

# Trains, Planes, and Drones Market Shares, Strategies, and Forecasts, Worldwide, 2015-2021

<https://marketpublishers.com/r/TDAD0B234BBEN.html>

Date: July 2015

Pages: 1014

Price: US\$ 4,000.00 (Single User License)

ID: TDAD0B234BBEN

## Abstracts

LEXINGTON, Massachusetts (July 30, 2015) – WinterGreen Research announces that it has published a new study *Drones: Trains, Planes, and Drones Use Remote Control: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021*. Next generation drones leverage better technology, launching from ships anywhere. The technology is evolving better navigation, softer landings, longer flights, better ability to carry different payloads.

The drones are able to achieve military and commercial tasks. They have been evolving airfreight delivery systems capability. They are used for surveillance, reconnaissance and intelligence missions. They do 3D mapping, commercial pipeline observation, border patrol, package delivery, photography, and agriculture. These are more energy efficient, last longer and have a significantly lower cost of operation than manned aircraft.

Drone technology extends everywhere, even to airline control towers. Drones evolving technology is extending uses, even evolving to trains and planes. The use of Drone technology to control moving devices remotely extends the notion of drones, creating a larger potential drone market. Military drones will make every navy ship an aircraft carrier. They can be launched from anywhere, not needing an airfield.

In the recent Germanwings airline crash, the control tower knew for 10 minutes that the airliner was set to destruct with all the passengers on board but the controllers in the tower were powerless to help. This crash represents an instance of how security systems and sensors might be used from a control tower to effect remote control in response to a security issue.

Headlines like “Amtrak train derailed going 106 M.P.H. on sharp curve; at least 9 killed”, represent another instance of where remote control of a transport unit would improve safety in train operations. Remote monitoring, and remote piloting offer guidelines on the commercial use of unmanned aircraft systems . Drone commercial uses will provide billions of dollars in economic growth.

Drone unmanned aerial vehicle (UAV) technology has reached a level of maturity that has put these systems at the forefront of aerospace manufacturing. Procurement around the world is adapting to drone availability. Use in the global war on terrorism has demonstrated unique usefulness for military intelligence, surveillance, reconnaissance and communications relay.

Relatively low-cost of drones make them work for civilian applications. Law enforcement, mapping, video making, movie making, environmental monitoring, and aerial survey become compelling applications in the future.

Drone aircraft are sophisticated and flexible. They take off, fly and land autonomously. They enable engineers to push the envelope of normal flight. Reconnaissance drones can fly for days continuously. Remote, ground-based pilots can work in shifts.

Removal of the need for an onboard pilot ushers in an era of low cost aerial craft called drones. The drone elimination of the need for human support systems on aircraft dramatically reduces the aircraft’s size, complexity, and power requirements. The drones effectively reduce overall program cost, development time and risk. Many advanced flight technologies are for piloted craft. These are initially tested using unmanned subscale demonstrators.

Removing the pilot allows designers to simplify the aircraft’s design and then test it at reduced risk. It allows configurations that would be impossible or impractical for human occupation.

A common issue with UAV platforms is the need to optimize these aircraft. UAV are used to carry useful payloads. These platforms are flexible as to payload, permitting interchangeable or additional sensors and other electronics, extra fuel or weapons systems. The sole function of an unmanned aircraft is to get to a target location, perform a task, and then return in the most efficient and cost-effective way. Without a pilot aboard, the return trip is optional. Light weight is central to UAV design.

## NORTHROP GRUMMAN GLOBAL HAWK

LEXINGTON, Massachusetts (July 30, 2015) – WinterGreen Research announces that it has published a new study *Drones: Trains, Planes, and Drones Use Remote Control: Market Shares, Strategy, and Forecasts, Worldwide, 2015 to 2021*. Next generation drones leverage better technology, launching from ships anywhere. The technology is evolving better navigation, softer landings, longer flights, better ability to carry different payloads.

The drones are able to achieve military and commercial tasks. They have been evolving airfreight delivery systems capability. They are used for surveillance, reconnaissance and intelligence missions. They do 3D mapping, commercial pipeline observation, border patrol, package delivery, photography, and agriculture. These are more energy efficient, last longer and have a significantly lower cost of operation than manned aircraft.

Drone technology extends everywhere, even to airline control towers. Drones evolving technology is extending uses, even evolving to trains and planes. The use of Drone technology to control moving devices remotely extends the notion of drones, creating a larger potential drone market. Military drones will make every navy ship an aircraft carrier. They can be launched from anywhere, not needing an airfield.

In the recent Germanwings airline crash, the control tower knew for 10 minutes that the airliner was set to destruct with all the passengers on board but the controllers in the tower were powerless to help. This crash represents an instance of how security systems and sensors might be used from a control tower to effect remote control in response to a security issue.

Headlines like “Amtrak train derailed going 106 M.P.H. on sharp curve; at least 9 killed”, represent another instance of where remote control of a transport unit would improve safety in train operations. Remote monitoring. and remote piloting offer guidelines on the commercial use of unmanned aircraft systems . Drone commercial uses will provide billions of dollars in economic growth.

Drone unmanned aerial vehicle (UAV) technology has reached a level of maturity that has put these systems at the forefront of aerospace manufacturing. Procurement around the world is adapting to drone availability. Use in the global war on terrorism has demonstrated unique usefulness for military intelligence, surveillance, reconnaissance and communications relay.

Relatively low-cost of drones make them work for civilian applications. Law enforcement, mapping, video making, movie making, environmental monitoring, and aerial survey become compelling applications in the future.

Drone aircraft are sophisticated and flexible. They take off, fly and land autonomously. They enable engineers to push the envelope of normal flight. Reconnaissance drones can fly for days continuously. Remote, ground-based pilots can work in shifts.

Removal of the need for an onboard pilot ushers in an era of low cost aerial craft called drones. The drone elimination of the need for human support systems on aircraft dramatically reduces the aircraft's size, complexity, and power requirements. The drones effectively reduce overall program cost, development time and risk. Many advanced flight technologies are for piloted craft. These are initially tested using unmanned subscale demonstrators.

Removing the pilot allows designers to simplify the aircraft's design and then test it at reduced risk. It allows configurations that would be impossible or impractical for human occupation.

A common issue with UAV platforms is the need to optimize these aircraft. UAV are used to carry useful payloads. These platforms are flexible as to payload, permitting interchangeable or additional sensors and other electronics, extra fuel or weapons systems. The sole function of an unmanned aircraft is to get to a target location, perform a task, and then return in the most efficient and cost-effective way. Without a pilot aboard, the return trip is optional. Light weight is central to UAV design.

Drones represent a way to use air to travel faster and at less cost. The market is divided between military and commercial drones. Military drones represent the future of the national security presence for every nation. Increasing technology sophistication and lower costs are achieving dramatic market shifts.

Remote operation occurs in a control tower. The control tower knew for ten minutes that the Germanwings flight was headed for disaster and could do nothing about it, the same was true during the airliner participation in the 911 terrorist bombings. What this study is about is control towers that have the ability to stop trains, planes, and control drones.

Control towers are set to become a way of life and drones light the way. Other technologies will follow. If a train is approaching a curve at 100 miles per hour when it should be going 50 miles per hour, there in the future there will be a way to remotely

take over the train and slow it or stop it.

If a plane is hijacked, if there is a bad guy in the pilot's seat, then in the future, the control tower will take over the plane. Drones lead the way in this regard. Drones provide a way to permit a plane to enter an airspace and to be controlled remotely. It is the drone technology that will be adopted by the trains and planes in the future of control tower expansion.

In this study, we illustrate how drones achieve doing work even though they are remotely controlled. Remote operation of trains is now possible. A speeding train can be stopped by trained staff watching remotely. The rules for this have yet to be fully implemented.

Transportation Trades AFL-CIO Endorses Federal Mandates To Require At Least Two Crew Members On U.S. Freight Trains

Drone market forecasts indicate strong growth anticipated Markets at \$3.6 billion in 2014 are anticipated to reach \$16.1 billion by 2021. A \$3.6 billion market is substantial indicating the presence of many reference accounts for vendors. The wide variety of models and applications speak to the strong foothold in the market. With many vendors pushing products, the aggregate marketing will contribute to building a huge market for drones.

Commercial drone agricultural markets will grow significantly as the aircraft are able to perform more cost efficiently than other ways of farming, ranching, and orchard tending. Package delivery is evolving as a nascent market for commercial drones.

Military markets for drones with strike capability will grow rapidly. Every segment of drone market applications is poised for strong growth as the designs become more mature and vendors spread throughout the world..

Military drones will be used on ships to replace missiles. Drones will master becoming more elusive and able to fly faster to get out of the way of armies firing at them. Drones will be launched from the decks of ships and controlled remotely to deal with trouble anywhere.

Drones markets promise to grow significantly because of the more economical visualization and navigation provided by systems. Visualization includes mapping from the air, inspection from the air, surveillance from the air, and package delivery from the

air. The unmanned aircraft equipped with cameras are able to do things that cannot be done in any other way. This bodes well for market development.

Unmanned aircraft systems promise to achieve a more significant aspect of commercial market presence. Army Unmanned Aircraft Systems flying of 3 million flight hours gives drones market credibility. Eighty eight percent of those hours were logged in combat situations in Iraq and Afghanistan, paving the way for commercial drone markets to develop.

According to Susan Eustis, leader of the team that prepared the study, “Quantities of fielded military and commercial systems of every size and description are set to increase. Every ship can become an aircraft carrier with drones, every commercial endeavor can be made to operate more efficiently with drones. Police departments, the oil and gas industry, border patrol, and utilities are all using commercial drones. Units are used for agriculture. Vendors continue to improve the capabilities of drone aircraft. Governments continue to improve the rules and regulations controlling drones. Their ability to support the military and commercial endeavors is increasing. Unmanned aircraft have fundamentally changed the accuracy of utility and oil and gas inspections. The drones are set to fundamentally change how agriculture is conducted.”

WinterGreen Research is an independent research organization funded by the sale of market research studies all over the world and by the implementation of ROI models that are used to calculate the total cost of ownership of equipment, services, and software. The company has 35 distributors worldwide, including Global Information Info Shop, Market Research.com, Research and Markets, Bloomberg, electronics.ca, and Thompson Financial. WinterGreen Research is positioned to help customers facing challenges that define the modern enterprises. The increasingly global nature of science, technology and engineering is a reflection of the implementation of the globally integrated enterprise. Customers trust wintergreen research to work alongside them to ensure the success of the participation in a particular market segment.

WinterGreen Research supports various market segment programs; provides trusted technical services to the marketing departments. It carries out accurate market share and forecast analysis services for a range of commercial and government customers globally. These are all vital market research support solutions requiring trust and integrity.

## Contents

### **DRONES, UNMANNED AERIAL SYSTEMS (UAS) EXECUTIVE SUMMARY**

Drone Market Driving Forces

UAS Challenges

Commercial Drone Unmanned Aerial Systems (UAS)

Drone Infrastructure Standards

Drone Market Shares

Drone Market Forecasts

### **1. TRAINS, PLANES, AND DRONES: MARKET DESCRIPTION AND MARKET DYNAMICS**

1.1. Moving Transport Vehicle Remote Operation

1.2. Remote Operation Of Trains

1.2.1. Remote Control Of Planes, Trains, And Drones

1.2.2. Remote Control via Hacking Into An Airplane's Computer

1.2.3. Train Crash

1.2.4. Germanwings Crash: Co-pilot Suicide, Cockpit Doors Locked

1.3. Drones: Commercial Unmanned Aerial Systems (UAS) Description

1.3.1. US FAA Issues

1.3.2. Government Unmanned Aircraft Systems (UAS)

1.3.3. Military Drones Definition

1.4. Pre-Position UASs In Key Strategic Locations

1.4.1. Maritime Air Take-Off and Landing:

1.4.2. Unmanned Aerial Systems (UAS) Aerial Refueling

1.4.3. Unmanned Aerial Systems (UAS) Enhanced Capability and Payloads

1.4.4. Unmanned Aerial Systems (UAS) Enhanced Resilience

1.4.5. Small and Micro-UASs

1.4.6. Unmanned Aerial Systems (UAS) Perimeter Surveillance

1.4.7. Unmanned Aerial Systems (UASs) Surveillance

1.5. Georeferenced Imagery

1.5.1. Unmanned Aerial Systems (UAS) Traffic Monitoring

1.5.2. Unmanned Aerial Systems (UAS) Agriculture Mapping

1.5.3. Unmanned Aerial Systems (UAS) Homeland Security

1.5.4. Unmanned Aerial Systems (UAS) for Scientific Research

1.6. Globalization and Technology

1.6.1. Proliferation of Conventional Military Technologies

- 1.6.2. UASs General Roles
- 1.7. Border Patrol:
- 1.8. Development Of Lighter Yet More Powerful Power Sources For UASs

## **2. DRONES, UNMANNED AERIAL SYSTEMS (UAS) MARKET SHARES AND FORECASTS**

### 2.1. Drone Market Driving Forces

- 2.1.1. UAS Challenges
- 2.1.2. Commercial Drone Unmanned Aerial Systems (UAS)
- 2.1.3. Drone Infrastructure Standards

### 2.2. Drone Market Shares

### 2.3. Drone Market Forecasts

- 2.3.1. Drone Market Leaders And Potential Market Share To 2021...
- 2.3.2. Commercial Drone Market Vertical Growth, Agriculture, Oil and Gas, Insurance
- 2.3.3. Drone Market Regional Growth
- 2.3.4. Comparison in Growth of Commercial Vs. Defense Spending on Drones
- 2.3.5. Market Growth Minis Vs. HALES/MALES?

### 2.4. Military Drone Markets

- 2.4.1. Military Drone Extended System Requirements
- 2.4.2. Drone FAA Federal Aviation Regulations
- 2.4.3. Military Drone Market Driving Forces
- 2.4.4. US DoD Spending Trends
- 2.4.5. US Military Budget

### 2.5. Military Drone Market Shares

- 2.5.1. Northrup Grumman
- 2.5.2. General Atomics
- 2.5.3. Textron A1A
- 2.5.4. AeroVironment
- 2.5.5. Boeing Insitu
- 2.5.6. Lockheed Martin Corporation (NYSE:LMT)
- 2.5.7. Prox Dynamics AS
- 2.5.8. Denel Dynamics
- 2.5.9. SAIC
- 2.5.10. Israel Aerospace Industries
- 2.5.11. General Dynamics Corporation
- 2.5.12. Wing Loong Medium-Altitude Long-Endurance (MALE) Drone
- 2.5.13. DJI
- 2.5.14. Drone Upgrade Spending



- 2.5.1. Military Drone Segments, Specific Drones and Their Vendors
  - 2.5.2. Military Drone Systems Market Segments: Persistent
  - 2.5.3. Military Penetrating Drone Systems Market Segments:
  - 2.5.4. Military Tactical Drone Systems Market Segments:
  - 2.5.5. Military Small Tactical Drone Systems Market Segments:
  - 2.5.6. Military Mini Drone Systems Market Segments:
  - 2.5.7. Military Drone Market Share Unit Analysis
  - 2.5.8. US Military Drone Systems Installed and Sold by Vendor and by Type of Drone
- Market Shares, Units and Dollars
- 2.6. Military Drone Market Forecasts
    - 2.6.1. Military Drone Market Segment Forecasts
  - 2.7. Military Drone Regional Market
    - 2.7.1. US: Growing Demand For Use Of Drones
    - 2.7.2. US Defense Industry Initiatives DII-Related Initiatives
    - 2.7.3. US Navy
    - 2.7.4. US Air Force Drone Budget
    - 2.7.5. US Military to Spend \$38.9 Billion On Drones And Unmanned Systems Over 7 Years
    - 2.7.6. Inventory of Unmanned Aerial Integrated Systems
    - 2.7.7. US Drone Roadmap Anticipates Substantial Growth
    - 2.7.8. US Military Drone Robot Technology Budget Requests
    - 2.7.9. Unmanned Ground Systems
    - 2.7.10. Unmanned Maritime Systems
    - 2.7.11. US Military Technology Investment
  - 2.8. Commercial Drone Unmanned Aerial Systems (UAS) Market Shares
    - 2.8.1. Commercial Drone Unmanned Aerial Systems (UAS) Market Shares
    - 2.8.2. Lockheed Martin
    - 2.8.3. BP and AeroVironment Launch FAA-Approved, Commercial Unmanned Aircraft Operations
    - 2.8.4. AeroVironment's Extensive Operational Track Record
    - 2.8.5. AeroVironment \$11.2 Million Order for Raven Unmanned Aircraft Systems and Services
    - 2.8.6. Textron /AAI
    - 2.8.7. Textron Shadow
    - 2.8.8. Aurora Flight Sciences Odysseus Solar-Powered Aircraft
    - 2.8.9. Insitu
    - 2.8.10. Draganflyer X4 UAV
    - 2.8.11. Boeing Insitu
    - 2.8.12. DRS Unmanned Technologies Ground Control Stations

- 2.8.13. Proxy Aviation Systems
- 2.8.14. Northrop Grumman Bat
- 2.8.15. General Atomics Predator UAS
- 2.8.16. General Atomics Predator B UAS
- 2.8.17. Border Patrol / Law Enforcement Drone Unmanned Aerial Systems (UAS)

#### Market Shares

- 2.8.18. Package Delivery Drone Unmanned Aerial Systems (UAS) Market Shares,
- 2.8.19. Google Package Delivery
- 2.8.20. Utility and Pipeline Inspection Drone Unmanned Aerial Systems (UAS) Market Shares
- 2.8.21. Agricultural Inspection and Planting Drone Unmanned Aerial Systems (UAS)

#### Market Shares

- 2.8.22. Yamaha RMAX
- 2.8.23. Prox Dynamics PD-100 Black Hornet
- 2.8.24. Photography and Videography Drone Unmanned Aerial Systems (UAS) Market Shares

#### Shares

### 2.9. Commercial Drone Unmanned Aircraft Market Forecasts

- 2.9.1. Unmanned Aerial Systems (UAS), Market Total Forecasts
- 2.9.2. Small Commercial Drone Unmanned Aircraft Market Forecasts
- 2.9.1. Mid-Size Commercial Drone Unmanned Aircraft Market Forecasts
- 2.9.1. Small and Mid Size Commercial Drone Unmanned Aerial Systems
- 2.9.2. Commercial Drone Unmanned Aerial Systems (UAS), Market Forecasts by

#### Sector

- 2.9.3. Commercial Drone UAS Wing Based Sub-segments

### 2.10. Unmanned Aerial Systems Payloads

- 2.10.1. Composites Key to UAV Utility

### 2.11. Unmanned Airplane Regional Market Analysis

- 2.11.1. Unmanned Aerial Vehicle (UAV) Industry Regional Summary
- 2.11.2. U.S Accounts for 73 Percent Of The Worldwide Research, Development, Test, And Evaluation (RDT&E) Spending On UAV Technology
- 2.11.3. UAS Marketplace Moving Target
- 2.11.4. China
- 2.11.5. China
- 2.11.6. DoD Source Materials
- 2.11.7. US Drone Research, Development, Test & Evaluation (RDT&E)
- 2.11.8. US Drones for Aircraft Carriers
- 2.11.9. Worldwide Trade In Drones
- 2.11.10. Chinese Smog-Fighting Drones That Spray Chemicals To Capture Air Pollution

- 2.11.11. China Desires Exports, Steps Up Research In Military Drones
- 2.11.12. Drones for the Netherlands
- 2.11.13. U.S. State Department Drone Export Guidelines
- 2.11.14. Canada
- 2.11.15. Singapore
- 2.11.16. Brazil
- 2.11.17. Morocco
- 2.11.18. India
- 2.11.19. Russia Develops Heavy Drone
- 2.11.20. Russian Drones In the Skies In Ukraine

### **3. TRAINS, PLANES, AND DRONES: REMOTE FLIGHT CONTROL OF RAIL AND AERIAL SYSTEMS PRODUCT DESCRIPTION**

#### 3.1. Cattron Group

- 3.1.1. Cattron Group Remote Control Rail Applications

#### 3.2. Boeing

- 3.2.1. Boeing Airliner Flight Control An Issue
- 3.2.2. Boeing Airliner Remote Control Autopilot Patent
- 3.2.3. Boeing / Insitu Integrator System
- 3.2.4. Boeing A160 Hummingbird Helicopter
- 3.2.5. Boeing Condor Unmanned Aerial Vehicle
- 3.2.6. Boeing ScanEagle Small Footprint UAS Solutions
- 3.2.7. Boeing / Insitu / Commercial
- 3.2.8. Insitu Arctic Ice Floe Monitoring
- 3.2.9. Insitu Mammal Monitoring
- 3.2.10. Insitu Pipeline Surveys
- 3.2.11. Insitu Power-Line Inspections
- 3.2.12. Insitu Geomagnetic Surveys
- 3.2.13. Insitu Commercial Fishing
- 3.2.14. Insitu Public Safety
- 3.2.15. Insitu Disaster Response
- 3.2.16. Insitu Search and Rescue
- 3.2.17. Insitu Port and Border Security
- 3.2.18. Insitu Communications Relay
- 3.2.19. Insitu Over-the-Horizon Sensing
- 3.2.20. Insitu Counter-Narcotics
- 3.2.21. Insitu Offshore Base
- 3.2.22. Insitu Defense

- 3.2.23. Insitu Payload Systems
- 3.2.24. Insitu Force Protection
- 3.2.25. Insitu Combined Arms
- 3.2.26. Insitu Research Future of UAS Operations and Technology
- 3.2.27. Insitu ICOMC2 Streamline Process
- 3.2.28. Insitu ICOMC2's Breakthrough Technology Extends Drone Capabilities
- 3.2.29. Insitu Integrator
- 3.2.30. Insitu NightEagle
- 3.2.31. Boeing X-37B Space Shuttle
- 3.3. GoPro
- 3.4. AeroVironment
  - 3.4.1. AeroVironment Global Observer
  - 3.4.2. AeroVironment RQ-20A Puma AE
  - 3.4.3. AeroVironment Wasp AE
  - 3.4.4. AeroVironment Shrike VTOL
  - 3.4.5. AeroVironment Ground Control System
  - 3.4.6. BP and AeroVironment Launch FAA-Approved, Commercial Unmanned Aircraft Operations
  - 3.4.7. AeroVironment Integrated LiDAR Sensor Payload
  - 3.4.8. AeroVironment and Commercial UAV
  - 3.4.9. AeroVironment AV's Family of Small UAS
  - 3.4.10. AeroVironment Raven
- 3.5. Amazon
- 3.6. Textron
  - 3.6.1. Textron Shadow M2
  - 3.6.2. Textron One System Remote Video Terminal
  - 3.6.3. Textron Universal Ground Control Station
  - 3.6.4. Textron Aerosonde
  - 3.6.5. Textron / Aerosonde AAI Services
  - 3.6.6. Textron Systems AAI
  - 3.6.7. Textron Systems AAI RQ-7B Shadow Tactical UAS Unmanned Aircraft Systems (UAS)
  - 3.6.8. Textron Systems AAI Shadow Tactical Unmanned Aircraft System (TUAS)
  - 3.6.9. AAI Shadow 400 Unmanned Aircraft Deployed With Allied Naval Forces
  - 3.6.10. Textron Systems AAI Shadow 600 System
  - 3.6.11. Textron
  - 3.6.12. Textron Shadow Reconnaissance, Surveillance
  - 3.6.13. Textron UAS Support
  - 3.6.14. Textron UAS Training

3.6.15. Textron Systems AAI Ground Control Stations

3.6.16. Textron Systems AAI Remote Intelligence, Surveillance and Reconnaissance

Terminals

3.6.17. Textron Systems AAI / Aerosonde

3.6.18. Textron Systems AAI and Aeronautics Orbiter

3.6.19. Textron Systems AAI Ground Control Stations

3.6.20. Textron Systems AAI Remote Intelligence, Surveillance and Reconnaissance

Terminals

3.6.21. Textron Systems AAI One System Remote Video Terminal

3.6.22. Textron Systems AAI Tactical Sensor Intelligence Sharing System

3.6.23. Textron Systems Wasp Micro Air Vehicle (MAV)

3.6.24. Textron Systems Homeland Security

3.6.25. Nano Air Vehicle

3.7. BAE Systems

3.7.1. BAE Systems Demon UAV

3.7.2. BAE Systems Drones

3.7.3. BAE Systems Herti

3.7.4. BAE Systems Image Collection and Exploitation (ICE) Sensor Management

System

3.7.5. BAE Systems Mantis

3.7.6. BAE Systems MIM500 Series of Uncooled Infrared Camera Cores

3.7.7. BAE Systems Taranis

3.7.8. BAE Systems Taranis - Unmanned Combat Air Vehicle (UCAV)

3.7.9. BAE Systems Telemos

3.8. Aurora Flight Sciences Hale

3.8.1. Aurora Centaur

3.8.2. Aurora Orion

3.8.3. Aurora SKATE - Small Unmanned Aircraft System

3.8.4. Aurora's HALE

3.8.5. Aurora's Advanced Concepts: SunLight Eagle - Green Flight

3.8.6. Aurora's Excalibur

3.8.7. Aurora GoldenEye 80 - Small, Capable Surveillance UAS

3.8.8. Aurora GoldenEye

3.8.9. Aurora GoldenEye

3.8.10. Aurora's Advanced Concepts: UHATF

3.8.11. Aurora Flight Sciences Odysseus Solar-Powered Aircraft

3.8.12. Aurora Flight Sciences Orion HALL

3.8.13. Aurora Flight Sciences Earth Science Applications

3.8.14. Aurora Small Unmanned Aerial Systems

- 3.8.15. Aurora Tactical Systems
- 3.8.16. Aurora Diamond DA42 MPP
- 3.8.17. Aurora System Description
- 3.9. L-3 Communications Next Generation Precision Unmanned Aircraft Systems
  - 3.9.1. L-3 Communications Cutlass Tube-Launched Small UAS
  - 3.9.2. L-3 Cutlass Communications Small Expendable Tube-Launched UAS
  - 3.9.3. L-3's Mid-Tier UAS Programs
  - 3.9.4. L-3 Communications UAS APEX Programs
  - 3.9.5. L-3 Communications Medium Altitude Long Endurance Unmanned Or Manned - Mobius
    - 3.9.6. L-3 Unmanned Systems' Viking 100 Runway Operations
    - 3.9.7. L-3 Communications Viking 300 Runway Operations
    - 3.9.8. L-3 Communications Viking
    - 3.9.9. L-3 Communications TigerShark
    - 3.9.10. L-3 Communications Generation IV Ground Control Station
    - 3.9.11. L-3 Communications On-board Precision Automated Landing System (O-PALS)
  - 3.9.12. L-3 Communications ISR Services
  - 3.9.13. L-3 Communications System Integration and Technical Support
- 3.10. Challis Heliplane UAV Inc.
  - 3.10.1. Challis Heliplane UAV E950
- 3.8. Draganfly Innovations Inc.
  - 3.8.1. Draganfly Draganflyer X4-P
  - 3.8.2. Draganfly Handheld Ground Control System
  - 3.8.3. Draganflyer Vision Based System (VBS)
  - 3.8.4. Draganflyer Guardian
  - 3.8.5. Draganfly X4
  - 3.8.6. Draganflyer X6
  - 3.8.7. Draganflyer Aerial Photography & Video Applications
  - 3.8.8. Draganflyer Real Estate Applications
  - 3.8.9. Draganflyer Law Enforcement Applications
  - 3.8.10. Draganflyer X8
- 3.9. DRS Unmanned Technologies Ground Control Stations
  - 3.9.1. DRS Aircraft Monitoring Unit (AMU)
- 3.10. General Atomics
  - 3.10.1. General Atomics Predator B UAS
  - 3.10.2. General Atomics Certifiable Predator B RPA (Developmental)
  - 3.10.3. General Atomics Certifiable Predator B RPA Performance
  - 3.10.4. General Atomics Predator Jet Performance C Avenger UAS

- 3.10.5. General Atomics Aeronautical Systems MQ-1B Predator
- 3.10.6. General Atomics Predator XP RPA
- 3.10.7. General Atomics Gray Eagle UAS
- 3.10.8. General Atomics Improved Gray Eagle (IGE) UAS
- 3.10.1. General Atomics Gray Eagle UAS
- 3.10.2. General Atomics Aeronautical Systems GA - Gray Eagle UAS
- 3.10.3. General Atomics Aeronautical Systems, Inc. (GA-ASI) Claw Sensor Control
- 3.10.4. GA-ASI Athena RF Tag
- 3.11. Integrated Dynamics
  - 3.11.1. Integrated Dynamics Rover
  - 3.11.2. Integrated Dynamics Explorer
  - 3.11.3. Integrated Dynamics Skycam
  - 3.11.4. Integrated Dynamics Pride
  - 3.11.5. Integrated Dynamics Spirit
  - 3.11.6. Integrated Dynamics Border Eagle MK - II
  - 3.11.7. Integrated Dynamics Hornet
  - 3.11.8. Integrated Dynamics HAWK MK - V
  - 3.11.9. Integrated Dynamics VISION UAV systems
  - 3.11.10. Integrated Dynamics VISION MK I
  - 3.11.11. Integrated Dynamics Vision M K - I I
  - 3.11.12. Integrated Dynamics S/Integrated Dynamics Integrated Dynamics M K - I
  - 3.11.13. Integrated Dynamics Vector
  - 3.11.14. Integrated Dynamics Tornado
  - 3.11.15. Integrated Dynamics Nishan MK - II
  - 3.11.16. Integrated Dynamics Nishan TJ - 1000
- 3.12. MMIST Mist Mobility
  - 3.12.1. Sherpa Ranger / MMist
- 3.13. Marcus UAV Systems
  - 3.13.1. Marcus Autopilots
- 3.14. Proxy Aviation Systems
  - 3.14.1. Proxy PROTEUS
  - 3.14.2. Proxy PACS
  - 3.14.3. The Proxy Autonomous Control Suite (PACS) Virtual Pilot / Virtual Operator
  - 3.14.4. Proxy Cooperative Control/UDMS
  - 3.14.5. Proxy SkyRaider
- 3.15. LaserMotive
  - 3.15.1. LaserMotive UAV Power Links
  - 3.15.2. LaserMotive Teams with Germany's Ascending Technologies
- 3.16. China Aerospace Science & Industry Corp Jet-Powered WJ600

- 3.16.1. Chinese Naval UAS
- 3.17. ASN Technology Group
- 3.18. Northrop Grumman / Scaled Composites
  - 3.18.1. Proteus
  - 3.18.2. Northrop Grumman MLB Company
  - 3.18.3. Northrop Grumman.Bat
  - 3.18.4. Northrop Grumman BAT 4 UAV
  - 3.18.5. Northrop Grumman V-BAT UAV
  - 3.18.6. Northrop Grumman Super Bat with Piccolo II Autopilot and TASE Gimbal
  - 3.18.7. Northrop Grumman Unmanned Aerial Systems
  - 3.18.8. Northrop Grumman Bat Unmanned Aircraft System (UAS)
  - 3.18.9. Northrop Grumman Firebird
  - 3.18.10. Northrop Grumman Persistent Multiple Intelligence Gathering Air System
  - 3.18.11. Northrop Grumman M324 UAS (Unmanned Aerial System)
  - 3.18.12. Northrop Grumman RQ-4 Block 20 Global Hawk
  - 3.18.13. Northrop Grumman Drone Program Overview
  - 3.18.14. Northrop Grumman Block 20 Global Hawk Specification
  - 3.18.15. Northrop Grumman Euro Hawk
  - 3.18.16. Northrop Grumman Triton
  - 3.18.17. Northrop Grumman's MQ-4C Triton Program:
  - 3.18.18. Northrop Grumman Common Mission Management System (CMMS)
  - 3.18.19. Northrop Grumman Solution
  - 3.18.20. Northrop Grumman RQ-4 Global Hawk
  - 3.18.21. Northrop Grumman Global Hawk (U.S. Air Force) RQ-4 Programs
  - 3.18.22. Northrop Grumman GHMD (U.S. Navy)
  - 3.18.23. NASA Global Hawk (NASA Dryden)
  - 3.18.24. NATO AGS (U.S. and Allied Nations)
  - 3.18.25. Northrop Grumman X-47B UCAS
  - 3.18.26. Northrop Grumman Fire-X Medium-Range Vertical Unmanned Aircraft System
- 3.19. Schiebel Camcopter S-100
  - 3.19.1. Schiebel Camcopter Target Markets:
- 3.20. Parrot AR.Drone 2.0 \$299, Flies Off a Roof
- 3.21. Google
  - 3.21.1. Google Loon
  - 3.21.2. Google Loon Balloon Project
  - 3.21.3. Google Titan Aerospace
- 3.22. Facebook
- 3.23. Outernet Beamed Via Satellite



- 3.23.1. Outernet Mobile Cloud Network Infrastructure
- 3.24. Lockheed Martin Ground Control System
  - 3.24.1. Lockheed Martin Integrated Sensor Is Structure (ISIS)
  - 3.24.2. Lockheed Martin Integrated Sensor IS Structure (ISIS) Concept of Operations
  - 3.24.3. Lockheed Martin K-MAX Unmanned Helicopter
  - 3.24.4. Lockheed Martin K-MAX Used By Commercial Operators
  - 3.24.5. Lockheed Martin ARES
  - 3.24.6. Lockheed Martin Desert Hawk III
  - 3.24.7. Lockheed Martin Fury
  - 3.24.8. Lockheed Martin Expeditionary Ground Control System
  - 3.24.9. Lockheed Martin Remote Minehunting System
  - 3.24.10. Lockheed Martin Marlin
  - 3.24.11. Lockheed Martin Persistent Threat Detection System
  - 3.24.12. Lockheed Martin Stalker UAS Package Delivery
  - 3.24.13. Lockheed Martin Stalker Droppable Payload
- 3.25. TRNDlabs SKEYE Nano Drone
- 3.26. DJI Industries Phantom 3 Drone
  - 3.26.1. DJI Industries Phantom 3 Drone Live HD View
  - 3.26.2. DJI Industries Phantom 3 Drone Complete Control
  - 3.26.3. DJI Industries Phantom Intelligent Battery
  - 3.26.4. DJI Industries Inspire Drone
  - 3.26.5. DJI Industries Ronin-M
  - 3.26.6. DJI Industries Spreading Wings S1000+
  - 3.26.7. DJI Industries Zenmuse Z15-A7
- 3.27. Prox Dynamics PD-100 Black Hornet PRS
- 3.28. Denel Dynamics Seeker 400 UAS
  - 3.28.1. Denel Dynamics Seeker 400 UAS Multi-mission, Multi-role ISR System
  - 3.28.2. Denel Dynamics Seeker 400 UAS System
  - 3.28.3. Denel Dynamics Seeker 400 UAS Multi-mission, Multi-role ISR System
- Features
  - 3.28.4. Denel Dynamics Hungwe UAS
  - 3.28.5. Denel Dynamics Skua
  - 3.28.6. Denel Dynamics Skua High-speed Target Drone
- 3.29. IAI/Malat Israel Aerospace Industries Heron
  - 3.29.1. IAI/Malat Israel Aerospace Industries Super Heron
  - 3.29.2. Israel Aerospace Industries Hunter
  - 3.29.3. Israel Aerospace Industries / RUAG Aerospace Ranger
  - 3.29.4. Israel Aerospace Industries Scout
  - 3.29.5. Israel Aerospace Industries Pioneer

- 3.29.6. Israel Aerospace Industries Searcher MKIII
- 3.29.7. Israel Aerospace Industries Panther Fixed Wing VTOL UAS
- 3.29.8. Israel Aerospace Industries Mini Panther Fixed Wing VTOL Mini UAS
- 3.30. Safran
  - 3.30.1. Safran Patroller and Sperwer
- 3.31. Honeywell
  - 3.31.1. Honeywell Engines in General Atomics MQ-9 Reaper
- 3.32. Prox Dynamics AS
- 3.33. DJI
  - 3.33.1. DJI Phantom
  - 3.33.2. DJI Inspire
  - 3.33.3. DJI Ronin
  - 3.33.4. DJI Ronin Major Updates:

#### **4. DRONE UNMANNED AERIAL SYSTEMS (UAS) TECHNOLOGY**

- 4.1. Learning to Fly a Hobby or Commercial Drone
  - 4.1.1. US FAA Launches Drone Safety Campaign
- 4.2. UAS Sense and Avoid Evolution Avionics Approach
- 4.3. Military Drone Technology
  - 4.3.1. Military Systems Interoperability
  - 4.3.2. Drone Operational Benefits Of Autonomy
- 4.4. Northrop Grumman.BAT UAV Open Architecture
- 4.5. Integrated Dynamics Flight Telecommand & Control Systems
  - 4.5.1. AP 2000
  - 4.5.2. AP 5000
  - 4.5.3. IFCS-6000 (Integrated Autonomous Flight Control System)
  - 4.5.4. IFCS-7000 (Integrated Autonomous Flight Control System)
  - 4.5.5. Portable Telecommand And Control System (P.T.C.S.)
- 4.6. Improved GPS Operations
- 4.7. Integrated Radio Guidance Transmitter (IRGX)
  - 4.7.1. Portable Telecommand And Control System (P.T.C.S.)
- 4.8. IRGX (Integrated Radio Guidance Transmitter)
  - 4.8.1. Ground Control Stations
  - 4.8.2. GCS 1200
  - 4.8.3. GCS 2000
- 4.9. Antenna Tracking Systems
- 4.10. ATPS 1200
  - 4.10.1. ATPS 2000

- 4.10.2. Gyro Stabilized Payloads
- 4.10.3. GSP
- 4.10.4. GSP
- 4.10.5. GSP 1200
- 4.11. Civilian UAV's - Rover Systemstm
- 4.12. CPI-406 Deployable Emergency Locator Transmitter (ELT)
  - 4.12.1. Deployable Flight Incident Recorder Set (DFIRS)
  - 4.12.2. Airborne Separation Video System (ASVS)
  - 4.12.3. Airborne Separation Video System - Remote Sensor (ASVS - RS)
  - 4.12.4. Airborne Tactical Server (ATS)
- 4.13. Cloud Computing and Multilayer Security
- 4.14. Aurora Very High-Altitude Propulsion System (VHAPS)
- 4.15. Aurora Autonomy & Flight Control
  - 4.15.1. Aurora Guidance Sensors And Control Systems MAV Guidance
  - 4.15.2. Aurora Multi-Vehicle Cooperative Control for Air and Sea Vehicles in Littoral Operations (UAV/USV)
  - 4.15.3. Aurora and MIT On-board Planning System for UAVs Supporting Expeditionary Reconnaissance and Surveillance (OPS-USERS)
  - 4.15.4. Aurora Flare Planning
  - 4.15.5. Aurora Distributed Sensor Fusion
  - 4.15.6. Aurora Aerospace Electronics
  - 4.15.7. Aurora is CTC-REF
- 4.16. Space Technologies: Autonomous Control of Space Nuclear Reactors (ACSNR)
  - 4.16.1. Rule-based Asset Management for Space Exploration Systems (RAMSES)
  - 4.16.2. Synchronized Position Hold, Engage & Reorient Experiment Satellites (SPHERES)
- 4.17. Positive Pressure Relief Valve (PPRV)
  - 4.17.1. Chip-Scale Atomic Clock (CSAC)
  - 4.17.2. Low-Design-Impact Inspection Vehicle (LIIVe)
  - 4.17.3. Synthetic Imaging Maneuver Optimization (SIMO)
  - 4.17.4. Self-Assembling Wireless Autonomous Reconfigurable Modules (SWARM)
- 4.18. Persistent, Long-Range Reconnaissance Capabilities
  - 4.18.1. United States Navy's Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS) program
  - 4.18.2. Navy Unmanned Combat Air System UCAS Program:
  - 4.18.3. Navy Unmanned Combat Air System UCAS: Objectives:
- 4.19. Search and Rescue (SAR)
- 4.20. L-3 Communications LinkTEK IDS
- 4.21. L-3 Communications FlightTEK SMC

- 4.21.1. Helicopter Main Limiting Factor Retreating Blade Stall
- 4.22. Draganflyer X4 Applications
  - 4.22.1. Draganflyer X4 Large Project Management
  - 4.22.2. Draganflyer Remote Supervision and Investigation of Equipment
  - 4.22.3. Draganflyer Remote Supervision and Investigation of Agricultural Land and Equipment
  - 4.22.4. Draganflyer Advanced RC Flight Research
  - 4.22.5. Aerial Archeology
  - 4.22.6. Environmental Assessment
  - 4.22.7. The Draganflyer X4 is Fun to Fly
- 4.23. Drones Protect US Commerce and US Civilian Safety
  - 4.23.1. John Adams Articulates the Need for Military to Fight Terrorists
  - 4.23.2. John Adam's Solution for Terrorism

## **5. DRONE AND REMOTE CONTROL COMPANY DESCRIPTION**

- 5.1. AeroVironment
  - 5.1.1. AeroVironment Financial Results For Its Third Quarter Ended January 31, 2015
- 5.2. ASN Technologies
- 5.3. Aurora Flight
  - 5.3.1. Aurora 2013 Employee Exceptional Service Award
- 5.4. Aviation Industry Corp (Avic)
  - 5.4.1. Aviation Industry Corp / Thielert
- 5.5. BAE Systems
- 5.6. Boeing
  - 5.6.1. Boeing 2015 Revenue
  - 5.6.2. Boeing Commercial Airplanes
  - 5.6.3. Boeing Defense, Space & Security
  - 5.6.4. Boeing Capital Corporation
  - 5.6.5. Boeing Engineering, Operations & Technology
  - 5.6.6. Boeing Shared Services Group
  - 5.6.7. Boeing Revenue by Segment
  - 5.6.8. Boeing / Insitu
  - 5.6.9. Boeing Defense, Space & Security
- 5.7. Challis UAV Inc.
- 5.8. China Aerospace
  - 5.8.1. China Aerospace CASC Space Technology
  - 5.8.2. China Aerospace CASC Revenue
- 5.9. Denel Dynamics

- 5.10. DJI
- 5.11. Draganflyer
  - 5.11.1. DraganBot
  - 5.11.2. Draganflyer ABEX Awards
- 5.12. Finmeccanica
  - 5.12.1. DRS Technologies
- 5.13. Flirtey
- 5.14. General Atomics
  - 5.14.1. USAF awards Contracts to GA-ASI to convert 38 Reaper UASs to Extended Range Capability configuration
  - 5.14.2. U.S. Air Force Plans for Extended-Range Reaper
- 5.15. General Dynamics
  - 5.15.1. Sequester Mechanism
  - 5.15.2. General Dynamics Revenue
  - 5.15.3. General Dynamics Robotic Systems
  - 5.15.4. General Dynamics Robotic Systems (GDRS) Vision
  - 5.15.5. General Dynamics Robotic Systems (GDRS) Manufacturing
  - 5.15.6. General Dynamics Autonomous Land And Air Vehicle Development
- 5.16. Google
  - 5.16.1. Google Revenue
  - 5.16.2. Google Revenues by Segment and Geography
  - 5.16.3. Google / Boston Dynamics
  - 5.16.4. Boston Dynamics LS3 - Legged Squad Support Systems
  - 5.16.5. Boston Dynamics CHEETAH - Fastest Legged Robot
  - 5.16.6. Boston Dynamics Atlas - The Agile Anthropomorphic Robot
  - 5.16.7. Boston Dynamics BigDog
  - 5.16.8. Boston Dynamics LittleDog - The Legged Locomotion Learning Robot
  - 5.16.9. Google Robotic Division
  - 5.16.10. Google Self-Driving Car
  - 5.16.11. Google Cars Address Vast Majority Of Vehicle Accidents Due To Human Error
  - 5.16.12. Google Business
  - 5.16.13. Google Corporate Highlights
  - 5.16.14. Google Search
- 5.17. GoPro
  - 5.17.1. GoPro Opular Mount
  - 5.17.2. GoPro Revenue Surges 54% As It Gains Popularity Abroad
  - 5.17.3. GoPro Acquires Kolor, A Virtual Reality Company
- 5.18. Honeywell

- 5.18.1. Honeywell T-Hawk Military Mini Drone
- 5.18.2. Honeywell's Unmanned Aerial Vehicle RMUs
- 5.18.3. Honeywell Navigation
- 5.19. Integrated Dynamics
- 5.20. Israel Aerospace Industries
  - 5.20.1. Israel Aerospace Industries MALAT Division
- 5.21. L-3 Communications
  - 5.21.1. L3 Communications
  - 5.21.2. L-3 Aerospace Systems
  - 5.21.3. L-3 Electronic Systems
  - 5.21.4. L-3 Communication Systems
  - 5.21.5. L-3 National Security Solutions
  - 5.21.6. L-3 Revenue by Segment
- 5.22. Laird / Cattron Group International
  - 5.22.1. Cattron- Theimeg Branding
- 5.23. Laser Motive
- 5.24. Lockheed Martin
  - 5.24.1. Lockheed Martin First Quarter 2015 Results
  - 5.24.2. Lockheed Martin Symphony Improvised Explosive Device Jammer Systems
  - 5.24.3. Lockheed Martin Aeronautics Revenue
  - 5.24.4. Lockheed Martin Electronic Systems
  - 5.24.5. Lockheed Martin
- 5.25. Marcus UAV
- 5.26. MMist
  - 5.26.1. MMIST Sherpatm Guided Parachute System
  - 5.26.2. MMIST SnowGoosetm CQ-10A Unmanned Aerial System (UAS)
- 5.27. Northrop Grumman
  - 5.27.1. Northrop Grumman Revenue
  - 5.27.2. Northrop Grumman Remotec
  - 5.27.3. Northrop Grumman Leading Global Security Company
  - 5.27.4. Northrop Grumman Supplies Marine Navigation Equipment
  - 5.27.5. Northrop Grumman Recognized by UK Ministry of Defense for Role in Supporting Sentry AWACS Aircraft During Military Operations in Libya
  - 5.27.6. Northrop Grumman Corporation Subsidiary Remotec Inc. upgrade the U.S. Air Force fleet of Andros HD-1
  - 5.27.7. Northrop Grumman NAV CANADA Supplier
- 5.28. Parrot/senseFly
  - 5.29.1. Parrot Group / senseFly
  - 5.29.2. Parrot Group senseFly CTI Certified

- 5.30. Prox Dynamics
- 5.31. Proxy Technologies
- 5.32. RUAG Aerospace
- 5.33. Safran Morpho
  - 5.33.1. Safran Morpho Identification Division
  - 5.33.2. Safran Morpho e-Documents Division
  - 5.33.3. Safran Morpho e-Documents Payments
  - 5.33.4. Safran Morpho e-Documents Identity & Access Management
  - 5.33.5. Safran Morpho Global Presence
  - 5.33.6. Safran Morpho Detection Division
  - 5.33.7. Safran Morpho Revenue 2015
  - 5.33.8. Key figures for the first quarter of 2015
  - 5.33.9. Safran Morpho Business highlights
  - 5.33.10. Safran Security Revenue
- 5.34. SAIC
- 5.35. Scaled Composites
- 5.36. Schiebel
- 5.37. Textron
- 5.38. TRNDlabs
- 5.39. Wing Looong

## List Of Tables

### LIST OF TABLES AND FIGURES

Figure ES-1: Northrop Grumman Global Hawk

Table ES-2: Drone Unmanned Aerial Systems Functions

Table ES-3: Drone Unmanned Aerial Systems Features

Table ES-4: Drone Unmanned Aerial Systems Mission Tasks

Table ES-5: Drone Unmanned Aerial Systems (UAS) Benefits

Table ES-6: Drone UAS Challenges

Table ES-7: Drone Unmanned Aerial Systems Functions

Table ES-8: Commercial Drone Unmanned Aerial Systems Features

Table ES-9: Drone Unmanned Aerial Systems Mission Tasks

Table ES-10: Commercial Drone Unmanned Aerial Systems (UAS) Benefits

Figure ES-11: Drone Market Shares, 2014

Table ES-12: Drone Unmanned Aerial Systems Forecasts, Dollars, Worldwide, 2015-2021

Figure 1-1: Transportation Trades AFL-CIO Endorses Federal Mandates To Require At Least Two Crew Members On U.S. Freight Trains

Figure 1-2: Amtrak Train Crash

Figure 1-3: Train Crash May 13, 2015

Figure 1-4: Germanwings Crash in French Alps

Table 1-5: Ability Of Commercial Drones UASs To Perform Delivery Function

Figure 1-6: Increase In Resolution That Is Possible With Georeferenced Imagery

Table 1-7: Department of Transportation Applications

Table 1-8: Unmanned Aerial Systems (UAS) Homeland Security Sites To Be Monitored

Figure 2-1: Northrop Grumman Global Hawk

Table 2-2: Drone Unmanned Aerial Systems Functions

Table 2-3: Drone Unmanned Aerial Systems Features

Table 2-4: Drone Unmanned Aerial Systems Mission Tasks

Table 2-5: Drone Unmanned Aerial Systems (UAS) Benefits

Table 2-6: Drone UAS Challenges

Table 2-7: Drone Unmanned Aerial Systems Functions

Table 2-8: Commercial Drone Unmanned Aerial Systems Features

Table 2-9: Drone Unmanned Aerial Systems Mission Tasks

Table 2-10: Commercial Drone Unmanned Aerial Systems (UAS) Benefits

Figure 2-11: Drone Market Shares, 2014

Figure 2-12: Drone Market Shares, 2014

Table 2-13: Drone Unmanned Aerial Systems Forecasts, Dollars, Worldwide,



2015-2021

Table 2-14: Drone Unmanned Aerial Systems Market Forecast Dollars and Units, Worldwide, 2015-2021

Table 2-15: Military Drone Percent Market Share, Dollars, Worldwide, 2014

Table 2-16: Commercial Drone Percent Market Share, Dollars, Worldwide, 2014

Table 2-17: Commercial Drone Unmanned Aerial Systems (UAS) by Sector, Agriculture, Oil and Gas, Border Patrol, Disaster Response, Dollars, Worldwide, 2015-2021

Table 2-18: Military Drone Regional Segment Market Forecast, US, China and India, Japan and Rest of Asia Pacific Rest of World, Dollars, 2015-2021

Table 2-19: Commercial Drone Regional Segment Market Forecast, US, China and India, Japan and Rest of Asia Pacific, Rest of World, Dollars, 2015-2021

Table 2-20: Drone Regional Segment Market Forecast, US, China and India, Japan and Rest of Asia Pacific, Rest of World, Dollars, 2015-2021

Table 2-21: Drone Regional Segment Market Forecast, US, China and India, Japan and Rest of Asia Pacific, Rest of World, Dollars, 2015-2021

Table 2-22: Military Drone Market Forecasts, Persistent, Penetrating, Tactical, Small Tactical, Mini, Dollars, Worldwide, 2015-2021

Figure 2-23: Northrop Grumman Global Hawk

Table 2-24: Military Drone Benefits

Table 2-25: Military Drone Removal of Need For Onboard Pilot Benefits

Table 2-26: Military Drones and Their Vendors

Table 2-27: Military Drone Market Shifts

Table 2-28: Military Drone Market Driving Forces

Figure 2-29: Military Drone Market Shares, Dollars, Worldwide, 2014

Table 2-30: Military Drone Market Shares, Dollars, Worldwide, 2014

Table 2-31: Northrop Grumman Global Hawk Features

Table 2-32: Northrop Grumman Global Hawk Functions

Figure 2-33: Textron Shadow

Figure 2-34: Boeing Insitu RQ-21A Blackjack UAV

Figure 2-35: Prox Dynamics AS Black Hornet Nano

Table 2-36: High-Altitude Surveillance Military Drones: Hawk and Reaper, Shadow and Scan Eagle, Heron

Table 2-37: Mini and Personal Surveillance Military Drone Vendors

Table 2-38: Military Drone Market Shares by Segment: Procurement, Associated Services, R&D, Spending on Operations and Maintenance, Total Market Shares, And Military Drone Portion Dollars, Worldwide, 2014

Table 2-39: Military Drone Systems, Drone Dollars, Services, R&D, Operations & Maintenance, Persistent, Penetrating, Tactical, Small Tactical and Mini, Market Shares, Dollars Shipped, Worldwide, 2014

Table 2-40: Military Drones and Their Vendors

Table 2-41: Military Persistent Drone Systems, Drone Procurement, Units, Services, R&D, Operations & Maintenance, Market Shares, Dollars and Units Shipped, Worldwide, 2014

Table 2-42: Military Penetrating Drone Systems, Drone Procurement, Units, Services, R&D, Operations & Maintenance, Market Shares, Dollars and Units Shipped, Worldwide, 2014

Table 2-43: Military Tactical Drone Systems, Drone Procurement, Units, Services, R&D, Operations & Maintenance, Market Shares, Units Shipped, Worldwide, 2014

Table 2-44: Military Small Tactical Drone Systems, Drone Procurement, Units, Services, R&D, Operations & Maintenance, Market Shares, Units Shipped, Worldwide, 2014

Table 2-45: Military Mini Drone Systems, Drone Procurement, Units, Services, R&D, Operations & Maintenance, Market Shares, Units Shipped, Worldwide, 2014

Table 2-46: Military Drones: Persistent, Penetrating, Tactical, Small Tactical, Mini Market Segment Unit Analysis, 2014

Table 2-47: Military Drone Systems Installed and Sold by Vendor and by Type of Drone Market Shares, Units and Dollars, US, 2013 and 2014

Figure 2-48: Military Drone Unmanned Aerial Systems Forecasts, Dollars, Worldwide, 2015-2021

Table 2-49: Military Drone Market Forecasts, Persistent, Penetrating, Tactical, Small Tactical, Mini, Dollars, Worldwide, 2015-2021

Figure 2-50: Military Drone Unmanned Aerial Systems Vehicle (UAS) Regional Market Segments, Dollars, 2014

Table 2-51: Military Drone Unmanned Aerial Systems (UAS) Regional Market Segments, 2014

Table 2-52: US Military Unmanned Aerial Systems Funding, RDTE, PROC, OM, Dollars and Units, Worldwide, 2014-2021

Table 2-53: Military Drone Benefits

Figure 2-54: Inventory of Unmanned Aerial Integrated Systems

Table 2-55: US Drone Technology Innovation

Figure 2-56: US Drone Systems Roadmap

Figure 2-57: Unfunded US Drone Designs

Figure 2-58: US Military Attack Drone

Table 2-59: US Military Technology Investment

Table 2-60: US Military Technology Positioning

Figure 2-61: US Military Drone O&M Request

Figure 2-62: Commercial Drone Unmanned Aerial Systems (UAS) Market Shares, Dollars, 2014

Table 2-63: Commercial Drone Unmanned Aerial Systems (UAS) Market Shares,

Dollars, Worldwide, 2014

Table 2-64: Commercial Drone Unmanned Aerial Systems (UAS) Market Shares, Units and Dollars, Worldwide, 2014

Figure 2-65: BP and AeroVironment Drone for Comprehensive GIS Services

Figure 2-66: AeroVironment Switchblade Tactical Missile System

Figure 2-67: Textron Shadow

Figure 2-68: General Atomics Predator UAS

Figure 2-69: General Atomics Predator B UAS

Table 2-70: Border Patrol / Law Enforcement Drone Unmanned Aerial Systems (UAS) Market Shares, Dollars, Worldwide, 2014

Table 2-71: Package Delivery Drone Unmanned Aerial Systems (UAS) Market Shares, Dollars, Worldwide, 2014

Table 2-72: Utility and Pipeline Inspection Drone Unmanned Aerial Systems (UAS) Market Shares

Figure 4-73: Draganflyer Pipeline / Hydro-Transmission Line Inspection

Table 2-74: Agricultural Inspection and Planting Drone Unmanned Aerial Systems (UAS) Market Shares, Dollars, Worldwide, 2014

Figure 2-75: Yamaha Helicopter Drone Spraying

Figure 2-76: Yamaha RMAX Helicopter Drones

Table 2-77: Photography and Videography Drone Unmanned Aerial Systems (UAS) Market Shares, Dollars, Worldwide, 2014

Figure 2-78: Commercial Drone Unmanned Aerial Systems (UAS), Market Forecasts Dollars, Worldwide, 2015-2021

Figure 2-79: Commercial Drone Unmanned Aerial Systems (UAS) Market Forecasts, Units, Worldwide, 2015-2021

Table 2-80: Commercial Drone Unmanned Aerial Systems Markets, Dollars, Worldwide, 2014-2021

Figure 2-81: Small Commercial Drone Unmanned Aerial Systems (UAS) Market Forecasts, Dollars, Worldwide, 2015-2021

Figure 2-82: Small Commercial Drone Unmanned Aerial Systems (UAS) Market Forecasts, Units, Worldwide, 2015-2021

Figure 2-83: Mid Size Commercial Drone Unmanned Aerial Systems Forecasts, Dollars, Worldwide, 2015-2021

Figure 2-84: Mid-Range Commercial Drone Unmanned Aerial Systems (UAS) Market Forecasts, Units, Worldwide, 2015-2021

Table 2-85: Small and Mid-Size Commercial Drone Unmanned Aerial Systems Dollars and Units, Worldwide, 2015-2021

Table 2-86: Commercial Drone Unmanned Aerial Systems (UAS) by Sector, Agriculture, Oil and Gas, Border Patrol, Disaster Response, Dollars, Worldwide, 2015-2021

Table 2-87: Commercial Drone Unmanned Aerial Systems (UAS) by Sector, Agriculture, Oil and Gas, Border Patrol, Disaster Response, Percent, Worldwide, 2015-2021

Table 2-88: Commercial Drone Unmanned Aerial Systems (UAS) Applications, Dollars Worldwide, 2015

Figure 2-89: Commercial Drone Unmanned Aerial Systems (UAS) Market Segments, Dollars, 2014

Figure 2-90: Commercial Drone Unmanned Aerial Systems (UAS) Market Segments, Dollars, 2021

Figure 2-91: Commercial Drone Unmanned Aerial Systems (UAS) by Sector, Agriculture, Oil and Gas, Border Patrol, Disaster Response, Dollars, Worldwide, 2015-2021

Figure 2-92: Commercial Drone Unmanned Aerial Systems (UAS) by Sector, Agriculture, Oil and Gas, Border Patrol, Disaster Response, Percent, Worldwide, 2015-2021

Figure 2-93: Commercial Drone Unmanned Aerial Systems Vehicle (UAS) Regional Market Segments, Dollars, 2014

Table 2-94: Commercial Drone Unmanned Aerial Systems (UAS) Regional Market Segments, 2014

Figure 2-95: Military Drone Systems Installed and Sold by Vendor and by Type of Drone Market Shares, Units and Dollars, US, 2013 and 2014

Table 2-96: US Air Force Drone Procurement Strategy

Table 2-97: US Army Drone Procurement Strategy

Table 2-98: Illustrating US Army Drone Procurement Strategy

Table 2-99: US Air Force Research, Development, Test & Evaluation Strategy

Figure 2-100: US Navy X-47B UCLASS.

Table 2-101: US Drone Navy and Marines Strategies

Figure 2-102: US DARPA Ship Based Drone System

Figure 2-103: Russian S400 Triumph Anti-Aircraft System

Figure 3-1: Cattron Group rail Remote Control

Figure 3-2: Cattron Group Train Remote Controllers

Figure 3-3: Cattron Group Remote Control Rail Applications

Table 3-4: Cattron Group Railcar Movers System Features:

Table 3-5: Railcar Movers System Features:

Figure 3-6: Cattron Group Electronic Position Detection Pullback

Figure 3-7: Cattron Connect Virtual Inspection of Equipment

Figure 3-8: Boeing Airliner Remote Control Autopilot Patent

Figure 3-9: Boeing / Insitu Integrator System

Figure 3-10: Boeing / Insitu Integrator System Functions

Table 3-11: Boeing A160 Hummingbird Helicopter Features

Figure 3-12: Boeing A160 Hummingbird Unmanned Aerial Vehicle  
Figure 3-13: Boeing Condor Unmanned Aerial Vehicle  
Table 3-14: Boeing-Insitu ScanEagle In Service Views  
Figure 3-15: Boeing ScanEagle  
Figure 3-16: Insitu ScanEagle  
Figure 3-17: Boeing Insitu ScanEagle 2 - the Next Generation Platform  
Table 3-18: Insitu Industry Standards Best Practices Partners  
Table 3-19: Insitu ICOMC2's Breakthrough Technology Capabilities  
Table 3-20: Insitu ICOMC2 Technology Upgrade For Emergency Response  
Figure 3-21: Insitu Integrator Sustainment Operations  
Figure 3-22: Insitu NightEagle  
Figure 3-23: Boeing X-37B Space Shuttle  
Figure 3-24: AeroVironement Global Observer  
Table 3-25: AeroVironement Global Observer Advanced Warning Factors  
Table 3-26: AeroVironement Global Observer System Applications  
Table 3-27: AeroVironement Global Observer System Target Markets  
Figure 3-28: AeroVironement RQ-20A Puma AE  
Figure 3-29: AeroVironement Wasp AE  
Figure 3-30: AeroVironement Shrike VTOL  
Figure 3-31: AeroVironement Ground Control System  
Figure 3-32: BP and AeroVironement Drone for Comprehensive GIS Services  
Table 3-33: AeroVironement BP Services  
Table 3-34: AeroVironement BP Inspection of Critical Infrastructure  
Figure 3-35: AeroVironement Commercial UAV  
Figure 3-36: AeroVironement UAS: Raven  
Figure 3-37: AeroVironement Raven  
Table 3-38: Interstate Drone Regulation Functions  
Figure 3-39: Amazon Prime Air Drone  
Figure 3-40: Textron Shadow M2  
Table 3-41: Textron Shadow M2 Features  
Table 3-42: Textron One System Remote Video Terminal  
Figure 3-43: Textron Universal Ground Control Station  
Table 3-44: Textron Next-Generation Universal Ground Control Station (UGCS) Features And Technologies  
Table 3-45: Textron / Aerosonde Aircraft Flight Milestones And Capabilities  
Table 3-46: Aerosonde Service Capabilities  
Table 3-47: Textron AAI Optimization For The Aircraft For Military Missions  
Figure 3-48: Textron Systems AAI Shadow  
Figure 3-49: Textron Systems AAI Shadow 600 System

Figure 3-50: Textron Shadow

Table 3-51: Textron Drone Services Positioning

Table 3-52: Textron Training Domains And Capabilities

Table 3-53: Textron Systems AAI Ground Control Stations

Table 3-54: Textron Systems AAI Remote Intelligence, Surveillance and Reconnaissance Terminals

Figure 3-55: Textron Systems UAS: Wasp

Table 3-56: Textron Systems Global Observer System Homeland Security Functions

Table 3-57: Textron Systems Global Observer Features

Figure 3-58: Nano Air UAS Advanced Development Aircraft:

Figure 3-59: BAE Systems Demon Designed To Fly Without Using Flaps, Elevators, Or Ailerons

Figure 3-60: BAE Systems Compact Laser Range Finder

Figure 3-61: BAE Systems Herti Next Generation Autonomous Air System

Table 3-62: BAE Systems Herti Key Roles

Table 3-63: BAE Systems Herti Key Specifications

Figure 3-64: BAE Systems MANTIS

Table 3-65: BAE Systems Mantis Functions

Figure 3-66: BAE Systems MIM500 Series Of Uncooled Infrared Camera Cores

Table 3-67: BAE Systems MIM500 Camera Functions

Figure 3-68: BAE Systems Taranis

Figure 3-69: BAE Systems Telemos

Figure 3-70: Aurora Flight Sciences Centaur OPA

Figure 3-71: Aurora Flight Sciences' Centaur

Figure 3-72: Aurora Flight Sciences Orion

Figure 3-73: Aurora Flight Sciences Orion Magic JCTD

Figure 3-74: Aurora Skate

Figure 3-75: Aurora Skate Flight Path

Figure 3-76: Aurora Skate Flying Indoors

Figure 3-77: Aurora's HALE

Figure 3-78: Aurora's Advanced Concepts: SunLight Eagle

Figure 3-79: Aurora Excalibur

Table 3-80: Aurora GoldenEye 80 Air Vehicle Planned Design Improvements

Figure 3-81: Aurora Flight Sciences UAS

Table 3-82: Aurora Flight Sciences Tactical UAVs

Table 3-83: Aurora's Line of Tactical UAVs

Table 3-84: Aurora DA42 MPP Features

Table 3-85: Aurora DA42 MPP Features

Table 3-86: Aurora DA42 MPP Target Applications

Figure 3-87: Aurora Flight Sciences GoldenEye

Figure 3-88: L-3 Communications Next Generation Precision Unmanned Aircraft Systems

Table 3-89: L3 Cutlass Launch Formats

Figure 3-90: L-3 Communications Cutlass

Table 3-91: L-3 Communications Cutlass Tube-Launched Small UAS Key Features

Figure 3-92: L-3 Communications Cutlass Launching From Ground And Air Tubes

Table 3-93: L-3 Communications Cutlass Launching Alternatives

Table 3-94: L-3 Communications Cutlass Functions

Figure 3-95: L-3 Communications Cutlass

Figure 3-96: L-3 Communications Mid-Tier Filling The Gap Between Tactical And Male UAS

Table 3-97: L-3's Mid-Tier UAS Program Functions

Figure 3-98: L-3 Communications APEX

Figure 3-99: L-3 Communications Medium Altitude Long Endurance Unmanned Or Manned - Mobius

Table 3-100: L-3 Communications Mobius Proven Airframe Features

Figure 3-101: L-3 Communications Mobius

Table 3-102: L-3 Unmanned Systems' Viking 100 Key Features

Table 3-103: L-3 Unmanned Systems' Viking 300 Key Features

Table 3-104: L-3 Unmanned Systems' Viking 400 Key Features

Table 3-105: L-3 Unmanned Systems' TigerShark Key Features

Table 3-106: L-3 Unmanned Systems' TigerShark Unmanned Aircraft System (UAS) Functions

Table 3-107: L-3 Unmanned Systems' Communications Generation IV Ground Control Station Key Features

Table 3-108: L-3 Unmanned Systems Communications On-board Precision Automated Landing System Key Features

Table 3-109: L-3 Unmanned Systems ISR Services

Table 3-110: Challis Heliplane UAV E950 Features

Figure 3-111: Challis Heliplane

Figure 3-112: Challis CH-160 Heliplane Specifications

Figure 3-113: Challis Velocity Raptor Heliplane Specifications

Figure 3-114: Draganflyer Handheld Ground Control System

Table 3-115: Draganflyer Vision Based System (VBS) Functions

Figure 3-116: Draganflyer Guardian

Figure 3-117: Draganflyer Camera

Figure 3-118: Draganflyer Camera Modules

Figure 3-119: Draganflyer Camera Operator Module

- Figure 3-120: Draganflyer Hovering
- Figure 3-121: Draganflyer Quad Rotor Provides Flight Stability
- Figure 3-122: Draganflyer X6 Remotely Operated, Unmanned, Miniature Helicopter
- Figure 3-123: Draganflyer Compact Foldable Frame
- Figure 3-124: Draganflyer Camera Real Estate Applications
- Figure 3-125: Draganflyer Camera Law Enforcement Applications
- Figure 3-126: Draganflyer Camera Traffic Applications
- Figure 3-127: Draganflyer Tactical Surveillance
- Figure 3-128: Draganflyer X8 Helicopter
- Figure 3-129: DraganFlyer X8 Helicopter Eight Main Horizontal Rotor Blades
- Figure 3-130: General Atomics Predator UAS
- Figure 3-131: General Atomics Predator B UAS
- Table 3-132: General Atomics Predator B Multi-Mission Aircraft Features:
- Table 3-133: General Atomics Certifiable Predator B RPA Features/Benefits:
- Figure 3-134: General Atomics Predator C Avenger UAS
- Figure 3-135: General Atomics Predator C Avenger UAS Features:
- Figure 3-136: General Atomics Aeronautical Systems Predator
- Figure 3-137: General Atomics Aeronautical Systems Predator Close-Up
- Table 3-138: General Atomics Aeronautical Systems Predator B
- Figure 3-139: General Atomics Predator XP RPA
- Table 3-140: General Atomics Predator XP Features/Benefits:
- Figure 3-141: General Atomics Gray Eagle UAS
- Table 3-142: General Atomics Gray Eagle UAS Features/Benefits:
- Figure 3-143: General Atomics Gray Eagle UAS
- Figure 3-144: General Atomics Gray Eagle UAS Features/Benefits:
- Table 3-145: General Atomics Aeronautical Systems Gray Eagle Features
- Table 3-146: Griffin Eye Manned ISR System Claw Sensor Control Functions
- Figure 3-147: GA-ASI GMTI to EO/IR
- Figure 3-148: GA-ASI Select Targets by RCS or Size
- Figure 3-149: GA-ASI Annotation of Sensor Products
- Figure 3-150: GA-ASI Optical Change Detection
- Figure 3-151: GA-ASI Aided Target Classification Based On Sensor Model
- Figure 3-152: GA-ASI Multi-Spectral Image Viewer
- Figure 3-153: General Atomics Aeronautical Systems GA-ASI Stealthy Blue Force Tracking Device
- Figure 3-154: Integrated Dynamics Rover
- Figure 3-155: Integrated Dynamics Rover A View
- Figure 3-156: Integrated Dynamics Explorer Drone
- Figure 3-157: Integrated Dynamics Skycam



Figure 3-158: Integrated Dynamics Pride

Figure 3-159: Integrated Dynamics Spirit

Figure 3-160: Integrated Dynamics UAV Airframe Systems

Figure 3-161: Integrated Dynamics Border Eagle MK - II

Figure 3-162: Integrated Dynamics Hornet

Figure 3-163: Integrated Dynamics HAWK MK - V

Figure 3-164: Integrated Dynamics VISION MK I

Figure 3-165: Integrated Dynamics Vision M K - I I

Figure 3-166: Integrated Dynamics S/Integrated Dynamics Integrated Dynamics M K - I

Figure 3-167: Integrated Dynamics Vector

Figure 3-168: MMIST SnowGoose

Table 3-169: MMist CQ-10B advantages:

Table 3-170: MMist Unmanned Logistics Air Vehicle (ULAV)Functions

Table 3-171: MMist CQ-10 System

Figure 3-172: MMist Sherpa™ Ranger

Table 3-173: MMIST Shepra Characteristics

Table 3-174: MMist Sherpa Systems Guidance Units

Table 3-175: MMist Sherpa Provider Advantages:

Figure 3-176: MMist Payload

Figure 3-177: Marcus Zephyr Airframes UAV Systems

Table 3-178: Marcus Zephyr Airframes UAV Systems Specifications:

Table 3-179: The Proxy Autonomous Control Suite (PACS) Principal Subsystem Elements:

Table 3-180: Proxy SkyRaider Benefits:

Table 3-181: Proxy Aviation UAV capabilities

Figure 3-182: Chinese Jet-Powered WJ600 Chinese jet-powered WJ600

Figure 3-183: Chinese UAS

Table 3-184: Chinese V750 Helicopter Drone

Table 3-185: Air Show China 2010 J10 Chinese Fighter Jets

Figure 3-186: Northrop Grumman Bat 3 UAV

Table 3-187: Northrop Grumman.Bat 3 Features

Table 3-188: Northrop Grumman Bat 3 Specifications

Figure 3-189: Northrop Grumman BAT 4 UAV

Figure 3-190: Northrop Grumman BAT 4 UAV Features

Table 3-191: Northrop Grumman Bat 4 Fully Integrated With Cloud Cap Technology Piccolo II Specifications

Figure 3-192: Northrop Grumman V-BAT UAV

Table 3-193: Northrop Grumman V-BAT UAV Features

Table 3-194: Northrop Grumman V-BAT UAV Specifications

Figure 3-195: Northrop Grumman Super Bat with Piccolo II Autopilot and TASE Gimbal  
Figure 3-196: Northrop Grumman Super Bat with Piccolo II Autopilot and TASE Gimbal Features  
Table 3-197: Northrop Grumman MLB Super-Bat Specifications  
Figure 3-198: Northrop Grumman Bat Unmanned Aircraft System  
Figure 3-199: Northrop Grumman Firebird  
Figure 3-200: Northrop Grumman M324 UAS  
Figure 3-201: Northrop Grumman Bat Unmanned Aircraft System  
Figure 3-202: Northrop Grumman Bat Unmanned Aircraft System  
Table 3-203: Northrop Grumman's MQ-4C Triton Specifications  
Figure 3-204: Northrop Grumman CMMS  
Figure 3-205: Northrop Grumman Global Hawk (U.S. Air Force)  
Figure 3-206: Northrop Grumman MQ-8B Fire Scout  
Table 3-207: Northrop Grumman MQ-8B Fire Scout System Requirements:  
Figure 3-208: Northrop Grumman MQ-8B Fire Scout System Needs:  
Table 3-209: Northrop Grumman Global Hawk Specifications:  
Table 3-210: Northrop Grumman X-47B UCAS  
Figure 3-211: Northrop Grumman Fire-X  
Table 3-212: Schiebel Camcopter Target Markets:  
Figure 3-213: Airborne Parrot  
Figure 3-214: Airborne Parrot AR.Drone 2.0  
Figure 3-215: Google Design Called A Tail Sitter, A Hybrid Of A Plane And A Helicopter  
Figure 3-216: Project Loon Balloons Float In The Stratosphere  
Figure 3-217: Google Loon Balloon  
Figure 3-218: Google Titan Aerospace  
Figure 3-219: Planet Lab CubeSats As Model for Outernet Beamed Via Satellite  
Figure 3-220: Lockheed Martin Ground Control System  
Table 3-221: Lockheed Martin Expeditionary Ground Control System Features  
Figure 3-222: Lockheed Martin Integrated Sensor Is Structure (ISIS)  
Table 3-223: Lockheed Martin Integrated Sensor Is Structure (ISIS) Capabilities  
Table 3-224: Lockheed Martin Integrated Sensor Is Structure (ISIS) Key Features  
Table 3-225: Lockheed Martin K-MAX Unmanned Helicopter Functions  
Figure 3-226: Lockheed Martin K-MAX Unmanned Helicopter  
Figure 3-227: Lockheed Martin ARES  
Figure 3-228: Lockheed Martin Desert Hawk III  
Figure 3-229: Lockheed Martin Fury  
Table 3-230: Lockheed Martin Fury Features  
Figure 3-231: Lockheed Martin Expeditionary Ground Control System  
Table 3-232: Expeditionary Ground Control System Modules:

Figure 3-233: Lockheed Martin Remote Minehunting System  
Figure 3-234: Lockheed Martin Marlin  
Figure 3-235: Lockheed Martin Persistent Threat Detection System  
Figure 3-236: Lockheed Martin Stalker UAS  
Table 3-237: Lockheed Martin Stalker Droppable Payload Features  
Table 3-238: Stalker eXtended Endurance (Stalker XE) Features  
Figure 3-239: TRNDlabs SKEYE Nano Drone  
Table 3-240: TRNDlabs SKEYE Nano Drone Features  
Figure 3-241: DJI Industries Phantom 3 Drone  
Table 3-242: DJI Industries Phantom 3 Drone Powerful Mobile App  
Table 3-243: DJI Industries Phantom Functions  
Table 3-244: DJI Industries Phantom SKEYE Nano Drone Open Platform Apps  
Programming Functions  
Figure 3-245: DJI Industries Inspire Drone  
Table 3-246: DJI Industries Inspire Drone Features  
Figure 3-247: DJI Industries Ronin-M  
Table 3-248: DJI Industries Ronin-M Functions  
Figure 3-249: DJI Industries Spreading Wings S1000+  
Table 3-250: DJI Industries Spreading Wings S1000+ Features  
Figure 3-251: DJI Industries Zenmuse Z15-A7  
Table 3-252: DJI Industries Zenmuse Z15-A7 Features  
Figure 3-253: Prox Dynamics PD-100 Black Hornet PRS  
Table 3-254: Prox Dynamics PD-100 Black Hornet PRS Features  
Table 3-255: Prox Dynamics PD-100 Black Hornet Missions  
Table 3-256: Prox Dynamics PD-100 Black Hornet Benefits  
Figure 3-257: Denel Dynamics Seeker 400 UAS  
Table 3-258: Denel Dynamics Seeker 400 UAS Features  
Table 3-259: Denel Dynamics Seeker 400 UAS Multi-mission, Multi-role ISR System  
Components:  
Table 3-260: Denel Dynamics Seeker 400 UAS Multi-Mission, Multi-Role ISR System  
Features  
Table 3-261: Denel Dynamics Seeker 400 UAS UAS Multi-mission, Multi-role ISR  
System System Features  
Figure 3-262: Denel Dynamics Hungwe UAS  
Table 3-263: Denel Dynamics Hungwe UAS Functions  
Figure 3-264: Denel Dynamics Skua  
Table 3-265: Denel Dynamics Skua High-speed Target Drone Features  
Figure 3-266: Israel Aerospace Industries Heron  
Table 3-267: Israel Aerospace Industries Heron Features And Capabilities:

Figure 3-268: Israel Aerospace Industries Super Heron  
Table 3-269: Israel Aerospace Industries Super Heron Main Features:  
Figure 3-270: Israel Aerospace Industries Hunter  
Table 3-271: Israel Aerospace Industries Hunter System Features And Capabilities:  
Figure 3-272: Israel Aerospace Industries Ranger  
Table 3-273: Israel Aerospace Industries / RUAG Ranger System Main Features And Capabilities:  
Figure 3-274: Israel Aerospace Industries Searcher MKIII  
Table 3-275: Israel Aerospace Industries Searcher MKIII Multiple Operational Configurations  
Figure 3-276: Israel Aerospace Industries Panther Fixed Wing VTOL UAS  
Table 3-277: Israel Aerospace Industries Panther Features  
Table 3-278: Israel Aerospace Industries Panther Fixed Wing VTOL UAS Main Capabilities  
Table 3-279: The Israel Aerospace Industries Panther Typical Missions  
Figure 3-280: Israel Aerospace Industries Mini Panther Fixed Wing VTOL Mini UAS  
Table 3-281: Israel Aerospace Industries Mini Panther Fixed Wing VTOL Mini UAS Features and Capabilities  
Table 3-282: Israel Aerospace Industries Mini Panther Fixed Wing VTOL Typical Missions 3.30 Safran  
Table 3-283: Safran Drone Positioning  
Table 3-284: Safran Drone Missions  
Figure 3-285: Safran Tactical Drone Systems  
Figure 3-286: Honeywell T-Hawk Military Mini Drone  
Figure 3-287: Honeywell Engines in General Atomics MQ-9 Reaper  
Figure 3-288: Prox Dynamics AS Mini Protective Drone  
Figure 3-289: DJI Phantom  
Figure 3-290: DJI Inspire  
Figure 3-291: DJI Ronin  
Table 3-292: DJI Ronin Features  
Figure 4-1: Typical Hobby Commercial Drone  
Table 4-2: US FAA Suggestions for Drone Pilot Training  
Table 4-3: Drone Standards  
Table 4-4: Drone Certification Standards  
Figure 4-5: UAS Automatic Surveillance Sense and Avoid Evolution  
Figure 4-6: UAS Airspace Control LD-CAP Conceptual Architecture  
Table 4-7: UAS Automatic Surveillance Sense LD-CAP Experimental Environment  
Figure 4-8: UAS Sense and Avoid: See and Avoid Requirement Aspects  
Table 4-9: UAS Avionics Approach

- Table 4-10: Military Drone Technology Key Requirements
- Figure 4-11: US Military DISA Drone Architecture
- Figure 4-12: Drone Operational Architecture
- Figure 4-13: Northrop Grumman.BAT UAV Features
- Figure 4-14: Vehicle Tracking And Antenna Positioning System That Utilizes Unique GPS
- Figure 4-15: Aurora Autonomy & Flight Control
- Table 4-16: Aurora Development Capabilities
- Table 4-17: Aurora / NASA Development Of Automated Landing Systems
- Table 4-18: Aurora / NASA Development Automated Landing System
- Table 4-19: Aurora / NASA Autopilot Development Issues
- Table 4-20: Aurora / NASA Flare Planner Development
- Table 4-21: Roles And Capabilities, Provided By Manned Platforms, With UASs by 2030
- Figure 4-22: Size, Role, and Platform of Unmanned Aircraft
- Table 4-23: Aircraft Prime Contractor Missions
- Table 4-24: L-3 Communications LinkTEK Key Communication Features
- Figure 4-25: linkTEK IDS
- Table 4-26: FlightTEK Controls
- Figure 4-27: Large Project Management
- Figure 4-28: Draganflyer Remote Supervision and Investigation of Equipment
- Figure 4-29: Draganflyer Pipeline / Hydro-Transmission Line Inspection
- Figure 4-30: Draganflyer Remote Supervision and Investigation of Agricultural Fields and Crops
- Figure 4-30: Draganflyer Advanced RC Flight Research
- Figure 4-31: Draganflyer Remote Aerial Archeology
- Figure 4-32: Draganflyer Remote Environmental Assessment
- Figure 4-33: Draganflyer Fun
- Figure 4-34: Advanced Flight Entertainment
- Table 4-35: Draganflyer RC Helicopter Aerial Photography and Videography Platform
- Figure 4-36: John Paul Jones US Navy Ship
- Figure 4-37: Early US Navy Ship
- Figure 4-38: Early US Barbary Wars Show How to Fight Terrorism
- Table 5-1: ASnTech Mobile Or Fixed Assets Benefits
- Table 5-2: ASnTech Mobile Or Fixed Assets Target User Markets
- Table 5-3: ASnTech Mobile Or Fixed Assets Users
- Table 5-4: Aurora Flight Core Values:
- Table 5-5: BAE Systems Standards
- Figure 5-6: BAE Systems Revenue in Defense Market
- Table 5-7: Boeing Commercial Airplane Profile

Table 5-8: Boeing Commercial Airplane Installed Base Profile

Figure 5-9: DJI Phantom

Figure 5-10: Draganflyer Design

Figure 5-11: Draganflyer X6

Table 5-12: DRS Technologies Defense Technology Leading Market Positions

Table 5-13: General Atomics Aeronautical Systems MQ-9 Accelerated Extended Range Aircraft

Figure 5-14: General Atomics Reaper

Figure 5-15: Boston Dynamic LS3

Figure 5-16: Boston Dynamic CHEETAH

Figure 5-16: Boston Dynamic Atlas

Figure 5-17: Boston Dynamic BigDog

Figure 5-18: Boston Dynamics LittleDog

Table 5-19: Google Autonomous Vehicles Technology

Figure 5-20: GoPro Cameras

Figure 5-21: Honeywell T-Hawk Military Mini Drone

Table 5-22: Integrated Dynamics UAV/RPV Project Supply Source

Table 5-23: Integrated Dynamics UAV/RPV Project Accessories

Table 5-24: Israel Aerospace Industries IAI / Malat Main Areas Of Activity

Figure 5-25: Israel Aerospace Industries Malat Division

Table 5-26: L-3: Positioning

Table 5-27: Laird / Cattron Group International Customers:

Figure 5-28: Lockheed Martin Segment Positioning

Table 5-29: Lockheed Martin's operating units

Figure 5-30: Lockheed Martin Aeronautics Segment Positioning

Figure 5-31: Lockheed Martin Aeronautics Segment Portfolio

Figure 5-32: Lockheed Martin Aeronautics C130 Worldwide Airlift

Figure 5-33: Lockheed Martin Aeronautics Falcon Fighter

Figure 5-34: Lockheed Martin Electronic Systems Portfolio

Table 5-35: Northrop Grumman Partner Of Choice

Figure 5-36: Northrop Grumman Systems Segments

Figure 5-37: Northrop Grumman Portfolio

Table 5-38: Proxy Technologies Deone Potential Uses

Figure 5-39: RUAG Aerospace Business Aviation

Figure 5-40: RUAG Aerospace Military Aviation

Table 5-41: Safran Morpho Profile

Table 5-42: Safran Morpho Technology Position In The Security Chain

Table 5-43: Safran Types of Threat Detection

Table 5-44: Safran Threat Detection Technologies

Figure 5-45: Safran Systems Deployed In The Field

Table 5-46: Safran Morpho Identification Division

Table 5-47: Safran Morpho e-Documents Divisions

Table 5-48: Safran Morpho Detection and Divisions

Table 5-49: Textron First Quarter 2015 Segment Results

Table 5-50: Textron Brands

Figure 5-51: Wing Loong Drone

## I would like to order

Product name: Trains, Planes, and Drones Market Shares, Strategies, and Forecasts, Worldwide, 2015-2021

Product link: <https://marketpublishers.com/r/TDAD0B234BBEN.html>

Price: US\$ 4,000.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/TDAD0B234BBEN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970



