FINAL REPORT

AAIU Synoptic Report No: 2008-011
AAIU File No: 2007/0031
Published: 01/07/2008

In accordance with the provisions of SI 205 of 1997, the Chief Inspector of Air Accidents, on 23/04/2007, appointed Mr. Paddy Judge as the Investigator-in-Charge to carry out a Field Investigation into this Accident and prepare a Synoptic Report.

Aircraft Type and Registration:	Cessna 206, G-SKYE
No. and Type of Engines:	1 x Continental TSIO-520-M
Aircraft Serial Number:	TU206G-04568
Year of Manufacture:	1978
Date and Time (UTC):	21 April 2007 @ 13.16 hrs
Location:	Hacketstown (EIHN), Co. Carlow
Type of Flight:	Aerial work
Persons on Board:	Crew – 1 Passengers – 5
Injuries:	Crew – Nil Passengers – 2 (Serious)
Nature of Damage:	None to aircraft
Commander's Licence:	UK PPL
Tandem Master Licence:	Parachute Association of Ireland (PAI) Licence No. 470
Tandem Master Total Jumps:	1,920
Notification Source:	Member of the public
Information Source:	AAIU Field investigation

SYNOPSIS

A series of parachute jumps were undertaken in association with a school fundraising event. Although the weather was breezy, it was considered suitable for jumping. Five jump flights had previously taken place, each with two tandems pairs and a single parachutist. The landings were generally about the touch down or Drop Zone (DZ) on the airfield. On the sixth jump flight, one tandem pair landed off the airfield. During the landing, they collided with a tracked mechanical digger, sustaining serious injuries to both parachutists.

FINAL REPORT

1. FACTUAL INFORMATION

1.1 History

This parachute jump was organised in connection with a school charity event where novice jumpers undertook a sponsored parachute jump. The novice jumpers, on arrival at the Parachute Centre, were required to become members, sign an Indemnity Form, a warning notice (**Appendix 1**) and declare their fitness to jump. The jumps were tandem jumps where the inexperienced novice jumper is attached by a harness to the front of an experienced Tandem Master (TM). During a tandem jump, the TM controls the jump, from leaving the aircraft through freefall, and pilots the canopy[1] to a landing. The novice therefore needs little instruction before making the tandem jump.

As the regular Parachute Centre aircraft was unserviceable an aircraft and its pilot was obtained from a UK parachute club to conduct the lift flights. Flying commenced at approximately 09.30 hrs that morning in clear conditions with a southerly wind. The first jump landed in a field adjacent to the airfield, an "off landing". All other jumps on the day were reported to have landed on the airfield itself, with the exception of the last, the accident jump. The parachutists jumped that day from altitudes ranging from 9,000 to 10,000 ft. The TM had already successfully completed five tandem jumps earlier that day. The sixth jump, freefall and initial approach appeared to be normal. Shortly before landing, the tandem pair was observed to break off the approach, turn to the left and disappear from view behind the brow of the hill close to the DZ.

A short time later, the tandem pair was found under the cab and between the tracks of a mechanical digger that was facing in the direction of the airfield and located in a field close to the DZ (**Appendix 2, Photo No.1**).

1.1.2 Injuries

Both parachutists had sustained serious injuries; the student's being the more serious. Two members of the Fire Brigade, who were Paramedics, initially treated them at the scene. After about 10 minutes an ambulance arrived, followed some time later by a doctor and a second ambulance. The initial ambulance crew included one advanced paramedic who, through the Assistant Chief Ambulance Officer, requested an air ambulance due to the severity of the student's injuries but none was available. The casualties were than transferred by road to hospital with the student subsequently transferred to an intensive care unit, due to the severity of his injuries.

1.2 Witnesses interviews

Two witnesses were catchers[2] in the DZ at the time. A single parachutist landed first followed by the two tandems from the jump flight. The first tandem landed in the DZ. The second Tandem Pair was observed as having turned into wind. One witness saw the Tandem Pair turned away but travelling across the wind at a low height. The Tandem Pair disappeared over the crest of the hill and appeared to "land off". DZ Personnel headed in that direction to check on their well being and help with the recovery of the parachute.

[1] The Canopy refers to the fabric part whereas parachute refers to the fabric and harness assembly.

[2] An assistant who collapses the parachute after landing by pulling down the toggles

The DZ personnel stated that, on arrival at the scene, they observed the Tandem Pair lying on the ground between the tracks of a mechanical digger. The parachute lines lay across the arm of the digger with the canopy on the other side or nearest to the building under construction. The cab window of the digger was found broken and dislodged. The bottom metal frame of the cab window had been bent inwards. They saw that both persons were injured and immediately called for a local doctor and an ambulance. The DZ personnel did not move the Tandem Pair, as the extent of their injuries was unknown. The parachute canopy was used to keep the casualties warm and they were informed that medical assistance was on the way.

An experienced parachutist described the approach as normal and appearing to be heading for the DZ but the Tandem Pair broke left across the wind at a low level and disappeared over the brow of the intervening hill.

Also at the airfield were two off-duty firemen with Para-medical qualifications, one of whom intended to jump. This witness was initially told that the jumps might be cancelled due to wind conditions. However, this did not occur. He saw one jump landing off the DZ earlier. He suited up to jump but was then told there had been an accident. He was driven over and saw two men between the tracks of a mechanical digger. He cut away the parachute harness and both firemen rendered first aid. Both casualties were then removed by road ambulance to hospital.

1.3 Tandem Master (TM) Interview

The Tandem Master was taking the first time student for a jump. He stated that the jump position, freefall, drogue deployment and canopy opening were normal. He believed he would have opened the parachute at about 5,500 ft after 30 seconds of freefall. The approach was normal. As he turned to face into the target, at about 500 ft, he realised the wind was going to be a factor. He recalled seeing a DZ staff member on the ground but he found himself being pushed backwards quickly. As there was a power line underneath he realised they would land on it or the road behind unless he took action. He decided to turn for a downwind landing in a field, which had been clear heretofore. He recalled seeing the foundations of a house, a pile of blocks, an excavator and a high hedge as he descended towards them. At that point, he ran out of options and aimed for a grassy space but got pushed by the wind to his left and into the digger. The student impacted first as he was at the front.

The TM stated that he had not been able to see the new building activity before he turned due to the restricted view in a tandem configuration. When landing off the DZ previously, he had occasionally landed in that field. However, he had not noticed the new building site in that field on his previous jumps that day.

There were no problems with the parachute, either its opening or control. The student did not use the controls on the way down. The TM stated he generally aimed to be above the DZ at 2,000 feet.

The TM said he had been watching the windsock on the way down, as it was important to watch the wind when judging an approach. The wind had been variable and jumping was cancelled earlier for about half an hour due to wind speed. However, the wind dropped and jumping recommenced. He stated that if wind speed in the target area increased, after the aircraft had taken off, ground personnel would have advised the pilot by VHF radio and the jump would be cancelled.

The TM was first to jump on that flight, as far as he remembered. He stated that the topography around the airfield could cause variable winds, as it is quite hilly. Although the other parachutists had landed on the DZ, he was quite certain he had been being pushed back on his final approach.

He stated that tandem parachutes are big, slow and not very manoeuvrable and therefore sharp or "hook" turns are not possible.

1.4 Student Interview

The student had not jumped before and this was his first time. He suited up and they were first to jump, he thought from about 9,000 ft. The free fall was fine and they did some turns. He remembered heading towards power lines, turning at a low height and then hitting the windscreen of a digger. He did not recall going backwards, but as it was his first time to jump, he might not have noticed it.

1.5 Tandem Master (TM) Qualifications

The TM stated that although his licence did not show a Tandem Master Qualification he had completed his TM examination in August 2006 and had submitted his paperwork to the PAI. He stated that the PAI official, the certifying authority, had not signed his licence, as he no longer attended the Centre, having become involved in setting up another parachute club at a different location.

The PAI have informed the Investigation that the TM's rating was approved by the Safety and Technical Committee of the PAI on 23 February 2007 but only ratified by the PAI board on 28 June 2007. The PAI stated this was due to late submission of paperwork.

The PAI issued the TM with PAI Licence No. 470. This licence was a Class D Licence, or a Senior Parachutist qualification that required a minimum of 500 freefall jumps and 3 hours of freefall time. He also possessed a Display Rating which required completion of 10 critiqued accuracy landings to within 8 metres of a target with two of these being over obstacles. His Canopy Class 3 allowed him to use canopies up to and including very high performance canopies with high wing loadings, such canopies having little forgiveness and no room for error. He had a Vector Tandem Instructor Rating (USA), a Jumpmaster Rating since 2003 and a Display Rating since 2005. Records from the PAI showed that the TM had applied for a TM rating with checkout dates shown as 1/08/2006 and 1/09/2006 respectively, qualifying on both Paratec (the accident parachute system) and Sigma equipment.

His JAA Class 2 Medical Certificate expired on the 31/03/2007 or three weeks before the accident.

1.6 Parachute information

The parachute is composed of three main parts; a main canopy, a reserve canopy and a tandem harness system. The main canopy is deployed manually; the reserve may be deployed either manually or by an Automatic Activation Device (AAD). The accident canopy is a Parafoil, in essence a large wing that inflates and generates lift using ram air. As such, it can be flown and guided in direction once correctly deployed. Lines, connected from the canopy to the harness webbing, support the parachutists, whereas the control lines lead from the canopy to toggles on either side.

1.7 Parachute control

The main canopy is steered by two toggles, located on the harness webbing on each side, that are gripped with the hands above the head. The toggle of this tandem parachute has two loops, one above the other - the upper toggle being used by the TM whereas a student can use the lower under the supervision of the TM. The toggles are attached to control lines on each side of the canopy trailing edge. Pulling a toggle slows the canopy on that side causing the parachutists to turn in that direction. Pulling both toggles flares the canopy for landing as this slows the descent and forward speed of the parachute at the same time.

However, this parachute was originally supplied with an additional inner toggle per side that controlled the innermost lines to the canopy trailing edge. This toggle was used during the landing and was held in position by Velcro. The canopy had been modified by removing this inner toggle and leading all control lines to the outer or main steering toggles. This resulted in full control of the canopy through one set of toggles. The Investigation has been informed that this modification is acceptable to the manufacturer.

1.8 General jump information

Following a period of free fall the main canopy is deployed at about 5,000 ft and flown to a landing by the TM. A descent speed of 180 mph can be reached in freefall. As this is above the maximum deployment speed of the canopy (155 mph) the descent rate is reduced by the TM deploying a drogue chute shortly after free fall commences. The recommended opening height for a tandem canopy in the Jump Master Manual is 5,500 ft and, as it opens, it fills with air taking a wing shape to fly at a speed of about 20 mph while descending at approximately 1,000 ft/min. In the event the main canopy does not open correctly it can be jettisoned and the reserve canopy deployed. If a canopy is not deployed during the descent then the AAD automatically activates and deploys the reserve canopy at a height of 2,500 ft over the ground by sensing an excessive rate of descent.

1.9 Approach and landing

The approach pattern is generally flown from a 1,000 ft "set-up" point. After this point a down wind leg is flown followed by a 90° base leg and another turn into wind for landing. The turns can be made earlier or later depending on whether the approach is low or high and a shorter or longer track is required. The final turn for landing is normally made into wind to reduce forward speed. When about to land, the TM requests the student to raise his/her legs and flares the parachute by pulling on all toggles.

The parachute Canopy Handling Manual warns under Flat Turns *"it is critical to land under a canopy that is level with the ground. Carrying out sharp turns at low altitude may well cause serious injury or kill you*".

It further cautions that the priorities for landing are:

- *Land under a flat and level canopy*
- *Into a hazard free area*
- *Into wind*

It also states, "*Never start a turn you cannot complete before making contact with the ground".*

1.10 Meteorology

The Parachute Centre personnel reported that the weather on the day was good with the wind reported as 170º/10 kts to 15 kts, the sky was clear with no cloud affecting operations. The DZ personnel reported that after the first two jump flights of the day there were initial concerns that wind speed might cause jumping to be cancelled and jumping was halted for half an hour. Following this period jumping recommenced and a further three jump flights were carried out. The PAI published maximum ground wind speed limit for a tandem parachute is 20 mph. The Parachute Centre personnel stated that wind speed was below this during the accident jump.

A meteorological aftercast was requested by the Investigation from the Aviation Services Division of Met Éireann. This indicated that the likely meteorological conditions at EIHN, at the time in question, were a surface wind of 210º at 15 Kts. However, gusts of up to 25 knots were possible in the area when the accident occurred. The gradient wind was 230º/20 kts to 25 kts with clouds generally of cumulus and stratocumulus type. Cloud amounts and levels were variable but a ceiling of less than 2,000 ft was unlikely. Visibility should have been good with no showers at the time the accident occurred.

Despite the presence of cumulus clouds in the region at the time of the incident, there was no evidence of any cumulonimbus clouds or showers in the vicinity. Therefore, it is very unlikely that up-draughts or down-draughts, relating to convective cloud, would have contributed to the accident on that day.

1.11 Parachute Oversight

At the time of this accident, the PAI was the national governing body for sport parachuting in the Republic of Ireland. The Association set standards for safety, training and operations. The PAI Operations Manual (OM) stated that it was recognized as the national governing body for sport parachuting by the Irish Aviation Authority (IAA). Its procedures were outlined in its OM and the experience and qualification requirements for the various grades of parachutists. Aeronautical Notice (AN) P15 of 30/04/06, issued by the IAA authorized the PAI to issue ratings to appropriately qualified persons in respect of parachute operations and parachute maintenance.

The TM held a General Parachute Permit issued under Rule 7 of the Rules of the Air Order, 2004, S.I. 72 of 2004. The IAA Reference No. was 262143C and this General Parachute Permit had a validity period 25th May 2006 to 24th May 2008. Therefore the TM was legal to jump.

The PAI OM 16.1. 2 state "*A Tandem Master must hold a current Class 2 or higher pilot medical certificate, confirming his fitness to parachute*". Although the PAI had a statutory basis it relied on club members to self monitor their currency and validity of their medicals while their Safety Committee authenticated and endorsed licenses.

Subsequent to this accident, the IAA issued Aeronautical Notice P15, 26/10/2007, which withdrew its approval for the PAI to authorize parachuting operations. The IAA now directly authorizes such operations. In addition, the IAA also issued Aeronautical Notice P16 of 26/10/2007, which requires a tandem master to be the holder of a current JAR-FCL Class 2 Medical Certificate or equivalent.

1.12 Parachute Landing Area or Drop Zone (DZ)

It is noted that the Civil Aviation Authority in the United Kingdom provides guidance for parachuting activity in its publication CAP 660. In this document, Section 14 Parachute Landing Area states, inter alia**:**

NOTE: *The term 'parachute landing area' is used in order to draw a clear distinction between the area on the ground, and 'dropping zone' which is used to denote a portion of airspace.*

14.1 It is the operator's responsibility to be satisfied that the parachute landing area is suitable for the intended purpose, taking into account the capability of the parachutists, the dimensions of the landing area, the dimensions and relative positions of available overshoot and undershoot areas, proximity to any buildings, power lines or anything else which may be a hazard to parachutists and the presence of other activities on or near the landing area.

14.2 Parachute landing areas to be used by all designations of parachutists should normally provide a large open space of reasonably level ground which can contain a circle, radius 250 meters, free from Major Hazards and largely free from Minor Hazards.

These landing areas should ideally be bordered on at least three sides by suitable overshoot/undershoot areas.

14.3 Parachute landing areas which do not comply with the above or which have high voltage power lines within 800 meters of the centre of the landing area, will require the operator to stipulate restrictions on operating procedure and/or may not be suitable for all designations of parachutists.

The Investigation has been unable to find similar standards in either the PAI Operations Manual or in IAA publications in relation to parachuting in Ireland.

1.13 Equipment

A qualified rigger under the supervision of an AAIU Inspector examined the accident parachute. The parachute consisted of the Harness System (Paratec Tandem NEXT S/N 818), the Main canopy (BT80-GH002B), the Reserve canopy (Galaxy-GF004B) and the AAD (Cypres II).

Some parts of the parachute system showed cuts and impact damage as a result of the accident. The system was found to be in good overall condition.

Both the Main and Student harness were in good condition with straps and buckles satisfactory in operation and adjustment. The Main Canopy, Drogue and Reserve canopy were in good condition with the cut away pad and auxiliary release in very good condition. Although some repair work (stitching) was noted on the main drogue outside cover, the inner second skin, the drogue container, was in good condition so the repair was not a factor in the accident.

Some fraying was evident on the outer surface of control lines where they passed over a Velcro patch. This did not affect the structural integrity of the control lines and was therefore not a factor in the accident.

It was noted that the Reserve Canopy Certificate of Airworthiness (C of A) was valid with the next repack due 19/09/2007. The Main Canopy is repacked after each jump by, or under the supervision of a qualified Rigger and does not therefore require a C of A. The Investigation established that a qualified Rigger repacked the canopy prior to the accident jump.

The AAD was modern and functioning correctly in setting, resetting and deactivation. Its next service was due in 2010.

1.14 Aircraft

The Investigation has been informed that the Parachute Club aircraft was unserviceable due to a ground accident, in a maintenance facility abroad, when the aircraft was substantially damaged. It is believed the aircraft is beyond economic repair. The aircraft on the jump flight was then obtained from a UK parachute club with whom the Irish Club stated they had an arrangement. The aircraft was not involved or contributed in any way to the accident. However, the pilot had a current UK Private Pilot's Licence (PPL) and medical. The IAA informed the Investigation that parachute activity in Ireland is considered as "aerial work" and that the pilot should have had a Commercial Pilot's Licence (CPL) under Irish Air Law.

It is noted that the UK in Air Navigation Order CAP 393 Subsection 1.2 has a derogation that states that a PPL Aeroplanes:

> *(ii) may fly such an aeroplane for the purpose of aerial work which consists of:…*
>
> *(bb) a flight for the purpose of dropping of persons by parachute; in either case in an aeroplane owned, or operated under arrangements entered into, by a flying club of which the holder of the licence and any person carried in the aircraft or in any glider towed by the aircraft are members;*

Nevertheless this facility applies only within the jurisdiction of the UK and there is no such derogation in Ireland.

At the time of the accident there was disagreement between a Parachute Centre and the IAA as to whether parachuting activity of this nature required a pilot with a PPL or CPL (see Section 2.3).

1.15 Radar Recording

At 13.00 hrs, an aircraft appeared on radar 3 nm east of EIHN. Its transponder code showed as A0437 with its Mode C, or altitude readout, showing the aircraft at Flight Level (FL) 050. It continued climbing, remaining within ¾ nm of EIHN, until it turned on to a southeasterly heading on which it climbed to FL 090. It reached overhead the airfield at 13.10 hrs after which it descended in a northwesterly direction disappearing below radar coverage at 13.14 hrs while descending through FL 046. There was no contact between the aircraft and ATC. The pilot later confirmed that the parachutists exited the aircraft at 9,000 ft.

1.16 Further Information

The Parachute Centre, which conducted the jumps, has since ceased activity. However, cessation was not related to this accident.

2. ANALYSIS

2.1 General

The landing speed of a parachute is dictated by the wind. Ideally, there should be some wind, but not too much as in calm conditions landing groundspeed is higher. However, if the wind speed is greater than the canopy airspeed the parachute goes backwards relative to the ground. As the airspeed of the canopy is about 20 mph, any headwind in excess of this is problematic when landing and will induce a negative groundspeed.

It is noted from **Appendix 2** that there are three sets of electric cables between the landing area and the accident site. These cables comprise both power and telephone lines, the power lines being the nearer to the DZ. Thus, when the TM found he was being driven towards the electric cable his decision to try to avoid them was understandable.

It is probable that the turn onto final by the TM was too low to allow any real adjustment of track. The Investigation notes that all parachute manuals warn against turns at a low altitude. However the fact that they were drifting back on top of electric power lines made the TM decide to try to avoid them and attempt that last second, low level manoeuvre. Had the building site not been there it is probable that the manoeuvre would have resulted in a safe landing, albeit across the wind.

It is noted that the single parachutist and the other tandem pair carried on that same jump flight both landed in the DZ. All three canopies were aloft at the same time in the same area and the other TM did not experience any problems in landing. Therefore, it is reasonable to assume that similar conditions should have affected all three. However, the accident TM stated that he was drifting backwards before landing. That part of the flight was not observed by any of the ground witnesses. Furthermore, though there is a possibility that the downwind leg of the approach could have been too deep or wide, the TM himself stated it was not. An experienced ground witnesses also stated that the approach looked normal until the TM broke left.

The meteorological analysis indicated that the general gusty nature of the airflow had the potential to suddenly alter the groundspeed of a parachute. As the speed of the canopy is about 20 mph, the airflow had the potential, according to the meteorological analysis, to reach 25 knots and exceed the forward speed of the canopy. It was possible therefore that the TM encountered a negative groundspeed. It is also possible that the TM encountered a slightly different wind speed from the other parachutists that were on that jump flight due to the topography of the local terrain as his landing position was in a different part of the DZ. Additionally, he may have encountered a localised wind speed increase from the southerly wind blowing over the top of the hill near the DZ.

The TM stated that the approach was normal until he straightened up to land when he began to drift backwards. Due to the restricted visibility to the side of the tandem harness, he did not see the obstacles in the field until he turned. However, the TM had conducted a number of jumps that day and had not observed the building site in the undershoot area.

2.2 Off-Drop-Zone Landings

Although the PAI OM requires that the DZ overshoot area of ground should be largely free of hazards no such requirement exists for the undershoot area. The TM's decision to avoid the power transmission cables was reasonable but the guidance in CAP 660 states that high voltage power lines must be at least 800 metres away from the DZ. Although the power lines at the accident site were not high voltage the fact that there were three sets of lines in the undershoot area (**Appendix 2, Photo No. 2**) leads the Investigation to the opinion that guidance on this matter should be introduced in Ireland and accordingly issues a Safety Recommendation to that effect.

2.3 Parachuting Certification Criteria

The TM had successfully passed his TM examinations and stated that he had submitted his paperwork to the PAI but his licence had not been endorsed. At the time, he understood, that authority was vested in a nominated person in each parachute centre. However, there appeared to be some uncertainty about when the paperwork was submitted and the process or length of time, from checkout to receiving a rating, appears excessive. This situation has been subsequently resolved by the IAA, who now gives the authority to endorse a licence to the parachute centre itself.

The Investigation notes that standards and proficiency requirements are adequately detailed for the progressive levels in parachute licensing in the PAI OM. However, the Investigation also notes that there is no provision for re-certification of a parachutist or a TM following an accident or incident. The Investigation is of the opinion that re-certification requirements should be detailed in the Parachute Centre Operations Manuals and therefore issues a Safety Recommendation accordingly.

2.4 Pilot Licensing

The aircraft had been obtained from a UK parachute club with whom the Parachute Centre had an arrangement for the exchange of equipment. The IAA stated that this type of parachute activity in Ireland required a pilot with a CPL, as parachutists paid for their flight. However, this was disputed by a parachute centre which held that it was a club activity since all novice parachutists were required to join before parachuting and their payments were to cover the cost of the aircraft. They interpreted regulations as indicating that a pilot who had a PPL could fly the parachute flight. The IAA did not accept that argument and, since the time of the accident, it has been agreed that pilots of aircraft conducting this activity will require a CPL. The Investigation is of the opinion that the status of the pilot's licence was not a factor in this accident.

2.5 Tandem Master's Medical

The TM's medical expired three weeks before the accident. The PAI, as a voluntary club, relied on its members to self-monitor their currency. Since that time the IAA have introduced Aeronautical Notice P16, which requires a Tandem Master to be in possession of a Class II medical. The Investigation is of the opinion that the Tandem Master's medical, though not current, was not a factor in this accident.

3. CONCLUSIONS

(a) Findings

1. The Tandem Master had completed 5 jumps successfully prior to the accident jump that day.
2. The aircraft exit height was satisfactory at 9,000 ft.
3. Parachute deployment height and operation were normal.
4. The approach resulted in an undershoot.
5. The undershoot path was obstructed by electrical power transmission cables.
6. As a result, a turn was made at low altitude.
7. The Tandem Master attempted to land in a field where a new building was being constructed and collided with a mechanical digger.
8. Gusts of wind on the day had the potential to exceed the forward speed capability of the parachute.
9. The Tandem Master's General Parachute Permit was valid.
10. Although the Tandem Master was qualified, the rating had not been endorsed on his licence.
11. The Tandem Master's Class 2 Medical was not valid.
12. The parachute was properly packed, had a valid Certificate of Airworthiness and was in good condition.

(b) Cause

1. The approach flown by the Tandem Master resulted in an undershoot, possibly due to a gust of wind. The Tandem Master then turned and landed off the Drop Zone in a hazardous area.

(c) Contributory Cause

1. A new building was being constructed in a field that was previously hazard free.

4. SAFETY RECOMMENDATIONS

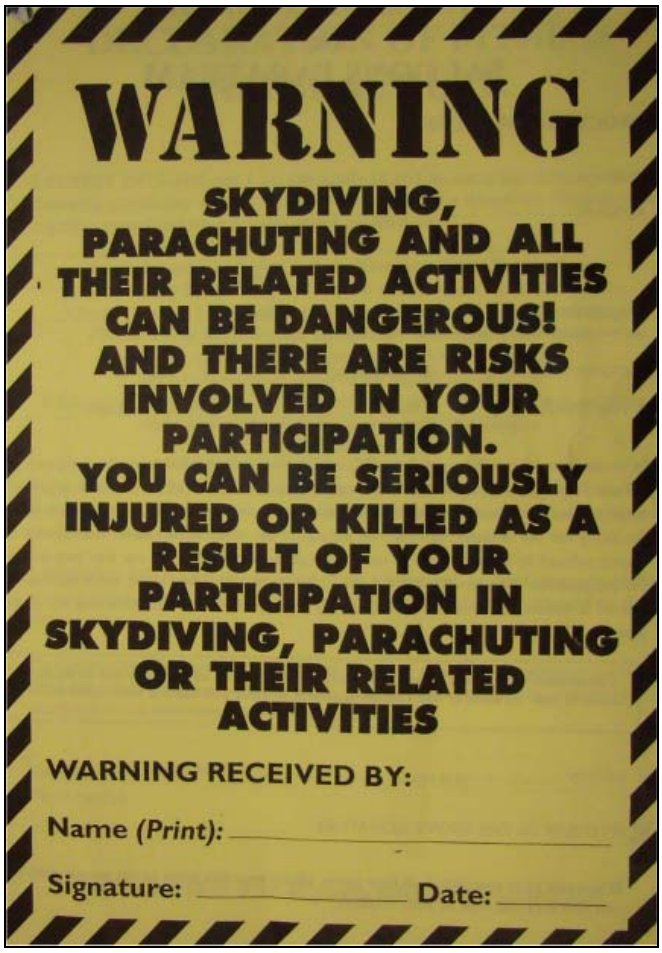
It is recommended that:

1. The Irish Aviation Authority should introduce guidance covering parachuting activity in Ireland. Such guidance should include the requirement for the Drop Zone, Undershoot and Overshoot Area of ground being free of hazards and should stipulate minimum distances of electrical power transmission cables from the Drop Zone. **(SR 08 of 2008)**

2. Parachute Centres in Ireland should amend their Operations Manual to include recertification and revalidation procedures for parachutists who have been involved in an accident or incident. **(SR 09 of 2008)**

3. Parachute centres should conduct regular inspections of the Drop Zone and its surrounding area to ensure that no new hazards or obstructions exist that affect the safe conduct of parachuting activities. **(SR 10 of 2008)**

Appendix 1



Parachute Club Warning Notice

Appendix 2

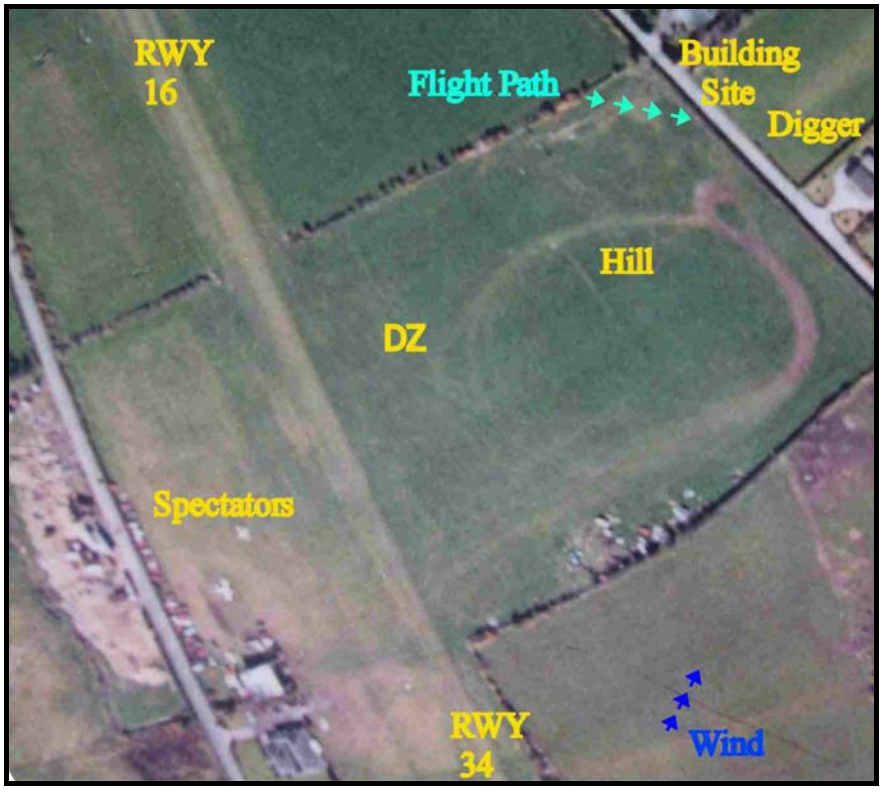


Photo No. 1: EIHN – Aerial view supplied by Parachute Club

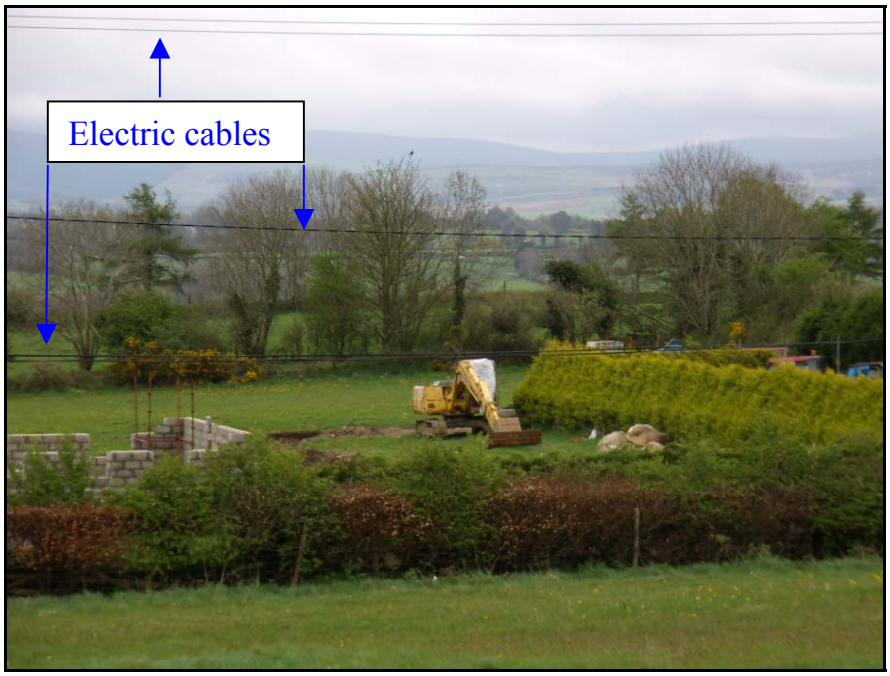


Photo No. 2: View from top of hill - airfield and drop zone are behind the camera position

- END -