

Lincolnshire and Nottinghamshire Air Ambulance



Peter Aldrick, Chief Executive Officer

Background history

- **February 1993**

Following concerns from Hospital Consultants over survival rates during transportation to hospitals in the region, a group of farmers in Lincolnshire commenced fundraising to provide a medical air service with the endorsement of the Ambulance service. The charity was formed.

- **March 1994**

The air ambulance became fully operational in Lincolnshire.

- **1997**

Nottinghamshire was added which doubled the target population for charity fundraising.

Our first aircraft was the Bo 105 (Bolkow) helicopter



In November 2000 we launched the new MD902 (G-LNAA)

Increased safety

Reduced noise



Performance and
controllability enhancements

No tail
Rotor!

Our Second MD 902 (Explorer G-LNCT) was launched in November 2010



Our aircraft MD 902 Explorer

- **Our helicopter is purpose built internally for medical use**
- **We carry the standard land ambulance equipment**
- **In addition we carry some specialist equipment**
- **We differ from some other air ambulances as we are able to use a defibrillator on board**

Our aircraft MD 902 Explorer spec

- **The helicopter is 9.86m long, with a height of 3.66m**
- **Maximum weight capacity is 3000kgs**
- **The helicopter can carry 4 people plus a patient. For us the 4 people consists of 2 paramedics, the pilot and on occasions a voluntary doctor.**
- **Top speed of 159 mph**
- **We fly at around 120mph**
- **Range of 300 miles per tank of fuel**
- **One of the safest helicopters in service**

Medical Aviation Service (MAS)

- **The helicopter and pilots are supplied by Medical Aviation Services.**
- **MAS also provide us with servicing and insurance for the helicopter.**



How we move the helicopter in and out of the hanger

- **The heli-lift enables the helicopter to be transported in and out of the hanger quickly and easily.**
- **The heli-lift only requires one person to operate it.**



Our air ambulance paramedics



Our paramedics have all gained experience from working on land ambulances in either Lincolnshire or Nottinghamshire.



Our medical crew

- **Minimum of 3 years experience as a paramedic**
- **Physically fit**
- **Successful completion of the nationally recognised HEMS (Helicopter Emergency Medical Service) course which includes:**

- **navigation**
- **flight safety**
- **meteorology**
- **marshalling**
- **aircraft familiarisation**



Doctors

- **Occasionally form part of the crew on a voluntary basis**
- **They have specialist skills for the pre-hospital environment**



How LNAACT supports EMAS

Medical Knowledge

- **Support land ambulance and fast response EMAS staff with advanced medical advice**
- **Can provide advanced pain relief for extracting patients from vehicles – Ketamine**
- **Can perform procedural sedation – Midazolam**
- **Provide advanced pre-hospital trauma skills on scene including Surgical procedures**

How LNAACT supports EMAS

The major trauma network

- **Since 2010 HEMS patients have been taken to specialist hospitals, bypassing the local hospitals.**
- **Saves the patients being transferred between hospitals by land ambulance.**
- **Improves patient outcomes with 30% better life expectancy.**

Saving time, money resources and transfers for EMAS

How EMAS supports LNAACT

- **EMAS provide our paramedics**
- **Provide our paramedics with advanced skills training**
- **Medical consumables**
- **Provide HR advice to the paramedics**

Response times

- **Activation time**

The air ambulance can be mobile to an incident in approximately 2 minutes



- **Response times**

The air ambulance can reach most parts of Lincolnshire and Nottinghamshire in under 17 minutes

What are the benefits of the air ambulance over a land ambulance?

Speed

- To scene of incident
- Quick paramedic intervention
- Quick transfer to hospital

Access

- Able get to areas not accessible by land ambulances

Smoothness

- Transfer to hospital is smooth – this is important for patients with suspected spinal injuries



Vs



Missions (2013-2014 data)

- **Around 1,000 per annum**
- **Road Traffic Collisions (42%)**
- **Leisure/Sporting Accidents (17%)**
- **Medical Emergencies (heart attacks, strokes, etc.) (17%)**
- **Falls (7%)**
- **Industrial/Farming Accidents (3%)**
- **Miscellaneous (14%) – includes hospital transfers, fire incidents, aviation accidents, railway incidents, accidents involving water, etc., etc.**
- **Approximately 60% of missions are currently in Lincolnshire, 27% in Nottinghamshire and 13% are in other neighbouring counties**
- **The charity provides 365 day coverage, weather permitting, plus RRV back-up support**

Road Traffic Collision Entrapment



The paramedics work closely with the Fire Service to ensure the patient is stable and as comfortable as they can be with their injuries.

Extracting a patient from a vehicle can be a timely process. The paramedics regularly monitor the patient throughout, using their advanced trauma skills where necessary.



Motorcyclists

On average we attend
150



**seriously injured
motorcyclists each
year**



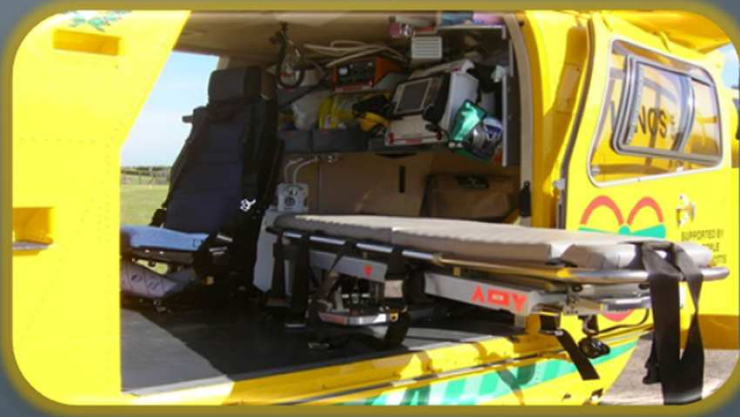
**Up to
5%**



**of our work involves
injuries sustained
whilst working with
agricultural and
farming machinery**

Our articulated stretcher

- A patient will be placed on a scoop board on the ground and lifted by the crew on scene and carried to the ambucopter.
- The scoop board will then be placed on top of the articulated stretcher and secured in the ambucopter .



Lifepak 15 defibrillator / monitor

Our defibrillator can be used during flight as it is on a separate electrical circuit than the rest of the helicopter.



Traffic Collision Avoidance System (TCAS)

- **Designed to reduce the incidence of mid-air collisions**
- **Monitors the airspace around an aircraft for other aircraft with a corresponding active transponder**
- **Independent from air traffic control**

The TCAS system builds a three dimensional map of aircraft in the airspace using:

- **Range**
- **Altitude**
- **Bearing**

Using these it can determine if a potential collision threat exists.



Pitot tubes

These measure the air and ground speed during flight.



Bearpaws designed to stop the aircraft sinking into soft ground



**We can land on wet sand and snow
where land ambulances and other
helicopters can't go**



Bearpaws



**The advantages of having
no tail rotor means we can
land where conventional
helicopters aren't able
to...**



We can land almost anywhere...



Tight spaces



Inaccessible areas



**By the side of homes
or even in gardens ...**



Remote places



Rapid Response Vehicle (RRV)



This was provided by the Nottinghamshire Farmers.

Used by the aircrew when the aircraft is grounded due to weather, servicing and aircraft mechanical faults



LINCS AND NOTTS
AIR AMBULANCE

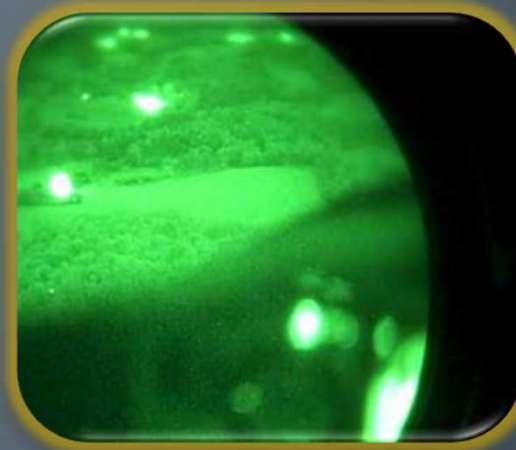


Night time HEMS Missions

- **Civil Aviation Authority (CAA) safety guidelines for night time HEMS missions published October 2012**
- **Helicopter upgrades completed during early 2013**
- **Full CAA approval for night flying given late summer 2013**
- **Extensive training programme for aircrew including paramedics completed by October 2013**
- **First night mission completed 18th November 2013**
- **FLIR (infra-red imaging device) added to the helicopter equipment for increased safety.**

Night Vision Goggles

**Our pilot and both
paramedics wear night
vision goggles**



Night Sun Trakka Beam



What are the costs?

- **£1.8 million**

The cost to keep the air ambulance flying each year

- **£4,670**

The cost to keep the air ambulance running for a day

- **£1,000**

The cost for one full mission (arriving at the scene, treatment, transfer to the hospital, return to base)

- **£200**

The cost of fuel for one mission.

**All this money is raised and donated
by members of the public**

Charity funding

- **Donations from general public + Gift Aid**
- **Legacies**
- **In-house lottery**
- **Charity shops & merchandise sales**
- **Fundraising events, talks & presentations**
- **Recycling of second-hand goods**
- **Corporate funding**
- **Charitable Trusts, etc.**

**No government or
National Lottery funding**

Our shops

Lincolnshire

- Ashby
- Bracebridge Heath
- Grimsby
- Lincoln
- Market Rasen
- North Hykeham
- Spalding
- Wragby



Nottinghamshire

- Mansfield Woodhouse
- Mapperley
- Retford
- Stapleford
- Sutton in Ashfield
- Trent Bridge



Future Issues

- **Expansion of Night-flying Operations and cost implications**
- **Availability of lit Helipads at Hospitals - especially at Major Trauma Centres, PPCI units and other specialist centres**
- **Airbase facilities improvement at RAF Waddington**
- **Expansion of Doctor availability on the helicopter**