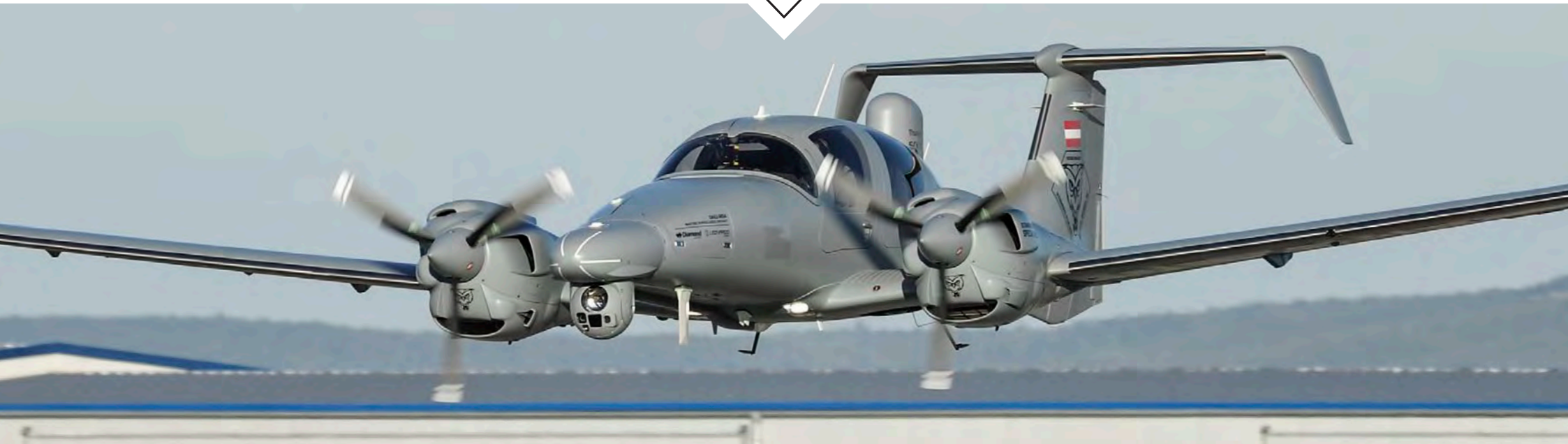


SPECIAL MISSION AIRCRAFT



CHAPTER OVERVIEW



DIAMOND AIRCRAFT SPECIAL MISSION SOLUTIONS – PRECISION FROM ABOVE



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MPP Facts and Options: Page 58 - 63



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„DEA Aviation Ltd has been working with our friends at Diamond Aircraft Industries since 2006. DEA operates one of the worlds largest fleets of Diamond Multi-Purpose Platforms, delivering specialised airborne operations to a growing number of customers worldwide. We specialise in Airborne Intelligence Surveillance and Reconnaissance, and Airborne remote sensing and have integrated a number of high-end sensors on to our aircraft. We are not tied to any particular manufacturer and so are free to choose the best combination of sensors and platform for the precise task that our customers specify. This has the added advantage of creating a full service delivery at the most cost-effective price available. The DA42 and DA62 MPP aircraft offer class leading fuel efficiency and endurance; a combination that is not only highly capable but is also environmentally friendly at this critical time in our planet’s evolution. DEA has flown tens of thousands of hours of low-carbon aviation offering a reliable service delivering excellence as standard.“

Dicky Patounas, Director Business Development, DEA Specialised Airborne Operations, UK

ABOUT DIAMOND AIRCRAFT



PERFORMANCE. EFFICIENCY. SAFETY.

Diamond Aircraft, headquartered in Austria with facilities in Canada and China, is amongst the leading aircraft manufacturer in General Aviation. Founded in 1981, Diamond has pioneered many aviation firsts and achieved numerous milestones and industry expert accolades.

Today, Diamond Aircraft has more than 1,000 employees worldwide and offers the most complete range of certified piston aircraft models: from the 2 seat single DA20 to the stunning 7 seat DA62. With its complete line of piston aircraft including a dedicated flight training concept with Single Engine Piston (DA40 NG) and Multi Engine Piston (DA42-VI) trainers, along with type-specific flight training simulators and proprietary engines, Diamond Aircraft is the only sole source provider in the fleet training market. Diamond Aircraft also made a footprint in the special mission market with the remote sensing turnkey solutions DA42 MPP and DA62 MPP and the soon to be certified aerobatic turboprop tandem trainer series DART. Diamond Aircraft uses proprietary lead-free jet fuel piston engines, made by Austro Engine GmbH (a 100% subsidiary of Diamond Aircraft Austria), for the DA40, DA42 and DA62.

Every one of Diamond's aircraft shares a common DNA, incorporating leading edge technology, not for the sake of innovation, but for superior performance, efficiency and safety.

Over 5,500 Diamond airplanes are flown by private pilots, professional flight training operators and institutions worldwide.



CIVIL AIRCRAFT



DA62



DA42-VI



DA50 RG



DA40 NG and Tundra Star (Jetfuel),
DA40 XLT (AVGAS)



DA20 series

SPECIAL MISSION AIRCRAFT



DA42 MPP



DA62 MPP



DART (coming soon)

ADDITIONAL PRODUCTS



Austro Engine



Flight simulator

The Austrian Diamond Aircraft Group comprises a network of companies that complement and match each other perfectly. But, in keeping with the expectations of our customers, we have taken this precision a step further: we added a high degree of flexibility to our globally renowned expertise. Besides its unique network family, Diamond Aircraft collaborates with numerous distribution partners and service centers all over the world.

Please visit
www.diamondaircraft.com
to find the agency you need.

WHY DIAMOND



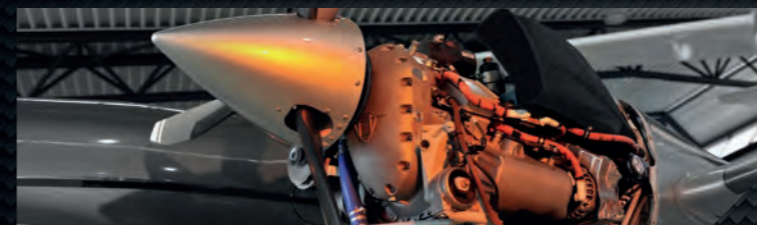
MODERN AIRFRAME

Made out of robust glass and carbon fibre composite material, Diamond aircraft have the edge over traditional aluminium airplanes when it comes to durability, aerodynamics and safety.



MODERN PROPULSION

Diamond Aircraft revolutionized the general aviation market by being the first to introduce most efficient jet fuel piston singles and twins.



MODERN AVIONICS

Arguably, all OEM's have access to the same avionics technology, however some adopt quicker than others. Diamond Aircraft was the first customer to commit to Garmin's fully integrated G1000.



COMMITMENT TO SAFETY

When it comes to safety, positive results are what really matter most. Diamond has earned a safety record, backed by real world data, that is second to none.



BEST FUEL EFFICIENCY

The manufacture of incredibly fuel-efficient airplanes has always been a cornerstone of Diamond Aircraft's strategy. All our aircraft are best in class in terms of their fuel efficiency, saving you money whenever you fly.



ONE-STOP-SHOP

No other manufacturer offers you the time-saving and quality ensuring advantage of a single point of contact, whether it's the aircraft, the engine it's fitted with, our full-size replica simulator or our pilot and maintenance training at our own TRTO.



Our primary design goal is to build aircraft that are a pleasure to fly, yet forgiving and safe, while offering maximum protection in case of an accident. To accomplish this, we invest a lot in two key safety strategies, Active and Passive Safety. The best accident protection is to avoid them in the first place. Active Safety features and characteristics help do just that. Passive Safety features are the second line of defense and help minimize the probability and degree of injuries.



TURNKEY SOLUTION CONCEPT



COST-EFFICIENT FIXED WING
REMOTE SENSING PLATFORM



AIRBORNE
SENSORS



CORRESPONDING
PILOT, OPERATOR AND
MAINTENANCE TRAINING



SPARE PARTS,
TOOLING &
DELIVERY



DATA LINKS



GROUND STATIONS



GLOBAL SUPPORT



Like no other special mission aircraft supplier, Diamond Aircraft has taken its MPP concept into a 360° turnkey solution: one single point of contact. The special mission turnkey solutions comprise a cost-efficient fixed wing remote sensing Diamond Aircraft platform, airborne sensors, data links, ground stations, global support, spare parts, tooling, transport as well as the corresponding pilot, operator and maintenance training.

APPLICATIONS



ONE AIRCRAFT - MANY MISSIONS



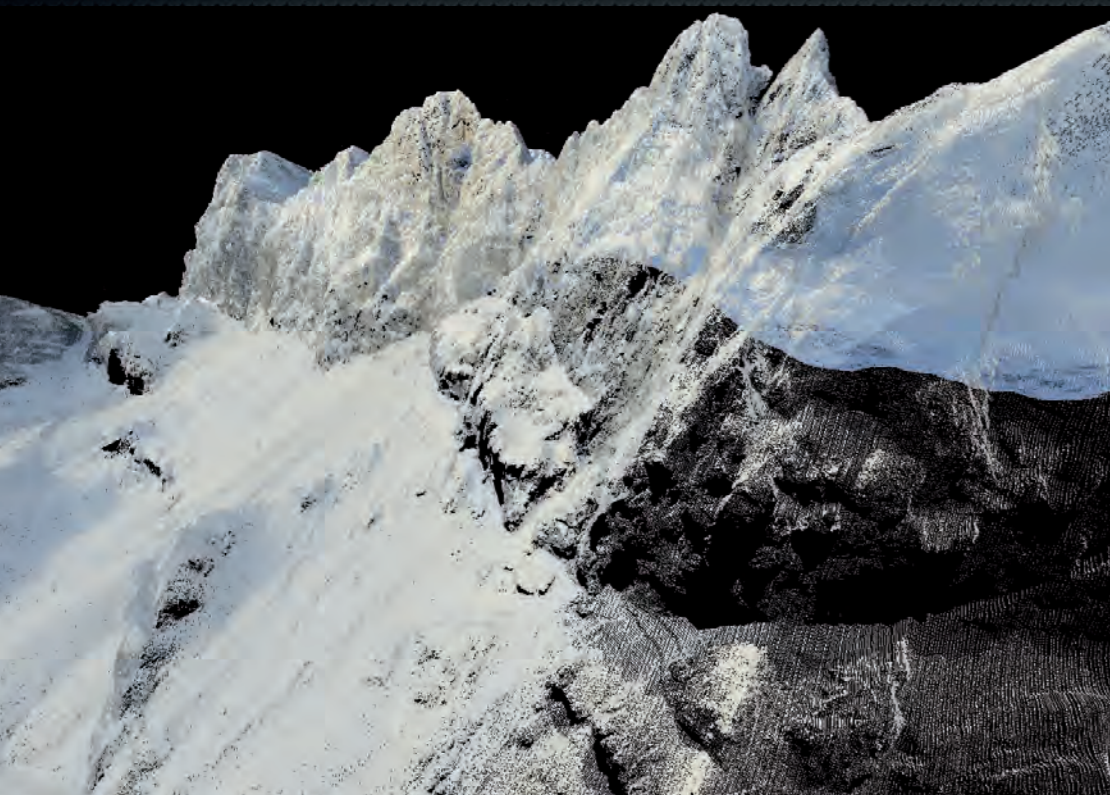
Surveillance & Reconnaissance



Aerial Surveys



Broadcasting & More



BORDER CONTROL

- Smuggling • Drug interdiction • Human trafficking • Anti Terrorist Activity • Population migration

GENERAL SURVEILLANCE

- Event protection (marches, demonstration, etc.) • Public order & riot control • VIP protection

MARITIME PATROL

- Coastal patrol • Illegal fishing • Pirate activity • Search and rescue

DISASTER MANAGEMENT

- Fire management • Chemical spills • Flood management • Road, rail crashes • Landslides

ENVIRONMENTAL MONITORING

- Chemical and oil spill detection • Pipeline leak detection • Pollution control • Atmospheric sampling • Animal control

INFRASTRUCTURE MONITORING

- Power line inspection • Pipeline leak inspection (e.g. leak, sagging) • Monitoring of gas and oil storage, water supply systems • Monitoring of critical buildings • Railroad and highway monitoring

RADIO MONITORING

- Border guard • Maritime rescue • Military

INFRASTRUCTURE PLANNING

- Powerline planning/monitoring • Pipeline planning/monitoring • Railroad and highway planning/monitoring • Visualization of planned projects (bridges, buildings, etc.)

MINING AND EXPLORATION

- Natural resource exploration • General mine support operations • Monitoring of compliance with mining laws & rules

DISASTER PREVENTION

- Geo-hazard prevention • Landuse mapping • Flood prevention • Fire fighting • Mass movement detection • Detection of ocean pollution

VEGETATION ANALYSIS

- Landuse mapping • Precision farming • Brownfield monitoring • Forest canopy mapping

SECURITY MISSIONS

- Change detection • Detection of camouflaged vehicles • Detection of illegal ship unloading • Monitoring of compliance with mining and building law

MAPPING

- Urban and rural mapping • Cadastral survey • Landuse and corridor mapping • Orthophotos • 3D mapping • Topographic maps

MEDIA

- Live newsgathering • Live coverage of sporting and mass events • Midpoint relay • High-definition videos



The MPP has been specially designed for carrying multi-functional aerial sensors, like EO/IR cameras, land and sea radars, COMINT solutions, airborne laser scanners or large format digital aerial cameras, and more. Mission kits can be mounted on specific hard points located on the nose and belly of the aircraft as well as in the cabin and nose luggage compartments.

APPLICATIONS



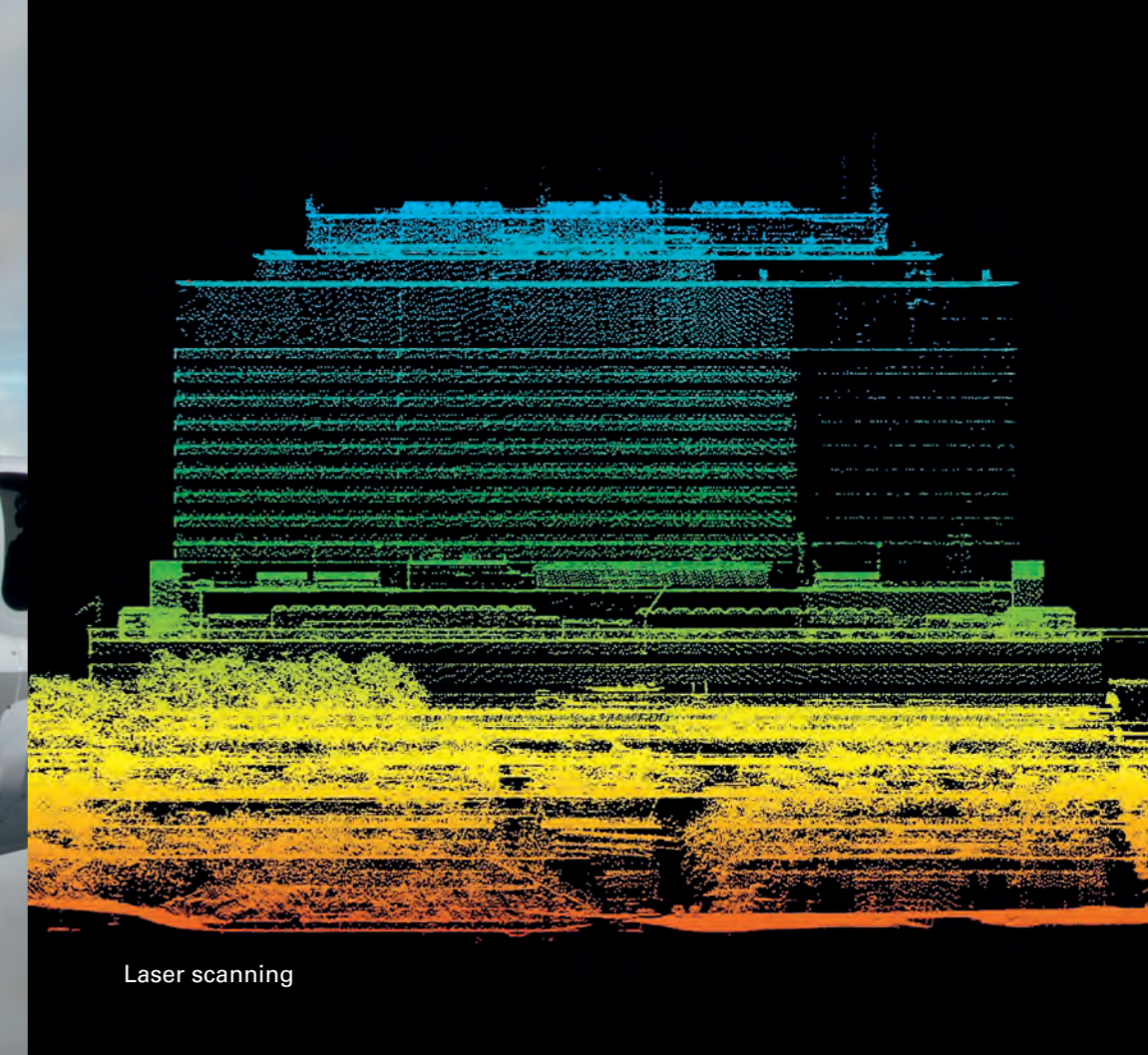
Night vision



Flood prevention



Atmospheric sampling (volcanic ash measurement)



Laser scanning



Fire fighting



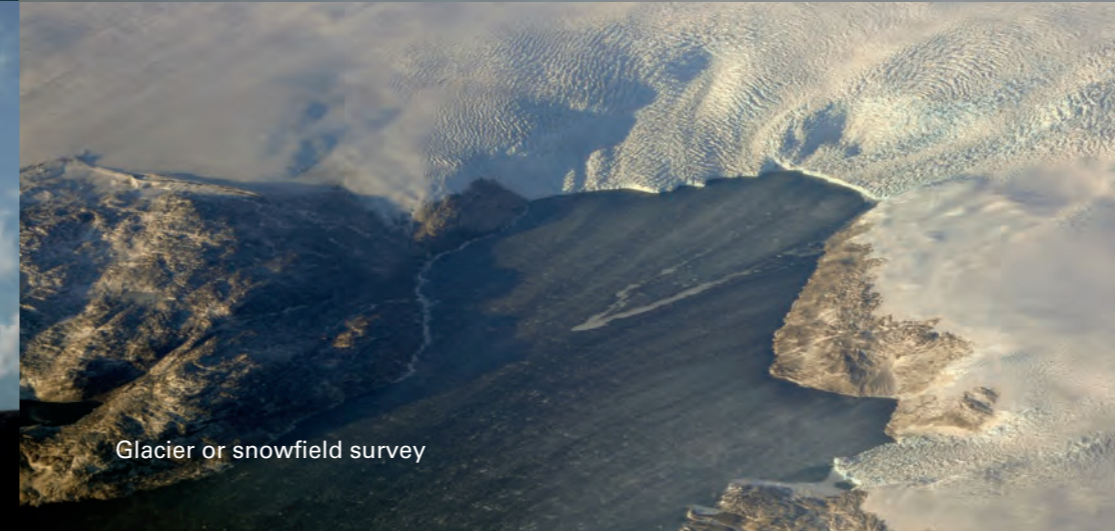
Real time information



Oil spill detection



Pollution control



Glacier or snowfield survey



Landuse mapping

AIRCRAFT & PODS



SPECIAL MISSION PLATFORMS

GUARDIAN

DA42 MPP & DA62 MPP INTRODUCTION

The attributes that make our aircraft so successful, make them excellent platforms for any special mission operation. Diamond offers an extensive portfolio of factory approved sensors, communication and datalink installations for a wide variety of missions. Additionally, Diamond is an OEM that welcomes and supports the development and certification of tailor-made configurations to meet each customer's specific requirements.

DA42 MULTI PURPOSE PLATFORM



DA62 MULTI PURPOSE PLATFORM



UNIQUE FEATURES

LOW OPERATING COSTS

- Low fuel consumption • Short downtimes • Ultra-long endurance
- 100 - hour maintenance interval

LOW NOISE AND INFRARED FEATURES

- Virtually undetectable • On-top exhaust system • Matt grey or belly surveillance painting

POWERFUL ENGINE

- Worldwide fuel availability & operability • Turbocharged engines give exceptional 'Hot & High' performance • Low fuel consumption based on advanced direct fuel injection system • Simple engine management handling (ECU) • Multi-fuel certified

SAFETY FEATURES

- All weather capability day and night (certified icing protection)
- Garmin G1000 NXi glass cockpit - airliner standard
- Fully integrated GFC700 autopilot • EASA/FAA single pilot certified • Damage tolerant airframe: 26 g crash tested, 10 g flight tolerance • Fuel protection system • Positive rate of climb at MTOM with one engine inoperative

TOMORROW'S TECHNOLOGY

- Advanced composite technologies developed by Diamond Aircraft
- Composite design offers high strength to weight ratio

MINIMUM DOWNTIME

- Overnight on-site maintenance for engines and airframe • World-wide support • Unlimited life time for all composite components



MPP at a glance
+ Difficult to detect
+ High useful load
+ Economical to operate
+ Exceptional endurance & range
+ Proven performance
+ Global support
+ Production aircraft based
+ Full OEM level integration

DA62 MPP



DA62 MPP ISR FEATURES



OPTIONAL GREY / CAMOUFLAGE PAINTING

REDUCING SUN REFLECTIONS

SATCOM POD (L, KA, KU, X BAND)

DELIVERING LIVE SENSOR DATA TO THE HQ
(NOT SHOWN IN THE PICTURE)

INTERNET IN THE SKY DIRECT SATELLITE ACCESS

MISSION COMPARTMENT

HARD POINTS AND/OR EQUIPMENT RACK
TO HOLD THE MISSION EQUIPMENT

ON-TOP EXHAUST SYSTEM

LOW NOISE + LOW IR SIGNATURE

WX MULTI PURPOSE NOSE

Max. 65 kg (132 lbs)
Max. 500 mm (20")

WEATHER RADAR
EO/IR CAMERAS



MISSION GENERATOR

100 A

UNDERFLOOR POD (RECCE POD)

LONG RANGE OBLIQUE PHOTOGRAPHY SENSOR
VARIOUS SENSORS POSSIBLE

OPERATOR STATION

ERGONOMIC DESIGN TAILORED FOR
THE NEEDS OF THE OPERATOR
MODULAR FOR 1 OR 2 OPERATORS

LOS LINK

DELIVERING IN LOW LATENCY
LIVE INFORMATIONS TO THE
DECISION MAKERS ON THE GROUND

DA62 MPP



DA62 MPP: A NEW GENERATION OF REMOTE SENSING TURNKEY SOLUTIONS

The DA62 MPP is the next largest Diamond Surveillance Aircraft, offering increased performance, space and capability. The fully composite DA62 MPP features the latest in tracking and sensor technology and sets the benchmark as the most cost-effective, powerful and versatile airborne platform in its class today.



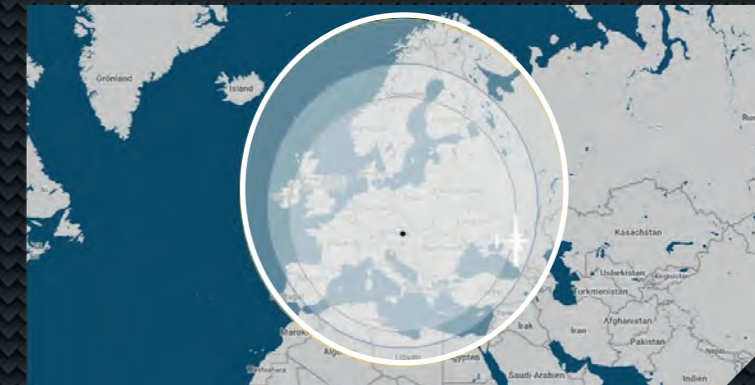
AT A GLANCE

- High payload • Roomy fuselage • Field proven composite technology: no corrosion, unlimited lifetime • State-of-the-art avionics (airliner standard): Garmin G1000 NXi glass cockpit, fully integrated GFC700 autopilot • Single lever operation (EECU)
- Exceptional range and endurance: up to 10 hours non-stop missions • Heavy fuel technology: 180hp Austro Engine AE330, worldwide operability • Lowest total operating costs • Low Noise & IR signature (On-top exhaust system) • Matt grey finish: reduce reflections and observability

MISSION APPLICATIONS

- Search & rescue • Coastline patrol • Border patrol
- Force protection • Fire fighting • Disaster management
- Pipeline monitoring • Infrastructure monitoring • and more

DA62: RANGE up to 1,264 nm/2,341 km



DA62 MPP KEYFACTS

Consumption 35% total 28 lt/h or 7.4 gal/h	Mission Speed at 45% power 233 km/h or 126 kts TAS	Max. Altitude 6,096 m or 20,000 ft	Payload 710 kg or 1,565 lbs



„In the search of a cost efficient, flexible and modular platform the Diamond DA62 fulfilled all of our requirements for dynamic operations. Also the fact that the DA62 uses JET-A1 fuel was crucial to be able to operate in our area.“

Fredrik Pedersen,
Andoya Space

DA62 MPP SURVEYSTAR



photo © by RIEGL



THE DA62 MPP SURVEY CONFIG

In cooperation with our partners, Vexcel Imaging, IGI, Somag as well as RIEGL Laser Measurement Systems, Diamond created a strong and modern European state-of-the-art survey configuration. The extraordinary low noise signature of the aircraft, supported by the on-top exhaust systems, in combination with the low fuel burn fits perfectly to the idea to operate silently and environmentally friendly.



SINGLE SEAT CONCEPT

The standard available seat bench of the DA62 was replaced by two individual DA62 pilot seats to significantly increase the comfort and generate more room for the operator. The seats were re-positioned backwards by 50 mm, there is a console in the middle for standard Dzus units or other tailor-made applications as well as the opportunity to benefit from the adjustable backrest for the operators.

SURVEY HATCH CONCEPT

To have the most clean and aerodynamic shape, Diamond follows the idea to integrate survey cameras as well as the stabilization mount in the cabin by replacing the right-hand operator seat. The easy access to the large luggage compartment allows Diamond an easy installation of all additional mission equipment like data storage units, FMS and others. After a year of massive development effort, Diamond received two EASA STC major changes, 62-001 which describes the 20"/ø508 mm modification in the fuselage centre section as well as the EASA STC 62-002 which describes the single seat configuration modification.

TYPICAL SURVEY MULTI MISSION SOLUTION

A Vexcel UltraCAM Eagle or Osprey incl. Ultronav, a SOMAG GSM4000 stabilization mount install in the cabin in combination with RIEGL VQ-780 II airborne scanner in the Universal Nose.



„The DA62 is applicable very versatile. This is due on the one hand to the wide range of speeds at which we can operate the aircraft and on the other hand to the possibility of refueling the aircraft with jet fuel. The low consumption of the DA62 of approximately 50 liters per hour is another important point when we consider efficiency“

Aicke Damrau, GeoFly, launch customer

DA62 MPP SURVEYSTAR



DA62 MPP MSA



MARITIME SURVEILLANCE AIRCRAFT

ATOS
(AIRBORNE TACTICAL
OBSERVATION AND SURVEILLANCE)

BLOS
(BEYOND LINE OF SIGHT)
SATCOM



EO/IR CAMERA
ON WX MULTI PURPOSE NOSE

GABBIANO TS-80
ULTRA-LIGHT RADAR



MISSION EQUIPMENT CONFIGURATION

EO/IR CAMERA Safran „EuroFlir 410“

The EuroFlir 410 from Safran ultra-long-range electro-optical system offers the performance and power to meet the top requirements of an EO/IR sensor.

KEY FEATURES

- Wide field-of-view & ultralong-range observation at the same time
- Precise target geolocation & designation thanks to full laser functions and embedded INS
- Enhanced detection & identification for greater mission effectiveness
- Non ITAR

TECHNICAL CHARACTERISTICS

- 4-axis stabilization & INS embedded
- Digital Video: HD-SDI, Ethernet
- Analog Video: STANAG 3350A
- Dimension: Ø 406 mm (16")
<53 kg (<116,8 lbs)
- E-zoom: down to x4
- 10 sensors
- TV: 0.4 - 0.7µm; 25° up to 0.33°;
1920 x 1080
- NIR: 0.7 - 0.95 µm; 0.39°; 1920 x 1080
- SWIR: 0.95 - 1.7µm; 0.55°; 640 x 512
- MWIR: 0.4 - 0.7µm; 33.3° up to 1.2°;
1280 x 720

SATCOM

Thuraya's L-band satellite network enables the real-time transmission of HD aerial video and position data from the aircraft to the mission control centre. The live surveillance imagery, flight tracking, and duplex data will be displayed on the ground using SCOTTY's Mobile HD portable receive station that supports critical applications including live exchange of ISR information, transmission of border/coastal patrol imagery and first-responder support.

KEY FEATURES

- Low weight
- COTS Components
- PAX and PIC communication
- Newest generation hardware coder/decoder and processing unit
- Audio, live Full-HD video and real-time high speed data applications over satellite
- Full duplex video communication
- Snapshot transmission and video recording for all kind of different applications
- Built in AES256 encryption
- User friendly operation

TECHNICAL CHARACTERISTICS

- Weight: 16.68 kg (36.8 lbs)
- Power: 250 Watts typical maximum
- Certification: DO-160G
- Frequency: L-Band
- Temperature: -20°C to +55°C
- Data Rate: Dual Channel with data Rates up to 444 kbps per channel (channel bundling possible)

upon request the system can be modified to be compatible with Inmarsat (data rates may differ)

GABBIANO ULTRA-LIGHT TS-80 RADAR

The light weight surveillance radar provides an extensive suite of modes including optimised maritime patrol capabilities, high resolution ground mapping via synthetic aperture radar (SAR) modes, ground moving target indication (GMTI) and weather avoidance modes.

KEY FEATURES

- Low power consumption
- 360° azimuth scan surveillance
- LPI capability
- TWS up to 200 targets
- ECCM capabilities
- Short blind zone
- High resolution imaging modes and target recognition
- Maritime surveillance, up to 160NM
- High reliability
- Standard and flexible interfaces
- Low weight
- COTS Components
- User friendly operation

TECHNICAL CHARACTERISTICS

- Weight: 47 kg (104 lbs)
- Rotation: 360°
- Frequency: X-Band
- Interface: Ethernet plus Mil Std 1553B, ARINC 429, RS422 and ARINC 708
- MTBF: 2000 hours
- Input power: 1,100W single power source 28VDC
- Fully coherent transmitter: Solid state power amplifier
- Average transmitted power: 80W
- Air cooled



The DA62 MSA is outfitted with a full Intelligence, Surveillance and Reconnaissance (ISR) suite based on Leonardo's ATOS (Airborne Tactical Observation and Surveillance) mission system and deliver a single, intuitive operational picture to the crew. Sensor options will also be offered for users who require additional capability, including Leonardo's SAGE electronic support measures (ESM) system and Spider communications intelligence (COMINT) system. SAGE provides tactical threat awareness and strategic intelligence gathering in the radio-frequency (RF) environment, while Spider can detect, intercept, identify and geo-locate communications of interest.

DA42 MPP GENERAL FEATURES



OPTIONAL GREY PAINTING

REDUCING SUN REFLECTIONS

LARGE ELEVATOR TIPS

TO INCREASE YAW STABILITY FOR PRECISION FLIGHTS

MISSION COMPARTMENT

HARD POINTS IN THE LUGGAGE
COMPARTMENTS FOR MOUNTING
EQUIPMENT RACKS

OPERATOR STATION

MODULAR INTERIOR
CONFIGURATION FOR
1 OR 2 OPERATORS

BUBBLE CANOPY

ALLOWS A BETTER VIEW
FOR THE PILOTS WHILE
WEARING HELMETS



GLOBAL OPERATION

FUEL AVAILABILITY DUE TO WORLD-WIDE
SUPPORT OF JET FUEL

IN-HOUSE DESIGNED JET FUEL ENGINES

170 HPS PER ENGINE

ULTRA LOW FUEL CONSUMPTION

ON-TOP EXHAUST SYSTEM

(LOW NOISE + LOW IR SIGNATURE)

POWER

ADDITIONAL WIRING TUNNELS CONNECT
THE HARD POINTS OF THE EQUIPMENT
COMPARTMENTS

DEDICATED POWER SOURCE
FOR MISSION EQUIPMENT

GARMIN G1000 NXi COCKPIT

FULLY INTEGRATED GLASS COCKPIT AND
FLIGHT MANAGEMENT SYSTEM

SYNTHETIC VISION TECHNOLOGY

GFC700 AUTOPILOT
INCL. YAW DAMPER, FLIGHT DIRECTOR

DA42 MPP GUARDIAN



ISR CONFIGURATION MICROWAVE LINE OF SIGHT DOWNLINK

GUARANTEED STABLE ENCRYPTED DATA TRANSFER IN HD QUALITY
(1000 MHZ TO 5 GHZ) UPTO 100 NM (180 KM) - S-BAND, C-BAND.

OPERATOR STATION

MODULAR INTERIOR CONFIGURATION
FOR 1 OR 2 OPERATORS

SATCOM

BEYOND LINE OF SIGHT UP- AND DOWNLINK



UNIVERSAL NOSE

ALL EO/IR AND MULTI MEDIA TURRETS
UPTO 15.5" AND 65 KG (143 LBS)
AIRBORNE LASER SCANNER SYSTEMS
ASH SENSORS

OPTIONAL UNDERFLOOR POD

MARITIME/LAND RADAR
VHF/UHF DIRECTION FINDER

MISSION COMPARTMENT

HARD POINTS IN THE LUGGAGE
COMPARTMENTS FOR MOUNTING
EQUIPMENT RACKS

OPTIONAL GREY PAINTING

REDUCING SUN REFLECTIONS

DA42 MPP GUARDIAN



DA42 MPP GUARDIAN: PRECISION FROM ABOVE

Tomorrow's mission is different than yesterday's? No problem for the twin engine, four-seater DA42 MPP GUARDIAN remote sensing platform. Your flexible and cost-efficient ISR turnkey solution with outstanding performance.



AT A GLANCE

- Powerful and cost efficient
- Proven performance
- High Payload
- Garmin G1000 NXi glass cockpit, GFC700 autopilot
- Twin 170hp Jet fuel AE300 Engines
- More than 100 units worldwide

MISSION APPLICATIONS

- Covert Surveillance
- General Surveillance
- Border Patrol
- Maritime Patrol
- Disaster Management
- Environmental Monitoring
- Infrastructure Monitoring
- Radio Monitoring

DA42 MPP RANGE: up to 1,065 nm/1,974 km



DA42 MPP KEYFACTS



Consumption 35% total
24.2 lt/h or 6.4 gal/h



Minimum Speed
132 km/h or 71 kts



Max. Altitude
5,486 m or 18,000 ft



Payload
634 kg or 1,398 lbs



„After we received such an overwhelming response to this aircraft, we recognized that we needed to immediately purchase our first DA42 GUARDIAN to get ahead of demand. There is really no other certified aircraft that offers so much capability at such a low cost to purchase and operate.“

Dr. Loren Poulsen PhD, DA42 MPP GUARDIAN Operator, Montana

DA42 MPP GUARDIAN



DA42 MPP MISSION RANGE: ENDURANCE UP TO 8 HOURS FLIGHT TIME

7 HOURS TIME OVERTARGET:

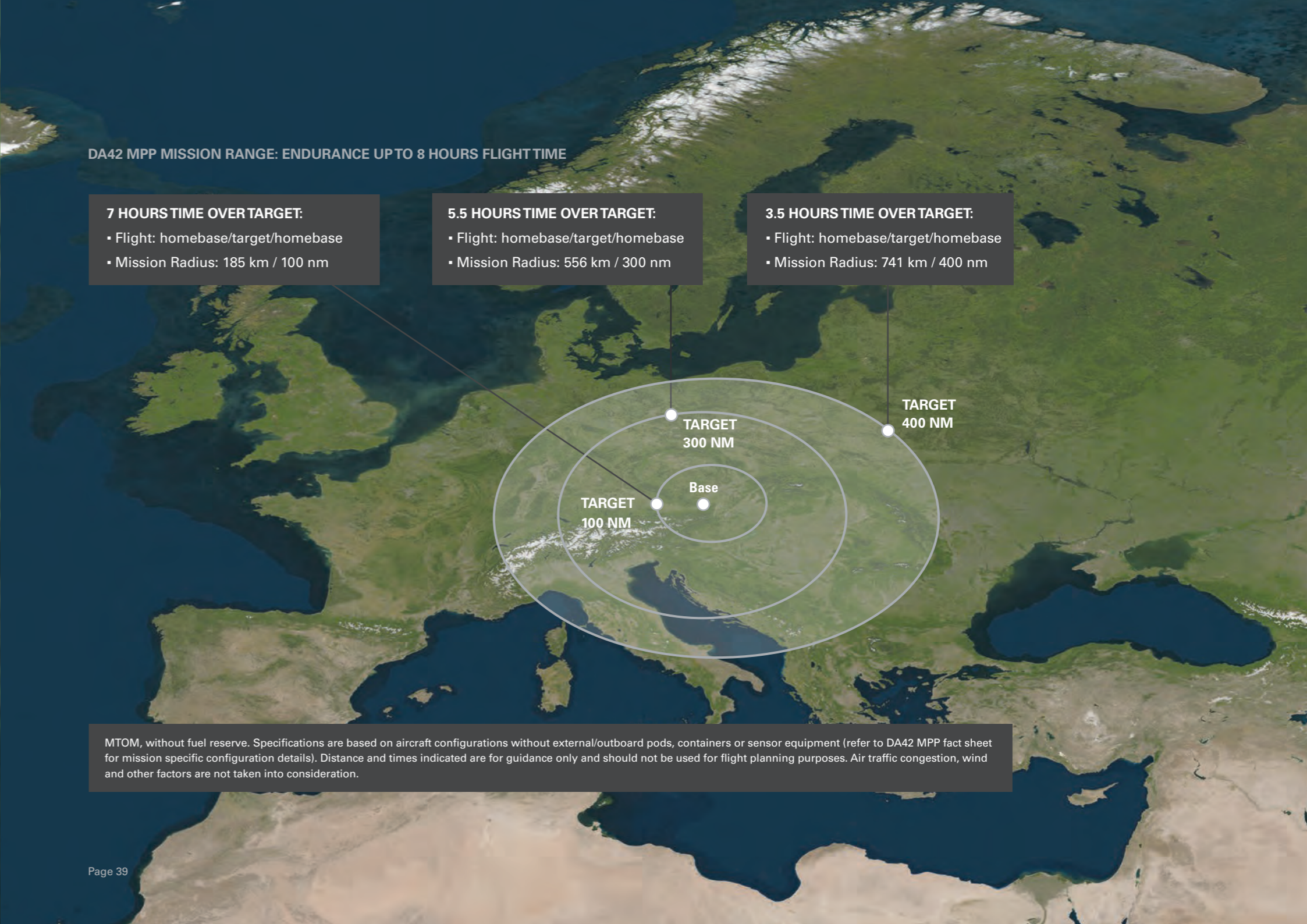
- Flight: homebase/target/homebase
- Mission Radius: 185 km / 100 nm

5.5 HOURS TIME OVERTARGET:

- Flight: homebase/target/homebase
- Mission Radius: 556 km / 300 nm

3.5 HOURS TIME OVERTARGET:

- Flight: homebase/target/homebase
- Mission Radius: 741 km / 400 nm



MTOM, without fuel reserve. Specifications are based on aircraft configurations without external/outboard pods, containers or sensor equipment (refer to DA42 MPP fact sheet for mission specific configuration details). Distance and times indicated are for guidance only and should not be used for flight planning purposes. Air traffic congestion, wind and other factors are not taken into consideration.

DA42 MPP GUARDIAN

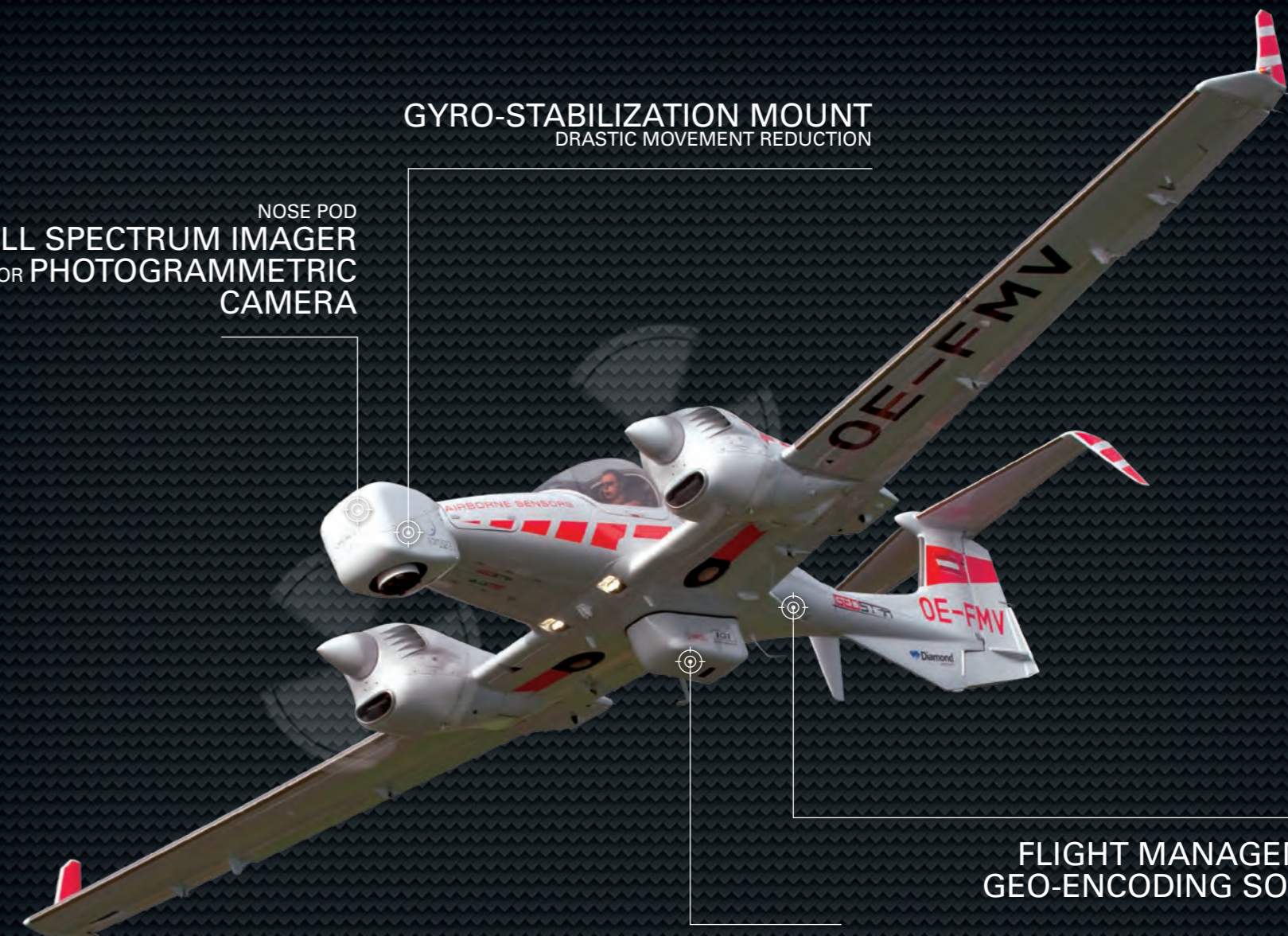


DA42 MPP GEOSTAR



WITH FULL SPECTRUM IMAGER
OR PHOTOGRAMMETRIC
CAMERA

GYRO-STABILIZATION MOUNT
DRASTIC MOVEMENT REDUCTION



WITH AIRBORNE LASER SCANNER SYSTEM

FLIGHT MANAGEMENT &
GEO-ENCODING SOLUTION

DA42 MPP GEOSTAR



DA42 MPP GEOSTAR

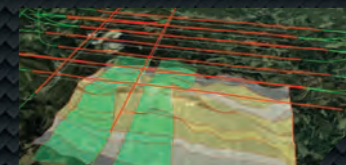
Collect laser-scanning and photo-grammetry data during one single flight or benefit from unparalleled hyper spectral detection capabilities. The DA42 MPP Geostar is perfectly suited for surveying cities, land areas, critical infrastructure, glaciers or snow fields, but also for mapping damages caused through natural disasters. The hyperspectral variant fits for ISR, mineralogy or environmental applications.

APPLICATIONS

- Surveys of cities, land areas, critical infrastructure, glaciers, snow fields
- Mapping damages caused through natural disasters
- ISR Missions • Mineralogy • Environmental applications

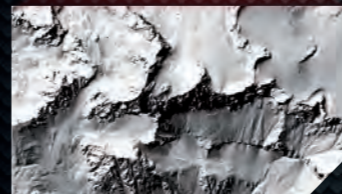
MISSION PROFILE: COMBINED DATA ACQUISITION (SEE GRAPHIC BELOW)

A photogrammetric camera, installed in a special pod on the aircraft's nose, delivers accurate representations of the Earth's surface, called ortho-photos (aerial photos). A laser-scanner captures the terrain topography by firing a laser and measuring the time it takes for the laser to be reflected back from a point. The result of the collected measurements is a digital terrain model in the form of a point cloud. The scanner is mounted on the belly of the aircraft in a specifically designed pod. By merging the ortho-photo with the point cloud you get a precise, realistic 3D model of the object.

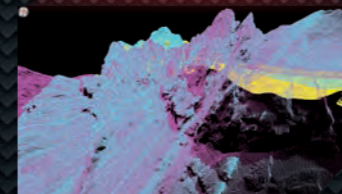


Flight planning / trajectory

Software application photos © by RIEGL



Orthophoto



ALS-3D point cloud



3D-digital terrain model / 3D-digital surface model

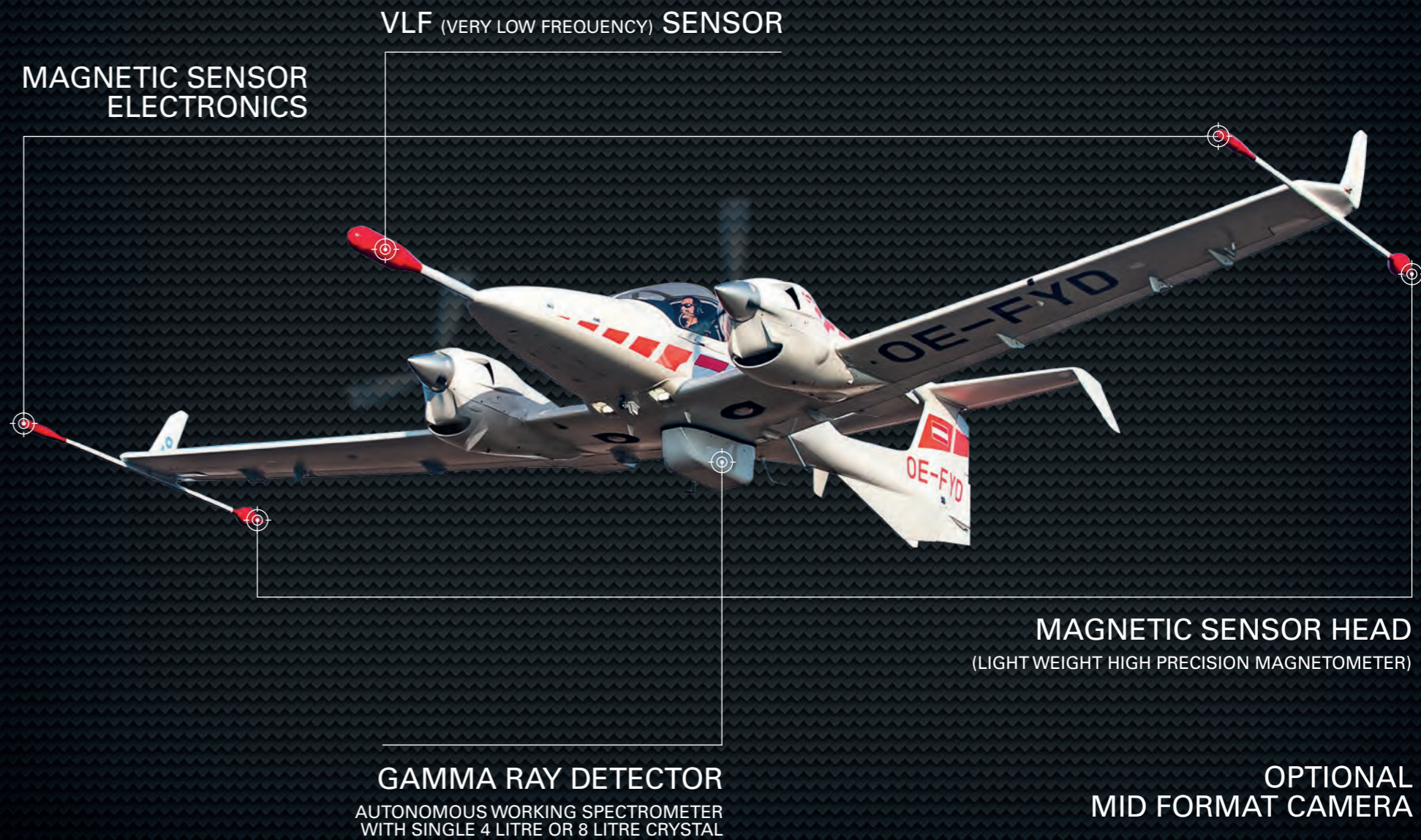
„Diamond's DA42 MPP is a highly innovative and efficient twin engine plane which makes the perfect carrier for our advanced LiDAR sensors to offer a turnkey, cutting-edge airborne LiDAR solution for the surveying market. RIEGL has been working closely with Diamond for many years and is proud to operate its own Diamond DA42 MPP as an excellent choice for system integration, testing, and customer demonstrations.“

Dr. Johannes Riegl, CEO RIEGL Laser Measurement Systems, Austria

DA42 MPP TERRASTAR



RADIATION, MAGNETIC AND VLF SURVEYS



DA42 MPP TERRASTAR



DA42 MPP TERRASTAR

The first aerial turnkey sensor platform worldwide that carries VLF (Very Low Frequency), radiation detection and magnetometer sensors. Your benefit: you can conduct VLF, radiation and magnetic monitoring during one single flight - saving time and money.



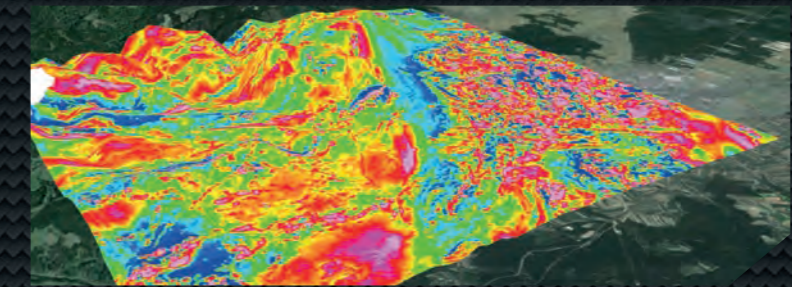
RADIATION SURVEY & MONITORING APPLICATIONS

- Mineral exploration: mineral deposits, uranium, rare earth elements
- Hydrocarbon exploration: potassic/uranium alteration
- Baseline surveys: for mining and environmental monitoring
- Contamination mapping and detection of radioactive waste storage, industrial sites and nuclear power plants
- Emergency response: detection of fallout and nuclear contamination
- Identification of radon prone areas: identifying areas where residents may be at risk to exposure to high levels of radon gas
- Detection and mapping of both natural and artificial radioactive emanations (gamma rays)



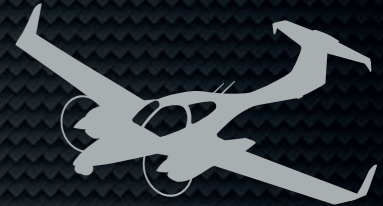
MAGNETIC SURVEY APPLICATIONS

- Exploration of oil, gas and mineral deposits
- Geological structure mapping, mapping of non-magnetic lithologies, estimating unit thickness and continuity depth
- Environmental monitoring
- Pipeline and sub surface infrastructure monitoring
- Discrimination between cultural and small geological sources such as Kimberlite
- Detection of unexploded ordnance (UXO)



VERY LOW FREQUENCY SURVEY APPLICATIONS

- Detection of conductive bodies of fluid – containing water – in bedrock or in the vicinity of fractures
- Mineral exploration – locating graphite and base metal conductors
- Groundwater exploration
- Exploration of contaminated sites
- Mapping of geological features, including the apparent dip of fault zones and shear zones
- Providing information for infrastructure planning



„All integrated sensors in combination with the aircraft composite construction deliver ideal measurement results of highest quality. The unique and simple operation is an additional benefit for a possible single pilot operation.“

DI Michael Pregesbauer, CEO,
Geoprospectors GmbH

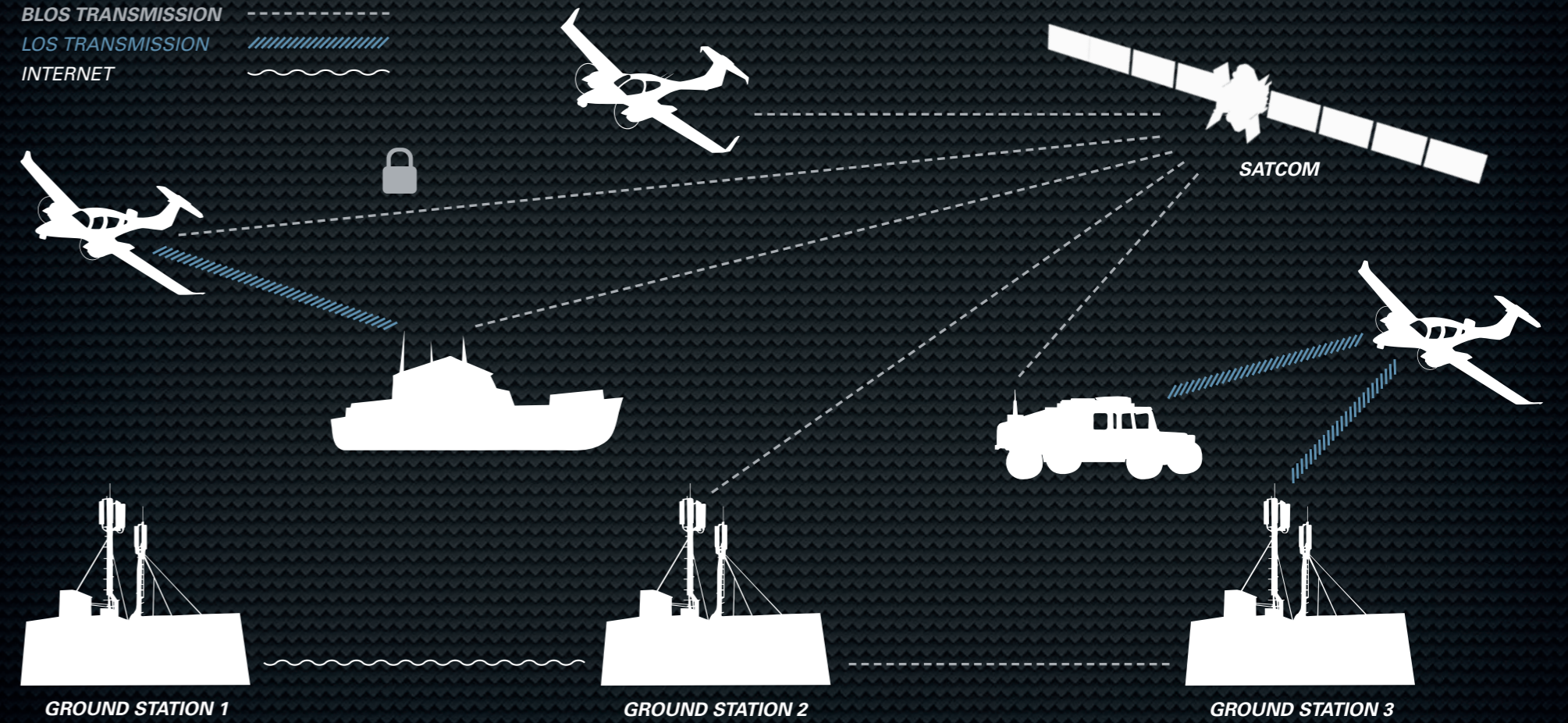
DATA LINKS AND GROUND STATION SOLUTIONS



DATA LINKS

Our Special Mission Aircraft can be equipped with sophisticated Line of Sight (LOS) and Beyond Line of Sight (BLOS) Systems for live data transmission to decision-makers.

An onboard Airborne Transmitter delivers secure HD video, IP data and metadata from a wide variety of sensors to Ground Operation Centers, enabling real time situational awareness.



DATA LINKS AND GROUND STATION SOLUTIONS



GROUND STATION SOLUTIONS

Diamond Aircraft offers a number of customized ground stations - designed to operate as the counterpart to our Special Mission Aircraft. Easy setup for in the field operations and any type of mission is guaranteed. Command and control your mission from wherever you want!

Diamond Aircraft saw the need of customers for easy deployable and reasonable solutions for time-critical decisions and developed a series of ground stations, which can be adapted according to the customer's mission needs - from handhelds to container solutions. Standard functions of each variant, amongst others are live video transmission from the airborne platform to the ground station(s) via different datalinks including META data, voice communications, mission planning and moving map, video management as well as secured connectivity with organizations' headquarters.



Command Compact Station



Command Container



Command Vehicle

Command Station HQ:
We also offer customized ground stations for organizations' headquarters.

Designed from Diamond top engineers for rapid deployment our Command Compact Station is ideal for various agencies and governmental organizations. The ground-station comprise a number of sophisticated devices, which are able to communicate and smoothly control the airborne sensors from the Diamond special mission aircraft. A perfect groundstation solution for all decision makers who have only limited ground infrastructure available.

DART PROGRAM



LARGEST
INTERNAL FUEL TANK
CAPACITY IN TRAINER CLASS
ENDURANCE: >3.5 HOURS

CANOPY
WITH SUPERIOR
SURROUND VIEW

TANDEM SEAT
EJECTION SEATS (OPTIONAL)
TOUCH SCREEN AVIONICS
HOTAS

FULL COMPOSITE AIRFRAME
ALLOWS FOR SUPERB
AERODYNAMIC DESIGN

DOUBLE SLOTTED FLAPS
FOR **MAXIMUM LIFT**
LOW STALL SPEED
SHORT LANDING
DISTANCES

COMPOSITE 5 BLADE
PROPELLER
POWERED BY FUEL & COST
EFFICIENT TURBINE

ROBUST LANDING GEAR
FOR UNPAVED SURFACE OPERATION

PROVEN HIGH SPEED WING

DART PROGRAM



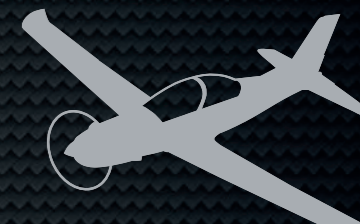
PROVEN PROPULSION SYSTEM

Powered by the proven and certified 750 SHP PT6A-25C turboprop engine from Pratt & Whitney Canada. The engine is featuring protection systems such as torque limiter and overspeed governor. The engine drives a five blade, full feather natural composite MT propeller.



TOP-NOTCH COCKPIT

The Garmin G3000 dual glass cockpit features touchscreen control, 14.1-inch diagonal WXGA high-resolution cockpit displays, 5.7-inch high-resolution GTC 575, Synthetic Vision Technology, extended 16:9 width-to-height ratio.



DART-750 SIM

The DART-750 Simulator is modelled after the real aircraft with high fidelity flight model software representative for the DART-750. The instructor operating station (IOS) brings the flight instructor inside the cabin while having full control over the training session.



DART-750 PRELIMINARY KEY FACTS:



Load Factor
+6 / -4



Endurance
3.5 hours +

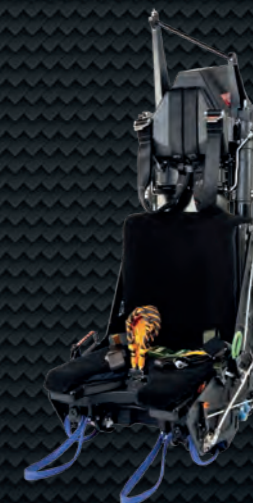


Max. Speed
265 kts or 491 km/h



Max. Take-off power
750 SHP or 559 kW

OPTIONAL EJECTION SEAT Martin Baker MK16



The DART-750 will be a civil certified all-carbon fiber aerobatic turboprop trainer in tandem seat configuration, equipped with state-of-the-art avionics and a powerful turboprop engine. Based on the DART-750, Diamond is offering a DART Basic Training Solution, comprising the aircraft, a proprietary DART FNPT II Simulator and DART CBT (Computer Based Training) experience.



OPTIONS FOR DA62 MPP AND DA42 MPP

Aircraft Options

TKS anti-icing system	25 kg	55.1 lbs
Auxiliary tanks (+ 26 USGal)	20 kg	44 lbs
Integrated oxygen system	14 kg	30.8 lbs
Mobile oxygen system	4 kg	8.8 lbs
Air condition RACC system	41 kg	90 lbs
Flight data recorder	4 kg	9 lbs
Electrical adjustable rudder pedals	N.A.	N.A.
Custom exterior striping	N.A.	N.A.

MPP Options

Noise & IR-signature reduction kit	7 kg	15 lbs
Operator console (replaces co-pilot seat)	0 kg	0 lbs
Mission generator 2.8 KW (28V/100 Amps)	10 kg	22 lbs
HF aircraft radio communication (2-30MHz)	5 kg	11 lbs
Garmin tactical software (Search & Rescue)	0 kg	0 lbs

Avionics Options

Honeywell KN63 DME	3 kg	6.6 lbs
WX500 Stormscope	3 kg	6.6 lbs
Avidyne TAS 605 traffic advisory system	7 kg	15.4 lbs
Garmin GSR 56 satellite receiver system	1 kg	2.2 lbs
Becker 3500 ADF	4 kg	9 lbs
Garmin synthetic vision	0 kg	0 lbs
Garmin chart view	0 kg	0 lbs
Garmin GWX70 Weather Radar	N.A.	N.A.

DA62 MPP - FACTS AND SPECIFICATIONS

Power plant		
Engine	2x AUSTRO ENGINE AE330 (180 hp, turbo charged)	
Propeller	2x MT 3-blade hydraulic constant speed propeller	
Fuel grades	Jet A-1, Jet A, TS-1 (Russia, Ukraine), RT (Russia, Ukraine), No. 3 Jet Fuel (China), JP-8	
Dimensions / mass / loading		
Length / height ¹⁾	9.19 m / 2.82m	30 ft 2 in / 9 ft 3 in
Wing span	14.55 m	47 ft 9 in
Crew	1 or 2 pilots	1 or 2 operators
Typical mission crew	1 pilot	1 operator
Empty weight	1,590 kg	3,505 lbs
Useful load	710 kg	1,565 lbs
Max. take off mass	2,300 kg	5,071 lbs
Max. usable fuel capacity main tank	326 lt / 261 kg	86 US gal / 576 lbs
auxiliary tank	189 lt / 151 kg	50 US gal / 335 lbs
	137 lt / 110 kg	36 US gal / 241 lbs

Performance (MTOM, ISA)		
Max. cruise speed (14,000 ft, MCP)	356 km/h TAS	192 kts TAS
Min. operation speed	140 km/h IAS	76 kts IAS
Consumption at 35% power (loiter speed) in total	28 lt/hr	7.4 USGal/hr
Max. airborne operations time	11.7 hours	11.7 hours
Typical airborne operations time ²⁾	6 - 8 hours	6 - 8 hours
Max. range at 50% power in 14,000 ft (standard tank / incl. auxiliary tank)	1356 km / 2,341 km	732 nm / 1,264 nm
Takeoff performance (ISA, MSL, ground roll / take-off distance)	480 m / 883 m	1,574 ft / 2,897 ft
Landing performance (ISA MSL, ground roll / landing distance)	441 m / 779 m	1,447 ft / 2,556 ft
Max. service ceiling	6,096 m	20,000 ft

¹⁾ Measurements can differ depending on the specific sensor equipment.

²⁾ With standard mission equipment and 2-man crew.

Specifications are based on clean aircraft without sensor or mission equipment. Specifications can differ depending on the specific sensor equipment. The above quoted data are approximately specifications and may change without notice.

DA42 MPP - FACTS AND SPECIFICATIONS

Power plant		
Engine	2x AUSTRO ENGINE AE300 (168 hp, turbo charged)	
Propeller	2x MT 3-blade hydraulic constant speed propeller	
Fuel grades	Jet A-1, Jet A, TS-1 (Russia, Ukraine), RT (Russia, Ukraine), No. 3 Jet Fuel (China), JP-8	
Dimensions / mass / loading		
Length / height ¹⁾	8.70 m / 2.49 m	28 ft 6 in / 8 ft 2 in
Wing span	13.42 m	44 ft
Crew	1 or 2 pilots	1 or 2 operators
Typical mission crew	1 pilot	1 operator
Empty weight	1,365 kg	3,008 lbs
Useful load	634 kg	1,398 lbs
Max. take off mass	1,999 kg	4,407 lbs
Max. usable fuel capacity main tank	288 lt / 230 kg	76 US gal / 509 lbs
auxiliary tank	189 lt / 151 kg	50 US gal / 335 lbs
	99 lt / 79 kg	26 US gal / 174 lbs

Performance (MTOM, ISA)		
Max. cruise speed (16,000 ft, MCP)	317 km/h TAS	171 kts TAS
Min. operation speed	132 km/h IAS	71 kts IAS
Consumption at 35% power (loiter speed) in total	24.2 lt/hr	6.4 USGal/hr
Max. airborne operations time	12 hours	12 hours
Typical airborne operations time ²⁾	6 - 8 hours	6 - 8 hours
Max. range at 45% power in 14,000 ft (standard / incl. auxilliary tank)	1,292 km / 1,974 km	698 nm / 1,065 nm
Takeoff performance (ISA, MSL, ground roll / take-off distance)	565 m / 886 m	1,854 ft / 2,907 ft
Landing performance (ISA MSL, ground roll / landing distance)	388 m / 647 m	1,273 ft / 2,123 ft
Max. service ceiling	5,486 m	18,000 ft

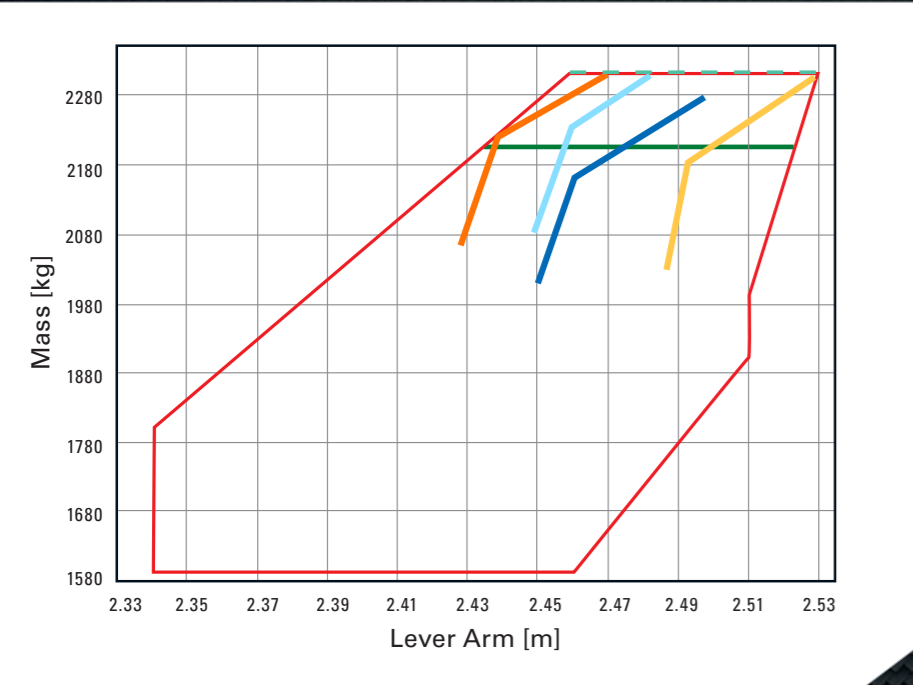
¹⁾ Measurements can differ depending on the specific sensor equipment.

²⁾ With standard mission equipment and 2-man crew.

Specifications are based on an aircraft configuration with universal nose, underfloor pod, satcom radome and gimbal camera equipment. Specifications can differ depending on the specific sensor equipment. The above quoted data are approximately specifications and may change without notice.

Facts and specifications are based on the latest aerodynamic improvements of DA42 MPP.

DA62 MPP - MASS & BALANCE



Maximum take off mass	2,300 kg	5,071 lbs
Empty weight	1,590 kg*	3,505 lbs*
Payload available in TOTAL	710 kg	1,566 lbs
Typical airplane standard options	58 kg**	128 lbs**
Crew (2 men)	160 kg	353 lbs
Fuel (86 US gal/ 326 lt Jetfuel)	265 kg***	576 lbs***
TKS anti-icing fluid (3.9 US gal/ 15 lt)	16 kg	35 lbs
Payload mission equipment	215 kg	474 lbs

* Average empty weight, excl. airplane standard options **TKS anti-icing installation, Auxiliary tanks, DME, WX500 stormscope, Avidyne TAS605 *** Specific fuel weight 0.8 kg/lt

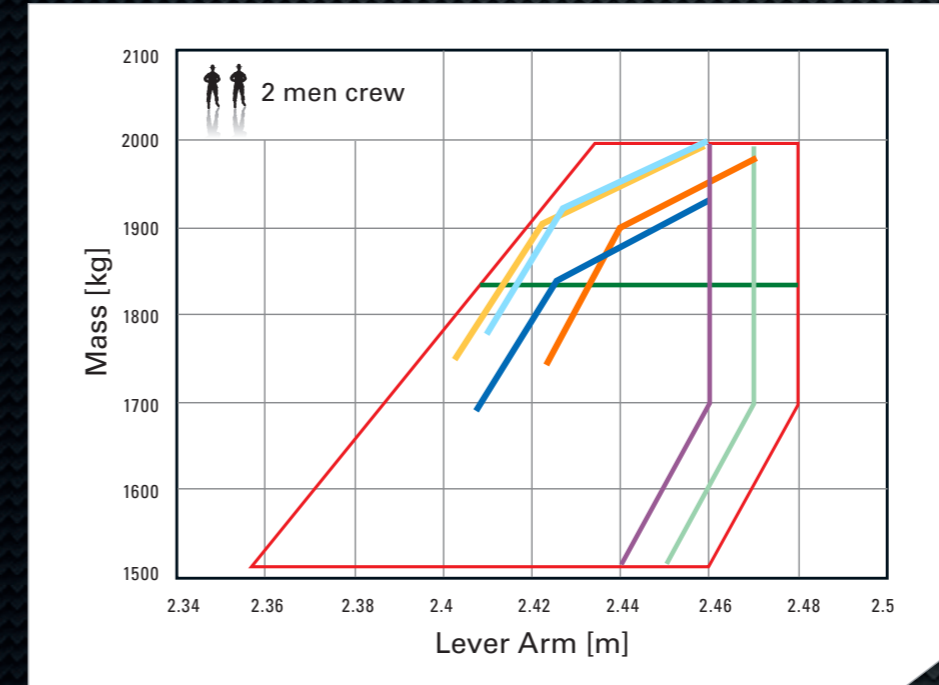
Payload examples:

- Law enforcement lite: 85 kg / 187 lbs (4 men crew with full fuel)
- Law enforcement premium: 140 kg / 309 lbs (4 men crew with 78 US gal fuel or 3 men crew with full fuel)
- ISTAR/coastal surveillance/search & rescue: 160 kg / 353 lbs (4 men crew with 72 US gal fuel or 3 men crew with full fuel)
- Mapping configuration: 190 kg / 419 lbs (3 men crew with full fuel, 3 seats available in this configuration)

Limitations:

- M&B envelope @ 2,300 kg / 5,071 lbs MTOM
- MZFM @ 2,200 kg / 4,850 lbs
- Max. landing mass

DA42 MPP - MASS & BALANCE



Maximum take off mass	1,999 kg	4,407 lbs
Empty weight	1,365 kg*	3,008 lbs*
Payload available in TOTAL	634 kg	1,399 lbs
Typical airplane standard options	58 kg**	128 lbs**
Crew (2 men):	160 kg	353 lbs
Fuel (76 US gal/ 287 lt Jetfuel)	230 kg***	507 lbs***
TKS anti-icing fluid (3.9 US gal/ 15 lt)	16 kg	35 lbs
Payload mission equipment	170 kg	376 lbs

* Average empty weight, excl. airplane standard options **TKS anti-icing installation, Auxiliary tanks, DME, WX500 stormscope, Avidyne TAS605 *** Specific fuel weight 0.8 kg/lt

Payload examples:

- Law enforcement lite: 85 kg / 187 lbs
- Law enforcement premium: 140 kg / 309 lbs
- ISTAR/coastal surveillance/search & rescue: 160 kg / 353 lbs
- Mapping configuration GEOSTAR: 190 kg / 419 lbs

Limitations:

- M&B envelope @ 1,999 kg / 4,407 lbs MTOM
- MZFM @ 1,835 kg / 4,045 lbs
- Universal nose aft CG limit
- Nose pod aft CG limit

AVIATION AS UNIQUE AS YOU ARE



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