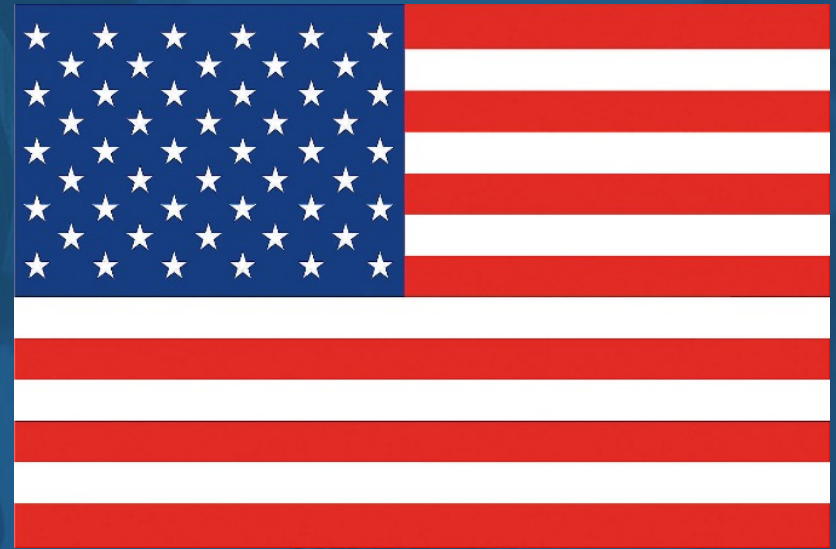
You Tell Us!



Made in America, Really!

All Vision Aerial systems are:

- Designed in America
- Tested in America
- Manufactured in America
- Assembled in America
- Serviced in America

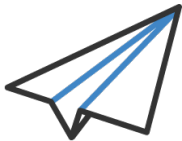


Vision Aerial | Platforms

SwitchBlade-Elite Tricopter



Fast. Stable. Easy to Fly.



Easy to Fly

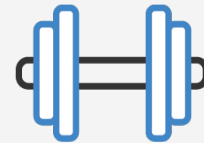


Portable

Vector Hexacopter



Extreme Versatility



Heavy Duty



Versatile

SwitchBlade-Elite tricopter



- Great for windy environments
- Easy to transport
- Under 2 minutes from case to mission

Performance Specifications:

Flight Time:* 40+ min
Max Payload:.....2.3 kg (5.0 lb)
Flight Range:†16 km (10 mi)
Weather Rating:.....IP52
Operational Temp. Range:..... 5°F to 113°F

Vector hexacopter



- Heavy Lifting Versatility
- Redundant and Stable Design
- Affordable

Performance Specifications:

Flight Time:*Up to 40 min

Max Payload:.....5 kg (11.0 lb)

Flight Range:†16 km (10 mi)

Weather Rating:.....IP52

Industry Best Practices for Safety

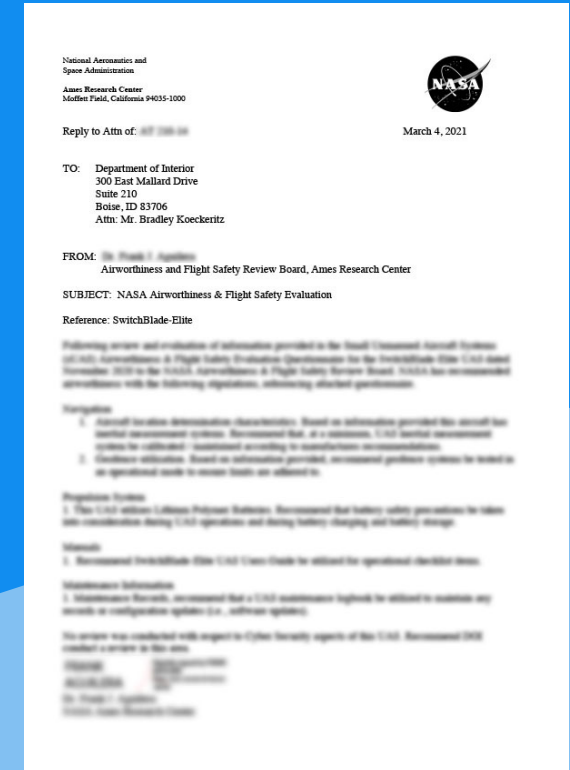
The system is designed to be resistant to bad pilotage by ensuring that the control inputs can not exceed performance limitations. Additional industry best practices for flight safety include:

Fail-Safe Systems

- Low battery: Return to Launch (RTL)
- Critically low battery automated landing
- Loss link with controller
- Geofence (Optional)

Other Safety Mechanisms

- Automated pre-flight check before system arms



NASA has recommended the SwitchBlade-Elite for airworthiness (March 4, 2021)

Data Integrity & Security

Encrypted C1, C2 & video link
AES 128 bit CTR

Data link frequency range is
2.4 GHz band

No mechanism to wirelessly offload
data without user intervention (data
lives on system until it is extracted)

Customized open source
control protocol



Payload Connection System (PCS)

Vision Aerial UAVs are designed with versatility in mind. Quickly snap any payload into place with an easy-to-use twist lock mechanism.

- Swap payloads in the field
- OK with gloves on a cold day



Payload | Options

Surveying / Mapping



Inspection



Thermal



MultiSpectral



Optical Gas Imaging



LiDAR

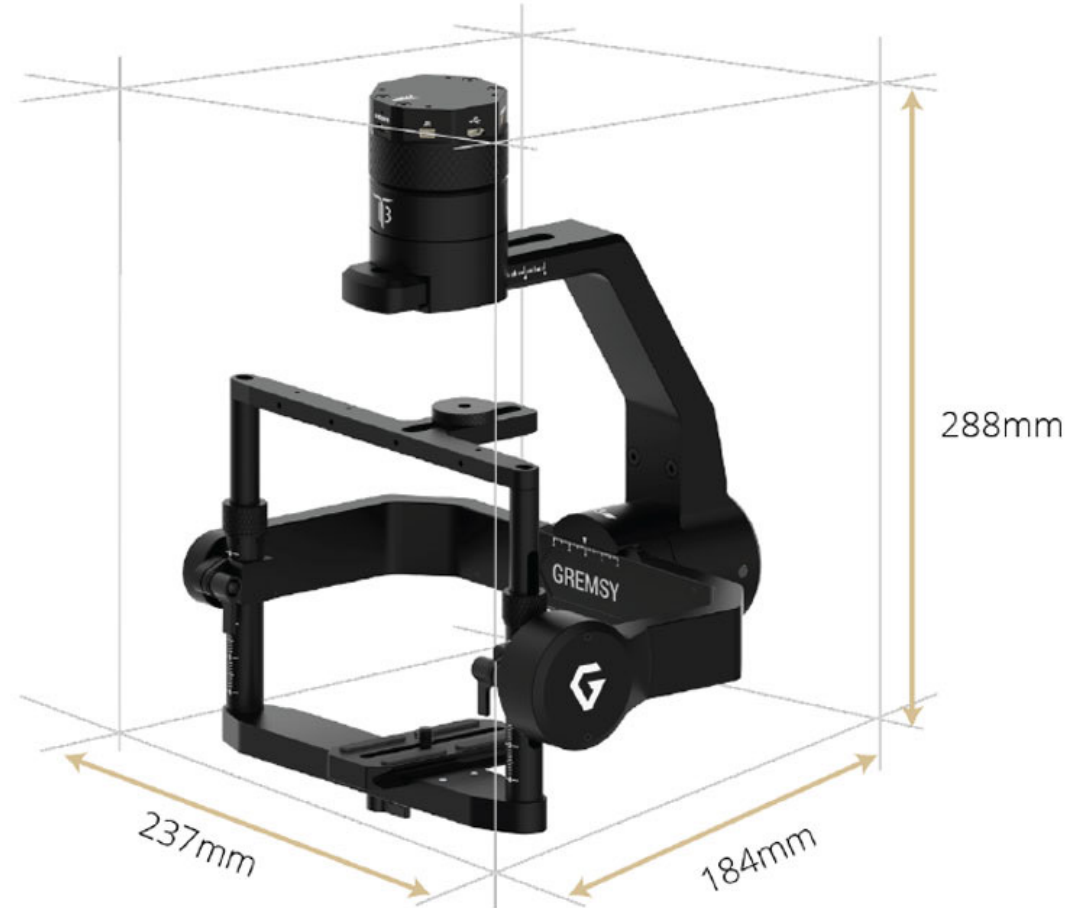


Mounting | Options

Fixed Nadir Mounting

Gimbals

- Gremsy Pixy-U
- Gremsy Pixy-F
- Gremsy Pixy-WP
- Gremsy T3
- Gremsy T7



A worker wearing a high-visibility safety vest and a hard hat is shown in profile, working on a drone. The drone is a multi-rotor aircraft with a camera mounted underneath. The worker is holding the drone, and the background is a blurred industrial or construction site. The entire image has a blue tint.

Oil & Gas Industry Drones

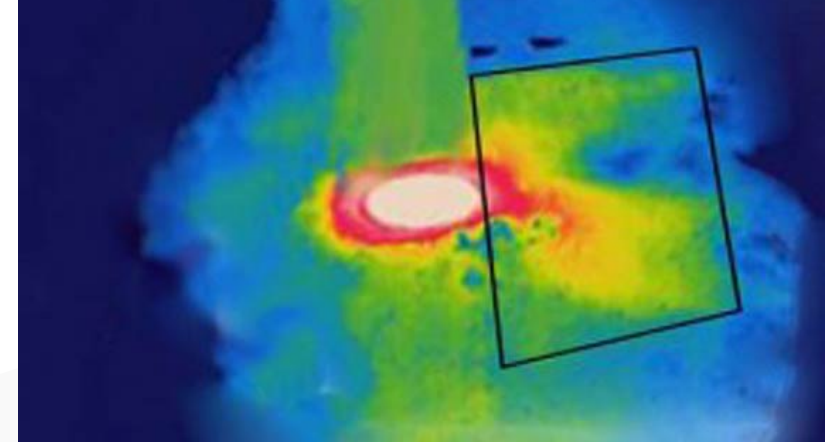
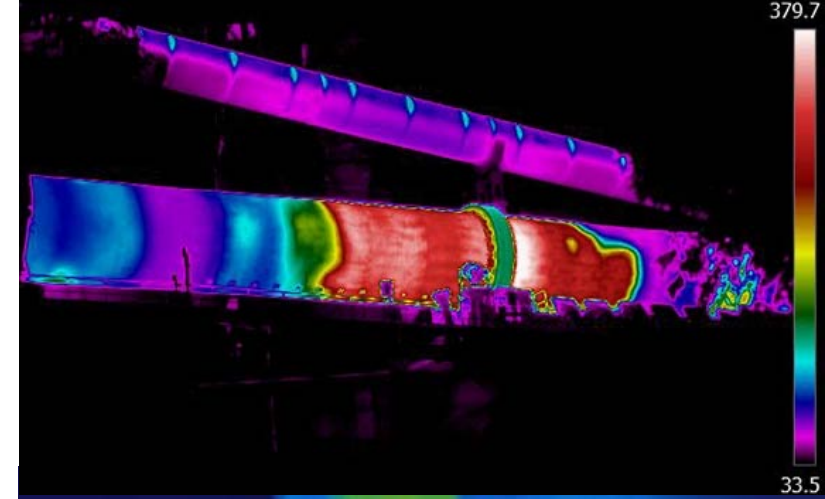
Oil & Gas | UAV Applications

Monitoring & Inspections

- Pipelines, refineries, meter stations, compressor stations, exhaust stacks, chimneys, storage tanks, etc...
- Detect gas leaks
- Look for soil erosion
- Monitor spills
- See if pipes are thinning

Planning

- Surveying and Mapping



Oil & Gas UAVs | Benefits

Improve Safety

- Workers do not need to enter dangerous environments, rappel down refinery equipment, climb towers or scaffolds
- Find problems sooner with repeat inspections

Maximize Uptime

- Don't need to shutdown a plant to perform an inspection

Reduce Costs

- Eliminate need for scaffolding or helicopter inspections
- No need to send engineers and roustabouts unless there's a problem found

Reduce Carbon Footprint

- Detect and mitigate problems earlier
- Monitor and document ongoing issues



Proposed Solution | Hexacopter



System includes:

- Waterproof Pelican Case
- Solid State Flight Batteries
- High-Capacity Dual AC Charger
- Herelink Ground Control Station



Indefinite Flight Package

Gas Detection | GIS-320

WORKSWELL UAV SERIES GIS-320

RADIOMETRIC DRONE CAMERA FOR GAS
DETECTION

200+ Detectable Gasses

Butane, Ethane, Methane, Propane, Benzene, Ethanol, Ethylbenzene, Heptane, Hexane, Isoprene, Methanol, MEK, MIBK, Octane, Pentane, 1-Pentane, Toluene, Xylene, Ethylene, Propylene plus hundreds of other hydrocarbons and Volatile Organic Compounds (VOC) and more...

Easy to Use, Records Video on SD Card

Mounting: Gremsy T7 gimbal



Services | FlightOps

Leverage our experience to help get your drone program off the ground!

- Flight Training
- Train the Trainer (Fleet Programs)
- Custom Curriculum
- Consulting
- Data Acquisition



Services | Training

Video Training: Free

Training at Vision Aerial Flight Center,
4 patrons up to 6 hours: \$1,250

On-site training, 1-day: \$6,250
Additional days at \$2,500/day



Chris Jackson

Part 107 Pilot

300+ commercial flight
hours

BA in Unmanned Systems

Services | Support

Personalized after sales support.

- Dedicated Team
- RMA Process
- Field Repairs
- Knowledge Base

Phil Diestel, Service Manager

service@visionaerial.com

(406) 518-1302



Trusted By

Some of the organizations Vision Aerial has done business with:



Questions?

(406) 333-1795

info@visionaerial.com

Vision Aerial Inc.

340 Graves Trail, Unit G

Bozeman, MT 59718

www.visionaerial.com