

## A CASE FOR BALL LIGHTNING?

Ball lightning is an interesting and somewhat controversial phenomenon. The following case was reported to BUFORA in 1997 and even though it was observed in the fifties, I thought it was interesting with regard to the study of natural phenomena that are reported as UFOs, and wrote to Peter suggesting this was possibly ball lightning. He responded with a copy of a Daily Telegraph article and also a copy of some correspondence from Dr. John Hardwick, both referred to below. The following case certainly appeared to have some of the characteristics of the phenomenon.

### Leigh, Lancashire

In the winter of 1952 Peter aged twelve and his brother aged seven were at home alone for a short period whilst their parents were out. It was early evening and raining and they were upstairs in their parents' bedroom awaiting their return. Peter then became aware of a 'presence' or feeling that there was someone beyond the bedroom door. There was no noise or any indication other than this. He went over to the door, which was at the head of the stairs and about halfway up the stairs he observed two spherical objects both about 250mm in diameter. They were bright orange in colour and had an almost fiery consistency. The objects were about 1 metre above the stairs one slightly ahead and above the other about 400mm apart, and were moving up the stairs at around one foot per second. Both objects exploded almost simultaneously, the lead one first, and the noise was similar in sound to a toy balloon popping.

Peter's brother appeared at the top of the stairs after hearing the sound of an explosion and they searched the stairs for any sign of debris. There was no trace of ash burning or any residual smell. The doors to the downstairs rooms were closed as was the front door.

Upon his parents return, his father, an electrical engineer, searched the house and inspected the electrical installations for faults. He could find nothing wrong that could have been responsible for the spherical objects that his sons had observed.

Jenny Randles discussed **ball lightning** in the BUFORA postal training course and I quote from her description within the course

*It is usually ball-shaped, but sometimes oval. It is rarely larger than tennis ball size, but some researchers believe that very rare bigger forms are unrecognised by science as they are dismissed as UFOs. It can float freely in the atmosphere, often follows power lines, has been known to effect electrical equipment (e.g. causing neon tubes to light without power or blowing electrical circuits) and can create tingling symptoms with witnesses. It tends to be short lived but has been reliably reported as being visible for several minutes. Theories to explain it are varied but one proposes nuclear reactions, which generate an intense localised radiation field, which may provoke serious illness in a witness. Despite its name it does not require a thunderstorm to form and has appeared day and night, inside and outdoors, in hot, cold, dry and wet weather.*

*In many senses this is a real UFO, even if we identify a case as being so formed. Scientists still do not fully understand what it is or how it occurs and as recently as the 1960s it was widely rejected alongside UFOs! Since then it has been well described by a physicist witness, so most scientists now accept it. But there is little doubt that many cases get reported as UFOs and never come near scientists. In an Equinox programme on lightning presented by channel 4 in November 1994 there was a segment devoted to the ball lightning hypothesis and some first hand reports of people who had witnessed these balls of light.*

An article from a September 1998 issue of the *New Scientist* gives more information on ball lightning when the crew of an Air UK jet struck by lightning saw 'fireballs in the cabin'. According to this article there have been observations of similar mysterious fireballs throughout history and Spanish physicist Antonio Ranada gives a theory to explain what they are. This was recorded in a September issue of the *Journal of Geophysical Research* where he and his colleagues believe that linked magnetic loops might explain how fireballs could last so long. I quote from this article:

*Lightning strikes normally create horizontal magnetic fields all around them, but vertical fields may sometimes form. Under certain circumstances vertical and horizontal loops might link together and form a ball. Glowing plasma could be trapped inside the magnetic field lines. If there was just one magnetic field, it would expand with the plasma, and the plasma ball would explode instantly. But the two fields are constrained by the link between them – they and the plasma cannot expand and the flowing fireball effect lasts until the plasma cools. "It's perfectly clear that it can last for ten or fifteen seconds," says Ranada. In the cooling plasma, electrons become bound to their atoms. This increases electrical resistance, killing the current within the plasma and weakening the surrounding magnetic fields.*

The article in *New Scientist* goes on to say that this theory would also explain why the fireball radiates little or no heat, yet its touch can burn. Most of the ball is cold, but along the field lines the loops and a few streamers coming off the fireball reach temperatures of 16,000 degrees Celsius or more.

A press cutting from the *Telegraph* in 1996 gives a further interesting look at the ball lightning phenomenon. Three of the staff at a print works received electric shocks when a sphere the size of a tennis ball flew around their factory in Tewksbury Glos. A forklift truck driver saw a dazzling blue/white ball bounce along the roof and then pass through netting into the building. Once inside, it roared along girders and hit printing machinery sending sparks flying everywhere. It finally hit a window and exploded with an orange flash, blowing out the telephone switchboard and lighting up the whole place with sparks everywhere. Apparently the fireball raced around the building and the bang was so loud that it was even heard by a deaf employee. The staff claimed it was like something out of *Star Wars*. Three people received electric shocks and one lady was hit in the shoulder and felt as though 'Frank Bruno had punched her'. One worker claimed that the lightning ball was unleashed when a jet plane passed through a cloud overhead. Scientists have been sceptical about the existence of such a phenomenon, but it has been reported so often and so consistently that most are convinced that ball lightning is real and often sighted during thunders

and humid weather, where it appears as a free floating globe of glowing gas usually between the size of an orange and a grapefruit.

After contacting BUFORA and receiving my response, Peter wrote to Dr. John Hardwick at the Lightning Test Technology Group in Abingdon, Oxfordshire and kindly sent me Dr. Hardwick's response where he writes:

***'We are a commercial group, mainly concerned with effects of lightning on aircraft and unfortunately have little time to pursue the subject to its widest boundaries.'***

***'Ball lightning is a controversial issue. It is clear that such phenomena do occur, but there may be different types and some observations might have a more conventional explanation. For example, molten balls of burning metal are sometimes observed at contact breakers. Moreover, photographic and visual records do not provide suitable quantitative information.'***

Dr. Harwick suggests reading the chapter on ball lightning by Singer in *The Physics of Lightning*. Singer also wrote a whole book on the subject '*The Nature of Ball Lightning*' (Plenum Press 1971). He also states that there are many theories as to what causes ball lightning.

To illustrate this unusual phenomenon even further, during the summer 1997 I received a phone call from a lady, who reported an unusual event, which occurred in her home in July of 1995 whilst sitting on the settee with her boyfriend. They both noticed a ball of light outside the window and were astonished and very apprehensive when this ball of light passed through the closed window glass. She described it as a blue/green spinning light, the size of a football. It moved in a downward trajectory at speed past the settee on which they were sitting and then shot out through the patio windowpane at the other end of their lounge. This event took place within several seconds. The couple involved had no idea what they had observed and were very puzzled. I suggested that it might have been ball lightning and explained a little bit about the characteristics of this unusual phenomenon.

### **Glossop, Derbyshire**

A recent report, indicative of the phenomenon, came to BUFORA by email in September 2007. Sometime the previous year (2006) Rob and his friend were taking their usual nightly jog in the Whitfield area of Glossop. It was between 10pm and midnight and both men were thirsty from their exertions. They decided to leave the road and venture onto the golf course in the hope of finding a tap or fountain from which to drink. They were standing resting with their backs toward Glossop and looking left towards the Snake Pass when suddenly from behind them, apparently following the contours of the road, appeared a yellow-orange ball of light the size of a football at arms length and around 200 feet up. As the object flew directly over the shocked witnesses, they both instinctively ducked and then watched it disappear behind a nearby ridge as if it were descending into a local quarry. They waited for a crash or a flash, thinking perhaps it was a meteor about to land, but nothing happened. When overhead, Rob describes it as a "crackling" ball similar to a sparkler firework. Most tellingly, as far as the ball lightning hypothesis is concerned, Rob felt a tingling, itching sensation as it passed near, and heard a distinct "fizzing" sound. All

descriptions point to an electrical phenomenon, and the case is currently under further investigation.

There is certainly no doubt that ball lightning and other sightings of balls of light observed at close range are reported more frequently than realised. This is most worthy of continued investigation when we are looking at the field of UFO study.

**Gloria Heather Dixon**