P&M Aviation

QUIK RANGE OF AIRCRAFT

Flight Training Supplement - Issue 3

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NOTICE

This product has been manufactured for use in a reasonable and prudent manner by a qualified operator.

The minimum qualification for flying this aircraft is a formal certificate or license following successful completion and assessment of the BMAA flexwing microlight syllabus, Sport Pilot Certificate for Weight-Shift Control or equivalent, or under authorization from a qualified Instructor whilst training for your License or certificate. In addition, it is your personal responsibility to ensure that you are qualified to fly in the state/country where you intend to operate the aircraft.

For your personal safety, the safety of others and the safe operation of the aircraft, it is very important that this operator's manual is read in full before operating or flying the aircraft for the first time, and that the relevant sections are understood before any trimming or maintenance work is undertaken. Should you not understand any of the Aviation terms to be found in this manual, then ask your instructor for clarification.

If you have just acquired this aircraft then it is important that you register as the new owner/operator with your nearest P&M Aviation Distributor, or with P&M Aviation direct at the following address:

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⚠ WARNING

Failure to register will mean that you may not get important safety information issued by the company in support of its products.

IMPORTANT!

Wherever you see the symbols shown below, heed their instructions! Always follow safe operating and maintenance procedures and practices.

⚠ WARNING

This WARNING symbol identifies special instructions or procedures which if not correctly followed, could result in personal injury or loss of life.

CAUTION

This CAUTION symbol identifies special instructions or procedures which, if not strictly observed, could result in personal injury, damage to or destruction of equipment.

NOTE

- *This NOTE symbol indicates points of particular interest for more efficient and convenient operation.*

⚠ WARNING

Microlight/Light Sport Aircraft flying and all other airsports can be dangerous even when practised under ideal circumstances. Pilot error, component failure, adverse meteorological conditions or sheer bad luck can, as in all aviation, result in injury or death. Every customer purchasing goods or services whether directly or indirectly from the Company is warned that Microlight/ Light Sport Aircraft flying and similar air sports are not controlled in the same way that are other forms of aviation. As a result Microlight/ Light Sport Aircraft components and related equipment are manufactured from commercially available materials and components and some of these materials and components are not designed specifically for aviation use. Every purchaser must ensure that he inspects fully every primary product (part or service) item upon delivery and before every flight thereafter and he must make himself aware of all trends or changes which may make a particular item unsuitable for the use for which it was originally purchased. He must also satisfy himself totally that a purchased item is suitable for the use to which he intends to employ it. The Company can offer advice but the final responsibility for the use of the goods purchased, primary product (part or service) rests solely with the purchaser (whether direct or indirect) or other user who employs such goods at his own risk. This Warning applies to every part, item or service offered by the Company and acceptance of or payment for goods is an implicit acceptance of this Warning.

The Quik range of Microlight/ Light Sport Aircraft must only be flown where the following conditions apply:

1. The aircraft must not be flown over any terrain except where it may be landed safely and without harm to occupants or third parties in the event of a power reduction or failure of the engine at any stage of the flight.
2. The pilot of the aircraft is competent and has been trained to land the aircraft safely and without harm to occupants or third parties in the event of a power reduction or failure of the engine at any stage of the flight and is in current practice of forced landing procedures.

FOREWORD

We wish to thank you for choosing this P&M Aircraft.

Read this Operator's Manual before flying your aircraft so you will be thoroughly familiar with the proper operation of your Quik range of aircraft controls, its features, capabilities and limitations. This manual offers many safe operating and flying tips, but its purpose is not to provide instruction in all the techniques and skills required to fly this flexwing Microlight aircraft safely. All operators of this Microlight aircraft must qualify in a pilot training programme, to the minimum standard of the BMAA flexwing microlight pilot's licence syllabus, to attain awareness of the mental and physical requirements necessary for flexwing Microlight operation.

To ensure a long and trouble free life from your Quik range give it the proper care and maintenance described in the Aircraft Operating Instructions, Aircraft Maintenance Manual & Flight Training Supplement. For Engine Information and Service & Maintenance schedules, please refer to the relevant Engine Manufacturers Manual.

Note
Manuals are liable to be revised in the future and pages or sections re-issued. Amendments will be available from the website at www.pmaviation.co.uk
Amended pages should be printed and replaced in the manual at the earliest possible time, and the amendment details entered in the amendment pages by the owner.

Issue 1 – Introduction of Quik and Quik GT450 with Rotax 912 and 912S engines.

Issue 2- Introduction of QuikR with Rotax 912S engine.

Issue 3 - Introduction of GTR wing to the range.

Amendment No	Date	Sections/Pages Changed	Date Inserted	Signature

Abbreviations:

AOI	Aircraft Operating Instructions
FTS	Flight Training Supplement
MIP	Maintenance and Inspection Procedures
PIC	Pilot In Command
C	Celsius
CAS	Calibrated air speed
F	Fahrenheit
Hg	Mercury
IAS	Indicated Air Speed
ISA	International Standard Atmosphere
Kg	Kilogram
km/hr	Kilometers per hour
MPH	Miles per hour
kt(s)	Nautical Mile per Hour (knot) (1 nautical mph = (1852/3600) m/s)
lb(s)	Pound(s) (1 lb = 0.4539 kg)
mm	Millimeter
cm	Centimeter
m	Metre
in	Inch
ft	Feet
sq. m	Square Metre
sq. ft	Square Feet
cu. in	Cubic Inches
cm^3	Centimeter Cube
mb	Millibars
N	Newton
Nm	Newton Meter
kW	KiloWatt
HP	Horse Power
RPM	Revolutions Per Minute
ft. lbs	Foot Pounds
in. lbs	Inch Pounds
psi	Pounds per Square Inch gage pressure
s	Second
min	Minute(s)
hr(s)	Hour(s)
SI	International System of units
VA	Maneuvering Speed
VC	Operating Cruising Speed
VDF	Demonstrated Flight Diving Speed
VH	Maximum Sustainable Speed in straight and level flight
VNE	Never Exceed Speed
VS0	Stalling Speed, or the minimum steady flight speed in the landing configuration
VS1	Stalling Speed, or the minimum steady flight speed in a specific configuration
Vx	Speed at which Best Angle of Climb is achieved

Vy	Speed at which Best Rate of Climb is achieved
VT	Maximum Glider Towing Speed
Wsusp	Highest Trike Carriage Weight suspended under the wing
Wwing	Wing Weight
Wtkmt	Trike Carriage Empty Weight (including required minimum equipment, unusable fuel, maximum oil, and where appropriate, engine coolant, hangbolt and hydraulic fluid)
WMAX	Maximum Design Weight (Wwing + Wsusp)
WSC	Weight Shift Control (aircraft)
Max	Maximum
Min	Minimum

Units

Speed
Kts (Knots) = 1.15 mph (miles per hour) = 1.84 km/hr
1 km/hr = 1.6 MPH
Pressure
PSI = Pounds per Square Inch
in Hg = inches of Mercury
mb = millibar
Distances
in. = inches = 25.4 millimeters
ft = foot (feet) = .305 meters
Weights
Kg = kilograms = 2.2 lbs = 2.2 pounds

Misc

1 Pound (lb) = 0.4536 Kilogram (kg)
1 Pound per sq in (psi) = 6.895 Kilopascal (kPa)
1 Inch (in) = 25.4 Millimeters (mm)
1 Foot (ft) = 0.3048 Meter (m)
1 Statute mile = 1.609 Kilometres (km)
1 Nautical mile (NM) = 1.852 Kilometres (km)
1 Millibar (mb) = 1 Hectopascal (hPa)
1 Millibar (mb) = 0.1 Kilopascal (kPa)
1 Imperial gallon = 4.546 Liters (l)
1 US gallon = 3.785 Liters (l)
1 US quart = 0.946 Liter (l)
1 Cubic foot (ft^3) = 28.317 Liters (l)
1 Degree Fahrenheit (F) = (1.8 X C)+32
1 Inch Pound (in lb) = 0.113 Newton Meters (Nm)
1 Foot Pound (ft lb) = 1.356 Newton Meters (Nm)

1. GENERAL DESCRIPTION

The Quik range are advanced weight-shift controlled aircraft. They may be flown solo or dual without ballast. The aircraft has been developed for advanced cross-country touring performance; a stable hands-off cruise of 65 to 100 mph (depending upon model) makes long cross-country trips very practicable. Using appropriate airfields and the instructor control bars, it can also be used as a safe and reliable training machine.

The Quik GT450 was introduced in 2005 with Rotax 912 and 912-S engine options and 1.72m 3 bladed Warp Drive Propeller. It features a 65L tank, disk or drum brakes and electric trim.

The GT450 is designed for up to 450kg AUW, giving approximately 232kg of payload (fuel, occupants, baggage). The total maximum seat loading is 220kg, 110kg per seat. The aircraft has been designed with a wide speed range enabling slow speed flight at very low fuel consumption, short takeoff and landing as well as cruising speeds up to 95mph. The electric trim system gives precise fingertip control of hands-off trim speeds from approximately 50 to 80 mph.

A roll augmentation system has been developed for the GT450 wing, which actuates the wing trailing edge and keel pocket when a roll input is made. The system noticeably lightens roll control. The wing planform and twist are designed to improve L/D performance. The wing is also equipped with tip fins to improve directional stability at high speed as well as low speed sink rate and glide. They are vented to control internal wing pressure.

The QuikR and GTR wings are a strutted wing designed for optimum performance, capable of 100mph high speed flight, whilst stalling at less than 40mph fully laden. The topless design giving enhanced drag reduction for great fuel economy whilst allowing high speeds.

All of the Quik range have been designed for easy single-person rigging. The pylon hinges for folding independently of the engine and undercarriage mountings, which allows for better undercarriage geometry and structural rigidity.

These features make the aircraft capable in a multitude of roles including long distance touring, competitions and training.

Optional equipment includes low-drag panniers, a pod bag and instructor control bars.

⚠ WARNING

Do not attempt to act as pilot in command from the rear seat unless training bars and rear steering is fitted, and special training has been undertaken to fly from the rear seat. Solo flight from front seat only.

2. FLIGHT TRAINING

2.1. Training

Safety is no accident. The safe operation of an aircraft stems from many factors, but one of the most important is pilot training. Please ensure that the following conditions always apply:

2.2 Qualifications

Before taking command of your Quik aircraft you must hold a pilot's licence valid for microlight aircraft/LSA aircraft issued by the national or state aviation authority or operating under the authority of a qualified instructor. You must have gained your licence on flexwing aircraft, or have passed a flexwing alternative controls test to the satisfaction of a qualified flexwing microlight instructor. The training standards must be at least equivalent to the BMAA microlight pilot's syllabus for flexwings.

2.3 Type Conversion

Conversion to the Quik range by a qualified instructor or experienced Quik , GT450, QuikR or GTR owner is essential unless you are very experienced on flexwings (200+ hours as a guide) and current. First flights must be in smooth conditions with less than 5kt cross wind and at least 400m clear unobstructed runway.
The Quik range are easy to fly, but have a very wide trimmable speed range. It is essential that proper control of speed is exercised for different phases of flight, especially landing approaches.

2.4 Currency

If you have not flown within the previous 3 months, take a refresher lesson with a Qualified Instructor before flying as Pilot in Command, and do not operate the aircraft until the Instructor is satisfied with your ability.

2.5 Trim Operation On The Ground

The electric trimmer should be left at the fast setting whilst taxying out to the hold point, this ensures that full control of the wing is maintained at all times, especially when in gust conditions. The trim should be set to the take off position, as indicated on the trim indicator located on the dash prior to lining up for take off.
Once landed the trim should be adjusted to fast trim for taxiing to provide full ground control, especially in gusty conditions.

2.6 Differences in Landing Technique

Landing approach can be made at neutral bar as the speed is generally higher than normally needed. In some cases it may even be wise to push the bar out to slow down below trim position especially if using the Quik or QuikR wing. An instructor giving training on the Quik, Quik GT450, QuikR or GTR should note that best approach speed depends on the wing being used and as such the AOI should be consulted thoroughly before flight is attempted. Because of the high speeds available, care should be exercised to maintain the correct approach speed and attitude at all times. Landing will require a longer ground effect speed bleed off period that should be taken into account as the aircraft slows down. Every effort should be made to land as slow as possible and keep the nose wheel off the ground until after the mains touch down especially in crosswinds or the aircraft can flip over. Note the rear seat does not have a foot throttle, which is not uncommon in weight shift control aircraft. The hand throttle is available to the back seat passenger/instructor, and for instruction the instructor must adjust their style to suit if training is to be done in the Quik , Quik GT450, QuikR or GTR.

2.7 Training Stages

Instructors should follow a structured curriculum that has different stages of training and objectives listed from the FAA Practical Test Standards (PTS). Each stage should be adequately completed and logs and records with signatures kept for satisfaction of each stage before a new stage or lesson unit is attempted. This is especially important before student starts attempting landings.
Any syllabus that allows for WSC PTS training in a proper fashion will work.