

An aerial photograph of a winding asphalt road with a yellow center line, cutting through a dense, lush green forest. The perspective is from directly above, looking down at the road as it curves through the trees.

DRONES: CHANGING LAWS AND HOW THEY AFFECT YOUR BUSINESS

2016 SkEye Studios



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THE NEW FRONTIER

NEW LAWS, NEW RULES, NEW OPPORTUNITIES

"Drones are an economic game-changer—one that will transform the way we do business. Popularity of drones has risen because of falling costs for sensors and other components, improved battery technology and people have seen the impossible become possible."

Gary Shapiro, president and CEO of Consumer Electronics Association



OVERVIEW

Creative Applications

Drone Advantages

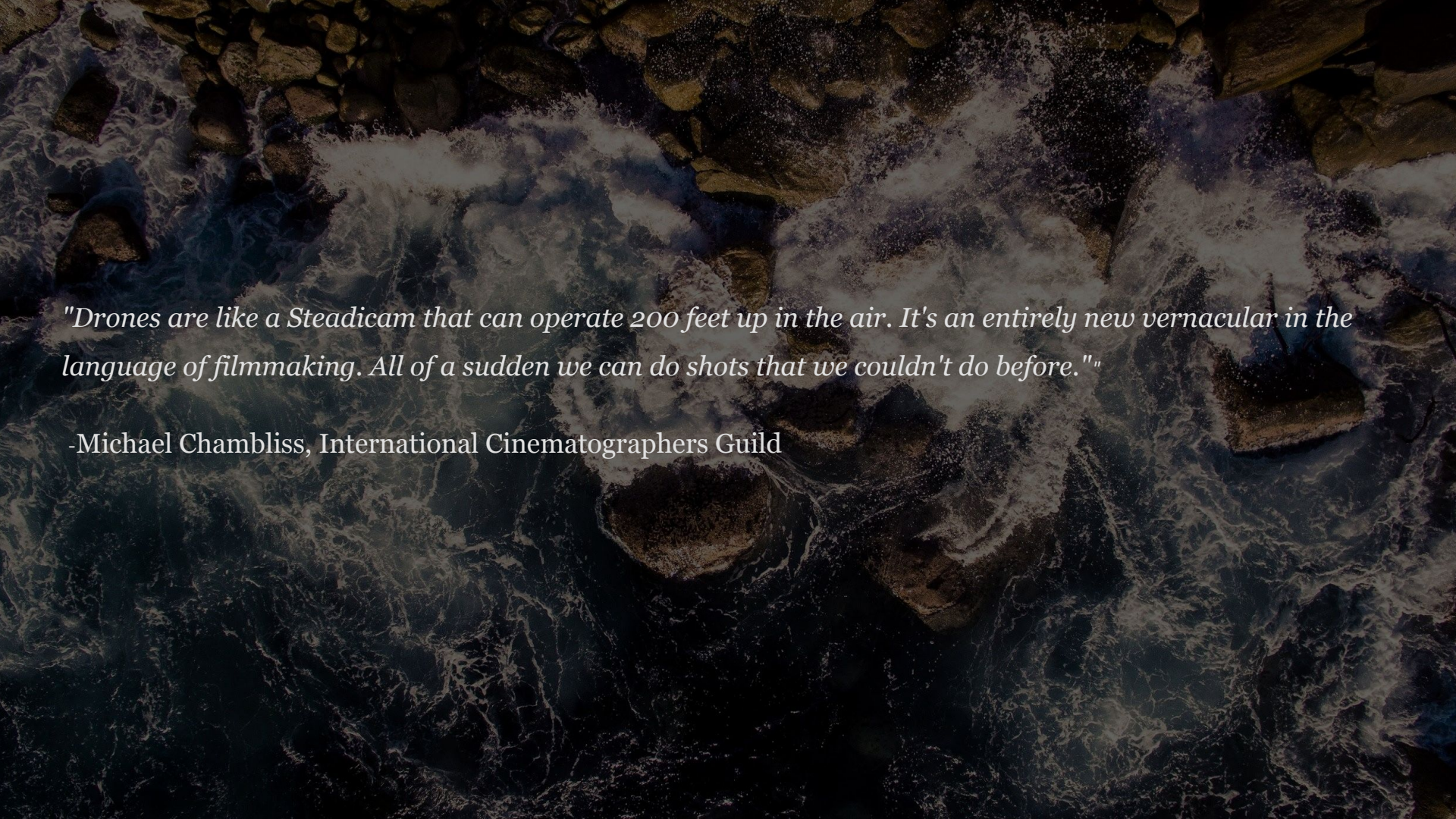
FAA Rules & Regulations

Drone Types

Drone Features

Tips For Outsourcing

Questions

An aerial, top-down view of a river flowing over a bed of dark, jagged rocks. The water is turbulent, creating white foam and rapids as it cascades over the stones. The overall tone is dark and moody, with the white foam providing a stark contrast to the deep blues and greys of the water and rocks.

"Drones are like a Steadicam that can operate 200 feet up in the air. It's an entirely new vernacular in the language of filmmaking. All of a sudden we can do shots that we couldn't do before."

-Michael Chambliss, International Cinematographers Guild

DRAMA - SWEEPING - EPIC



GAME OF THRONES PROMO

ACTION - SPEED - INTENSITY



SKYFALL INSTANBUL ROOFTOP CHASE

ESTABLISHING - SCALE - LOCATION



WOLF OF WALL STREET POOL PARTY

CREATIVE - COMMERCIAL



AUDI DRONE COMMERCIAL

DRONES VS. HELICOPTERS & CRANES

CHEAPER

SAFER

MORE NIMBLE

FASTER STARTUP &

RESET

QUIETER

TALENT-FRIENDLY

"It's easier, faster, quicker and safer. The low-flying drone shot on our Santa Clarita shoot wouldn't have been possible with a helicopter and was 10% of the cost. It took only two hours to set up the shot and 10 minutes to film the scene. From my perspective as a unit production manager, it's amazing."

Ian Woolf, co-producer & unit production manager for "Criminal Minds"

FAA PART 107 - D

- New laws introduced August 29th, 2016
- Requirements for commercial drone pilots, including a certification process for remote pilots.
- Remote pilots must pass a knowledge test (similar to a driver's license test).
- A certified pilot is required for any drone operation that is "commercial": used for any business purpose or compensation.
- Part 107 also outlines operational requirements (see next page).

FAA 333 EXEMPTION

- Previous legal framework
 - Mostly replaced by part 107 regulations.
 - More stringent requirements:
 - Processing time of roughly 6 months.
 - Part 61 pilot's license required.
 - A lawyer is usually needed to apply.
 - Advantages:
 - Able to fly drones over 55 lbs
 - Able to break VLOS (visual line of sight) requirements.
 - Possibly able to circumvent other requirements (such as flying over 400 ft, flying at night, etc)
-

107 OPERATIONAL LIMITS

- Cannot fly...
 - 400 ft above ground or any structure.
 - Within 5 miles of an airport.
 - Over non- participating people.
 - Outside of daylight hours.
 - Over national parks, power plants, military bases, prisons, and stadiums/venues during events.
- Must fly within visual line-of-sight (VLOS).
- Visibility must be 3 miles or more.
- Cannot fly inside of clouds or 2000 feet horizontally from a cloud.
- Total weight of drone must be less than 55 lbs.
- **Restrictions can be broken following special permission from the FAA (must apply for a waiver at least 90 days before operation).**



[Here](#) is the full summary of Operational limits.

DRONE TYPES

HOBBYIST



FEATURES

- Small & Lightweight
- Onboard Low-Grade Camera
- Avg 3-10 Minutes of Flight Time
- Avg <100 Meters Flight Range

BEST USED FOR

- Gifts & Toys
- Hobby Flying

POPULAR MODELS

- HUBSAN x4 H107D
- SYMA X5C Explorers

PRICE: AVG. \$100-\$300

MID-LEVEL

FEATURES

- Lightweight Quadcopter
- Onboard HD 4K Camera
- Avg 15-25 Minutes of Flight Time
- Avg <3 Miles Flight Range

BEST USED FOR

- Real Estate, Property, College Tours
- Construction Progress
- Event Videography

POPULAR MODELS

- DJI Phantom 4
- DJI Inspire 1 Pro

PRICE: AVG. \$600-\$3,000



PROFESSIONAL

FEATURES

- Heavy Duty Octocopter
- Gimbal Attachment for Camera
- Avg 15-25 Minutes of Flight Time
- Avg <5 Miles Flight Range

BEST USED FOR

- Film & TV
- Broadcast Commercials

POPULAR MODELS

- Freefly
- Alta 8

PRICE: AVG. \$4000-\$50,000



DJI Phantom 1

Technological Advances



DJI Mavik Pro

For \$1000...

September 6th, 2013

\$700 - DJI Phantom 1

- .62 miles
- 22 mph
- 13-minute flight time
- No Camera
- GPS assistance

\$300 - GoPro Hero 3

- 2k Video
- No Stabilization

3 years



October 1, 2016

- \$999 - DJI Mavik
- 4.3 miles transmission range.
- 40mph
- 27-minute flight time
- 4k Video,
- Stabilized
- Obstacle Avoidance
- Vision positioning precise positioning indoor and outdoors.
- ActiveTrack, TapFly and other smart features "make professional looking video effortless."

STANDARD DRONE FEATURES

TO CONSIDER BEFORE BUYING OR CONTRACTING OUT

FLIGHT TIME

Drones vary considerably in their ability to stay in the air on a single battery charge. This can affect scheduling & budgets and is especially important on larger productions.

SPEED

A drone's maximum speed (even average models can reach close to 50 mph) can greatly add to creative and commercial uses, especially for high energy shoots and sports videography.

RANGE

Drones have a specific range, both upwards and outwards, that it can travel without losing contact to the controller. A fact to consider in remote and complicated locations.

ON BOARD CAMERA

Many mid-range professional drones have built-in cameras that can shoot both 4K and raw footage with variable camera settings. Quality of footage should be high on the list of things to consider.

PAYLOAD CAPACITY

A drone's ability to carry loads and the attached gimbal, can limit or add to its ability to carry professional high-level cameras/lenses that can produce cinema level images.

PILOT TEAM

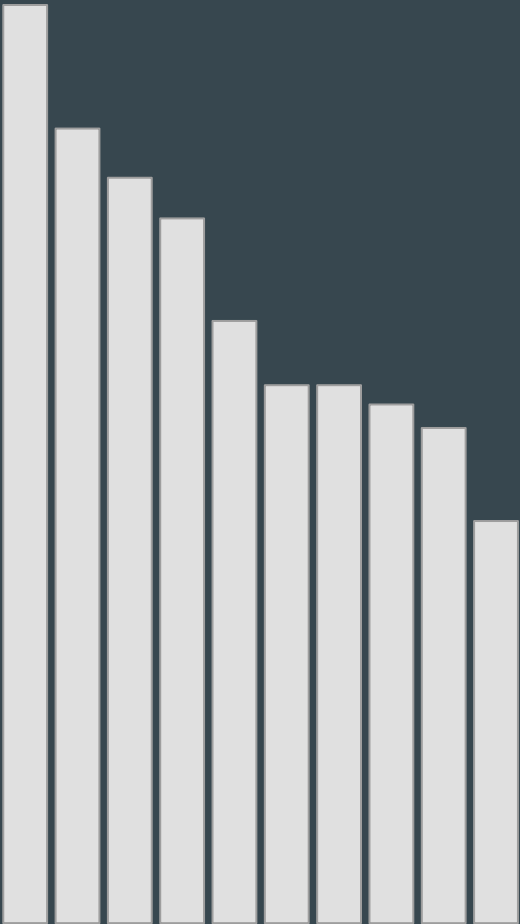
Many drones are built to be easily flown by one pilot, but more complicated setups can produce better results with a pilot and a camera operator. This of course effects budget and crew.

BEYOND THE STANDARD FEATURES

GETTING CREATIVE

- Live Streaming
- 360 Degree Aerial Videography
- Topographical Mapping & 3D Modeling
- GPS Integration
- Smart Features: Follow-Me Feature, Way Points, Return To Home, Point of Interest

TOP 10 OPERATIONAL INDUSTRIES USING COMMERCIALY LICENSED DRONES



1. REAL ESTATE
2. AERIAL SURVEYING
3. AERIAL PHOTOGRAPHY
4. AGRICULTURE
5. AERIAL INSPECTION
6. CONSTRUCTION
7. INFRASTRUCTURE INSPECTION
8. UTILITY INSPECTION
9. FILM & TV
10. ENVIRONMENTAL

Tips for outsourcing drone work:

What to look for in a drone pilot:

- Certification
- Insurance
- Reel or previous work that is high quality
 - [Here](#) is ours
- Flight log (amount of hours logged)
- Safety policy





Questions?