

Report to the Board of Directors Of Irish Sailing

Investigation

into the

Incident

that occurred in Dun Laoghaire, on the

21st October 2017

involving the

Irish Sailing Optimist Squad, 2017 - 2018



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INTRODUCTION

Irish Sailing President Jack Roy and CEO Harry Harmon appointed Mr Philip Scallan to lead an independent review into an incident in Dun Laoghaire Harbour, on the 21st October 2017, which involved Irish Sailing's Optimist Squad. Seven junior Squad members were forced to abandon their Optimist dinghies, in the extreme weather conditions, which arose during this inaugural Squad coaching event.

Terms of Reference

Irish Sailing wish:

- to establish the facts of what happened, and
- to improve their policies and procedures to ensure the risk of a repeat incident is minimised.

Accordingly, the aims of this investigation are:

- To ascertain the sequence of events from the decision to launch, to the safe return of the personnel and equipment ashore.
- To identify any failings in policies, protocols, procedures and process during the period.
- Recommend to the Irish Sailing Board of Directors any actions required to help mitigate the risk of such an incident from re-occurring in the future.

Investigation Team

As empowered within his terms of engagement, Mr. Scallan subsequently invited Mrs. Helen Scallan to act as Secretary and Mr. Ger Keeling to assist with this review. All members of the review team act in a voluntary capacity, in the interests of furthering the aims of the investigation.

Investigative Process Adopted

In the past, incident investigations typically tended to search for immediate causes. Such an approach often unfairly focused directly on the actions of those people most central and directly involved in the incident itself. Worse still, it frequently epitomized a blame seeking culture and often obscured the background organisational or systematic root causes. If the root causes remained unaddressed, it is likely that the investigation would fail to prevent similar types of incident re-occurring, possibly with even more serious future consequences. As the terms of reference specifically requested the team to recommend "any actions required to help mitigate the risk of such an incident from re-occurring in the future", it was evident that a deeper and more systematic investigation would be appropriate.

Contemporary incident investigation practice has shifted toward a no-blame approach, where the factual data is collected and then analysed to determine the major causes of the incident. Accordingly, the team adopted a phased investigative and reporting methodology, which was based on these general contemporary practices in commercial, maritime and aviation sectors.

Normally, such processes seek to identify:

- A) The significant undesirable outcomes;
- B) The most notable immediate or direct causes of the incident in question;
- C) Other significant contributory factors;
- D) Other undesirable circumstances which arose, which could well have, but did not, on this occasion, lead to an accidental consequence;
- E) And most importantly, to identify the real root causes.

The overall program included the following major stages

Phase 1 – Gathering of all available evidence

Phase 2 – Presentation of pertinent factual information

Phase 3 – Analysis

- Analysis of factual information
- Recording of observations and undesirable circumstances
- Determination of:
 - Most Immediate Causes
 - Root Causes

Phase 4 – Recommendations

- Recommendations specific to the activities of the Irish Sailing Performance Team
- Recommendations related to other Irish Sailing's activities

Phase 5 – Concluding Comments

Exceptions and limitations

In the interests of completeness and accuracy, the following exceptions and limitations relating to the investigation process are presented:

- The investigation team was acting purely in a part-time voluntary capacity in investigating this incident.
- The team did not attempt to examine the coaching objectives, or the learning outcomes of the Squad members from the event.

- The team placed an open invitation to the parents of all the Squad members for themselves and their child to meet the investigation team for a casual discussion, if they wished. The team are very grateful to those Squad members and their parents who participated, for their honest and very helpful insights. The team fully appreciates and respect the positions of those parents who could not to participate, for one reason or another.
- The Team did not consider that it was either within their competence, nor part of their direct scope of responsibility, to probe into how the experience of the incident had impacted either physically, or psychologically upon the junior sailors or staff directly involved. The team are not aware of any reports of injury or sustained trauma.
- The team did not have adequate opportunity to inspect the condition or damage sustained to any of the boats, or other pieces of equipment.

Investigating Team's Comments

In gathering evidence, the team approached all of those who were identified to them as persons who might have had any relevant direct personal recollection of the event, or would be in a position to provide any relevant evidence, or could give a relevant professional perspective. The team is extremely pleased to record the high level of positive support and cooperation it received from all those who assisted in any way with this process.

Readers can be absolutely assured that the investigation team has had complete independence and freedom to conduct this process without any influences whatsoever being exerted. The common sentiment from everyone has been for us to learn from this and try to prevent any similar event from happening in the future.

The Team, commends, with great gratitude, the parents of the Squad members, and particularly the young Squad members themselves, for their willing and positive support of this inquiry, at a very difficult time for them, in the immediate aftermath of the incident. We gratefully acknowledge the assistance of all those who kindly provided written submissions, photographs and video evidence and of those who kindly took the time to meet with the team members. We sincerely thank the President, CEO and all the Irish Sailing Staff and, not least the Optimist Coaches positive support of our work.

The team members are extremely aware that they have had the comfortable luxury of taking time to reflect on the decisions and actions of those directly involved in organising and running the event, without being affected by any of the constraints and pressures which they had to deal with. They particularly thank them for their positive support of this inquiry and for their frank and detailed contributions.

During the investigation, many important items evidence were gathered, then carefully analysed, before the direct and underlying root causes could be positively identified. The team have carefully documented all stages of the process. It must be appreciated that an amount of the evidence was given to the team, in confidence, or in many cases, by minors, and understandably cannot be directly or fully disclosed within a public report. There is also a need to protect the rights and welfare of all of those who may have been involved in any way. Recognising this, the team chose to develop a detailed and validated synopsis of what happened, (presented in Section 4 "Presentation of Factual Evidence", which was then used to lead to the conclusions and recommendations.

Accordingly, we are pleased to present this report, containing our findings and recommendations, and remain available to advise or assist Irish Sailing in any appropriate way.

SUMMARY REPORT

This section presents:

- A short synopsis of the relevant events.
- A summary analysis of the incident.
- The identified direct and root causes.
- A summary of the main recommendations.

The section below gives a brief synopsis of the events, by way of setting the context for this overall report summary. Section 4 “Presentation of Factual Information” gives a more detailed chronological account of all relevant events from the re-establishment of the Optimist Pathway Development Program. Readers are strongly encouraged to study all sections of the document to gain a full perspective of the incident.

Synopsis

In June 2017, Irish Sailing decided to re-include the Optimist dinghy class within its Performance Pathway programs. The Optimist dinghy is internationally recognised as a “starter” sailing craft, typically used by young sailors aged approximately eight to sixteen years old. The Irish Sailing’s 2017 – 2018 Optimist Squad was re-established in September 2017 and a Pathway Development Coaching Program was put in place for sixteen of Ireland’s most promising junior sailors.

In September 2017, Irish sailing recruited an experienced international Optimist coach, from Belgium, to act as the Lead Coach. He had not previously worked with Irish Sailing, but came highly recommended from his earlier coaching of the privately organised “DOGS” Optimist summer coaching program in Dun Laoghaire.

A Dublin based Assistant Coach was also recruited to assist the Lead Coach for the Squad’s inaugural coaching session. She is a qualified Irish Sailing / Coaching Ireland (Sport Ireland) sailing coach and a former member of a previous junior Irish Sailing Pathway Development Squad.

Neither of the coaches had previously worked professionally with Irish Sailing, nor with one another. Apart from brief electronic communications exchanges, they only met in person on the morning of the inaugural coaching event.

On the 21st of October 2017, the Squad members and their coaches launched in Dun Laoghaire Harbour, at approximately 11:00. Early into this coaching session, winds significantly changed direction and gusts increased in strength, as the south-western edge of Storm Brian’s eye-wall approached. This brought sudden strong squalls, with failing visibility and quickly developed short period peaky wave patterns, within the Harbour. Some of the sailors began to experience difficulties, as conditions worsened, it was decided to abandon the coaching session and this decision was then communicated to the sailors.

Nine of the squad members, who were in a more sheltered windward position, managed to return to shore safely, under their own sail power. The remainder of the fleet, in a more open leeward position, got caught in unusually-high and confused wave patterns, which developed near the East Pier wall. These seven members were forced to abandon their dinghies, which eventually sustained significant damage from impact against the pier wall. The investigation team understands that none of the squad members or coaching staff sustained any serious injury, or chronic trauma, as a result of this incident. It is further understood that Irish Sailing assisted in securing speedy recompense for the damage to the boats which sustained damage.

During the coaching session, the sailors were accompanied by their two coaches, each separately and single-handedly operating a Rigid Inflatable Boat (RIB). Early into the coaching session both coaches encountered difficulties with these boats, which were unfamiliar to them. By the time the incident escalated to emergency proportions, the Lead Coach's RIB had become completely disabled, with a fuel related engine failure. It was slowly drifting, under anchor, toward the East Pier Wall. From this point onwards, the Lead Coach was helpless to assist and, without radio capability available to him, he was unable to manage the overall situation.

The Assistant Coach, who had previously been escorting the nine most windward sailors back to the shore, noticed the seven more leeward sailors, further out in the Harbour, in difficulties against the East Pier wall. Observing that the Lead Coach still seemed to be experiencing engine difficulties, she altered course and turned her attention toward rescuing these sailors. Concerned primarily for their safety, she immediately advised the sailors to abandon their boats. She rescued four of the sailors into her RIB and observed that the remaining three sailors were rescued onto the pier wall by persons on the shore, who were not directly associated with the event. The action of the Assistant Coach in assuming charge and rescuing four of the sailors is to be commended.

Having returned the rescued sailors to the shore and satisfied herself that all of the Squad's sailors were now safely ashore, she returned to assist the Lead Coach, who, by this time, managed to re-start his boat, but was still experiencing propulsion power difficulties, due to previously sustained propeller damage. Initially, they considered what actions they could take to recover the seven unmanned dinghies, but decided that it was both difficult and dangerous.

A number of concerned persons ashore realised that some of the squad members had arrived back to the National Yacht Club unaccompanied. Having observed the difficulties of the remaining sailors and their coaches, decided to raise the alarm. By the time RNLI Inshore Lifeboat was launched, all of the Squad's sailors were safely ashore.

The Lifeboat made contact with the two coach boats, which by that time, were both suffering from propulsion difficulties. The coaches confirmed, to the RNLI crew, that all of the sailors were safely ashore. Both of the coaches' RIBs were taken in tow (one by the Lifeboat and one by an assisting RIB from the Royal St George Yacht Club) and both coaches were landed at the National Yacht Club pontoon to take charge of the Squad Members ashore.

Background and Summary Analysis

By definition, competitive sport seeks to push boundaries. Our top tier of athletes and their coaches, must, understandably, strive toward constant achievement and improvement to drive their success in top international competition. Unlike many other competitive international activities, sailing does not take place in a well-controlled environment, but is very subject to the vagaries of the weather. Competitive sailors' success must therefore depend on their ability to maximise performance in any prevailing conditions. Pushing personal boundaries and honing their skills and experiences in progressively more challenging circumstances is a natural and necessary a part of the athlete's development.

At the core of this discussion is the effective assessment, mitigation and control of risk. Most people are familiar with workplace practices, where repetitive daily processes are carried out in purpose built environments. In such cases, once-off static risk assessment exercises and fixed safe work processes generally suffice. In contrast, watersport activities take place within the uncontrollable maritime environment, where the risks associated with otherwise identical activities can vary significantly with even small changes in the prevailing conditions, thus requiring vastly different levels of preparatory safety control arrangements.

Dinghy racing is a competitive activity, involving varying sized fleets of boats. These fleets rely on common support and safety boat resources for their collective safety. In normal circumstances, individual dinghy sailors are self-reliant and can depart, race and return to shore, without any assistance whatever. When some minor difficulties are experienced by the sailors, safety boats generally maintain a comforting presence nearby, while the sailors resolve their problems without direct assistance. In more demanding conditions the safety boats may need to

physically intervene and assist the sailors to resume sailing. In worsening conditions many sailors can simultaneously require safety boat support. In extreme cases, the entire sailing compliment may need to be assisted back to the safety of land, or have their boats taken in tow. Small dis-improvements in prevailing conditions can drastically change the level of safety response required.

It is therefore vital that risk assessment processes properly anticipate the true level of risk that might occur and that the appropriate risk reduction and risk control measures are provided in advance. Where situations arise such that the demand overwhelms the level of resource available and it then becomes necessary to request emergency assistance.

Where large scale events are being planned, or in cases where there are other particular risks, it is essential to consider the capability and capacity of the local emergency service, always bearing in mind the possibility of these resources being committed elsewhere, when required. In cases where the response requirement for an emergency incident exceeds the available local emergency capacity and capability, then a major emergency situation must automatically be declared. Unfortunately, a number of dinghy sailing events have had to be elevated to major incident in recent years.

In summary, this incident clearly demonstrated how a dinghy fleet activity can easily escalate beyond the capabilities of the resources which were planned for it.

This incident, and the arrival of storm Brian, occurred just five days after Hurricane Ophelia had caused a one-day national shutdown in Ireland and very tragically resulted in the deaths of three people. Quite naturally, media and public opinion in Ireland became temporarily focused on the safety of all outdoor activities in such extreme weather conditions. In the immediate aftermath of the Optimist Squad coaching session of 21st October, the incident was reported at national news level. Many opinions were expressed in direct correspondence to Irish Sailing, and more widely within social and public media about what had gone wrong and opinions were offered as to why. Much of the discussion involved the decision to launch and the awareness of the relevant risks.

With the benefit of hindsight, it is obvious that the impact of this incident could clearly have been averted if the decision to launch had not been taken. The original terms of reference for this inquiry requested that the team should examine the incident from the point of this decision, up until all personnel were safely ashore. Having now had the opportunity to examine the case, in reasonable detail, the team conclude that it would have been grossly unfair to focus on the consequences of this one decision alone, without considering the other intricate circumstances and influences, which also prevailed.

Summary Conclusions

In summary, the team concluded that:

- The original decision to launch was made in good faith by the Lead Coach.
- He communicated this in a general text to the Squad members and their parents, prior to their arrival at the venue.
- This decision had been based on his own personal assessment, following a considered and lengthy review of numerous weather forecasting sites.
- On the basis of this information, he was convinced that suitable sailing conditions would be available immediately after their arrival at the National Yacht Club and would last for a three-hour period. On that basis, he believed that a two-hour sailing session was possible.

- Upon their arrival at 0925 the coaches had just 35 minutes to prepare for their coaching session before the squad arrived at 1000 for the official start of the coaching session.
- They briefly discussed the weather conditions and continued to monitor real time weather feeds, right up to the time of launching.
- Both coaches became engrossed in trying to overcome the following significant shortcomings in the arrangements, which had been put in place for them:
 - No room appeared to be available, either for briefing, or for alternative shore based tuition.
 - The keys for one of the RIBS allocated to them had not been delivered, as promised.
 - They made a decision to hire one of the National Yacht Club RIBS as its replacement
 - They encountered difficulties in locating the Sailing marks, which had been left for their use
- One of the most notable observations to emerge was a complete lack of clarity as to who was directly responsible for making and ensuring that adequate practical preparation was made for these coaching sessions.
- In such circumstances, balance of judgement must swing toward failures of processes and systems which ought to have been in place, rather than on the actions, or omissions, of any of those individuals directly involved.
- Given the potential storm circumstances, which were well forecast, the resources, equipment and facilities, which had been provided for the coaches, were not adequate, by most contemporary measures, in that:
 - There were no properly equipped and fully crewed safety boats available for their support
 - There was no assigned “Beachmaster” function, capable of independently supervising launch and return of the Squad members
 - There was no person designated to act as an informed Shore Contact, with details of the plans and the participants
 - Coaches were not provided with VHF Radios
- Perceiving a pressure to seize the only likely opportunity to go afloat for the entire weekend, and possibly influenced by the lack of an arranged alternative shore-based room facility available for them, the coaches proceeded to launch for a limited sailing session, within the enclosed confines of Dun Laoghaire Harbour.
- Dun Laoghaire Harbour Master was not advised of the proposed sailing course, which impeded both the main Harbour entrance and the inner entrance to the marina.
- At approximately 10:20, the coaches briefed the squad members to launch, confident that the relatively benign conditions at that time (as were evident on historical video footage) would persist for a further two hours.
- Conditions deteriorated more rapidly and more violently than had been assumed.

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- Thwarted by the lack of the appropriate back-up resources and by the progressive failure of equipment, the situation quickly escalated beyond their control.
 - Despite this rushed and questionable decision to launch, the team concluded that the worst impact of the incident might still have been averted entirely, had some of the above mentioned additional actions and risk mitigation measures been in place.
 - Apart from its Performance Team coaching operations, many of Irish Sailing's other activities do not involve direct organisation of, or participation in, sailing events.
 - As a national governing body for sailing, its organisational focus is more directed toward devising policies and offering guidance frameworks, leaving it to its member organisations to develop their own detailed processes, procedures, controls and direct oversight measures to safely manage the wide variety of types of sailing events and within the very varied geographical and environmental conditions in which they are set.
 - Notably, Irish Sailing's staffs' other main sea going activity involves the Training section and the Regional Development Officers. Most of these activities directly oversee its external Recognised Training Centers (Commercial and Club based) in the safe management and delivery of Irish Sailing's approved training courses. The center inspectors examine and comment on the adequacy of equipment, safety and operational procedures put in place by these independent bodies, during an annual audit.
 - In many ways, the activities and processes of Irish Sailing's Performance section is directly comparable to those of the external training centers, but it does not operate under these schemes.
 - Whilst, this all might go some way to explaining the scarcity of formal processes, procedures and controls, controlling internal activities, it cannot excuse their absence.
 - Following on from the above, perhaps the most concerning observation relates more to the general adequacy and suitability of contemporary national practices in dinghy fleet safety and welfare management, similar to those adopted by the Performance Team in its operations.
 - The following observations are relevant:
 - In common with many organisations, Irish Sailing tends to rely on once-off static risk assessment processes, with associated fixed risk control arrangements, generally put in place for regulatory compliance.
 - Whilst these practices suffice in many conventional workplace settings, their output is often too generic to have direct practical relevance in the very variable circumstances prevailing at individual dinghy sailing sessions.
 - Two similar dinghy fleet events, which may be of a very alike in nature and scale can be held within a wide variety of conditions and set in differing geographical locations. They therefore require appropriately variable and proportionately scaled risk control measures to be put in place.
 - Many dinghy sailing activities take place, on an almost daily basis, without serious consequences, where, in most cases, the participants do not need any safety assistance at all.
 - In more marginal circumstances, a number of participants may only require the comforting presence of safety resources.
 - The level of difficulty, severity and duration of any particular request for safety assistance request is very variable.
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- Generally, the likely number of simultaneous requests for assistance and the degree or assistance engagement required increases dramatically with even slight dis-improvement in the prevailing conditions, or with minor changes to arrangements.
- Many conventional workplace risk modelling methodologies are based on once off linearly scaled quantification of risk and consequence, which are not directly helpful in predicting the level of risk control arrangements required for activities such as sailing, where even small changes in prevailing conditions can dramatically increase the required safety control needs.
- These inherent weaknesses in contemporary practices unfortunately lead to tacit compliance with regulatory requirements through once-off formally filed risk assessments, defining vague and generic risk control measures. Frankly, many are of limited practical use to those making go / no-go decisions under the pressures of normal circumstances.
- In this vacuum, people fall back on more simple, informal and ad-hoc assessment of instantaneous risks together followed by subjective judgements of whether the available safety management resources are sufficient in capacity and capability.
- Occasionally, as in this case, the resources available are found to be insufficient for the prevailing conditions.
- As also happened, in this case, the contingencies of multiple equipment failure are not adequately provided for.
- These, together with the onset of more sudden and violent conditions than had been expected put the situation beyond the capabilities of those involved to maintain safe operations.
- As conditions got worse, it should have been clear that the incident required emergency assistance.
- From discussions within this enquiry and from the more general personal experiences of the team members, event management teams are often reluctant to make a timely call for additional emergency assistance.
- Occasionally, there can be worrying differences of opinion between race management and safety management functions.
- In this context, it is not uncommon to hear dinghy fleet safety boat functions referred to as "rescue" boats.
- Irish Sailing provides well-structured training and competence development schemes for sailing and powered boating participants and their instructor coaches.
- In particular, the Safety Boat Certificate course is intended to prepare candidates for providing general safety back-up at all general water activity events, but it clearly has its origins in dinghy fleet sailing support.
- Yet, it is well known that most event organisers and organisations do not even mandate this level of competence for their regular safety boat operational functions.
- Many clubs and class associations only require National Powerboat Certificate level of qualification, and then not for all safety boat crew members.
- It must be noted that the emergency circumstances which evolved in this case, were as a direct result of the inability to provide more timely and appropriate levels of preventative safety intervention.
- Thus, the incident eventually required levels of rescue competencies beyond which is envisaged for regular safety boat operations and beyond the scope of Safety Boat training levels.
- Although, in general, larger scale dinghy events tend to have more formal assessment of risks and evaluation of the necessary event resources, their organisers should recognise that these events also have a real possibility of overwhelming the locally available emergency resource capacity, even assuming that all of the local resources are free to respond and not otherwise committed elsewhere, if needed.

- Perfectly illustrating this point, another valuable lesson can be learned from this incident. The onset of the extreme weather conditions also caused a similarly scaled dinghy incident at the other end of Dun Laoghaire Harbour, which also required simultaneous emergency services assistance.
- For all of these reasons, and indeed to get good free professional advice, it is seen as accepted good practice for organisers of dinghy fleet events to advise both the maritime emergency services and relevant local maritime authority representative (Harbour Master, or Local Authority Marine Officer) of their intentions and arrangements, in advance.

Direct Impact of the Incident

As a result of the circumstances which arose:

1. Seven young sailors of the 2017 – 2018 Irish Sailing Optimist Squad found themselves in traumatic and frightening circumstances, when their Optimist Dinghies, became un-maneuverable, whilst being held by strong wind and wave patterns, near to the East Pier wall. This resulted in the need for them to abandon their boats and be rescued. Thankfully the incident was thus resolved, without physical injury being reported, but resulted in significant damages to the abandoned dinghies.
2. The RIB, which being operated by the Lead Coach, initially suffered fuel-related engine failure. Following deployment of the vessel's anchor, the vessel drifted, head to sea, filling with water and until its stern became engaged with the East Pier Wall. This apparently resulted in damage to the vessel's propeller / outboard drive section. By the time the Lead Coach eventually managed to resolve the problem and get under way, at limited speed, all the Squad members had been safely rescued. This failure resulted in the total RIB resources available to the Squad being halved and, because of the lack of radio communication, it effectively prevented the Lead Coach from exercising any effective management of the incident.

Other Undesirable Circumstances Which Directly Arose

Whilst both coaches were overwhelmed in dealing with circumstances which unfolded out on the water:

- Eight of the squad members, who made it ashore under their own resources and who were then no longer under appropriate adult supervision. They decided to run down the East Pier to assist their colleagues, thereby placing themselves into danger, within the worsening weather conditions.
- The incident was elevated to an emergency, through the diligent actions of concerned persons in the National Yacht Club. Although they were not directly involved in any way in the event, they had observed the situation escalating. By the time the Lifeboat had been paged, all of the Squad's sailors were safely ashore.
- As these people could not discover any source of information about the identities and number of those involved in the coaching session, they were not in a position to give the responding emergency services a complete situation report, until a parent of one of the Squad members arrived on scene and was in a position to provide the positive identities of all of the squad members.
- Significant confusion arose among the responding services, as to how many persons were involved. The investigation discovered that the numbers of reported casualties varied between 15 and 18. It took a considerable time for Lifeboat and the Irish Coastguard to be positively assured that all were safely ashore.
- This confusion was added to by the fact that another emergency incident, involving a similar sized dinghy fleet, was simultaneously occurring on the Western side of Dun Laoghaire Harbour. This incident had been separately reported to Irish Coast Guard. Valuable emergency response time was lost in unscrambling the facts of both incidents and in dealing with the damaged RIBS from this incident.

Primary Direct Cause of the Incident

- Appropriate preparatory arrangements were not made.
- Appropriate equipment, resources and facilities were not provided.
- A decision to launch based on weather conditions alone, without the coaches having time to fully evaluate all relevant risks or of the adequacy of these provided risk control measures.

Root Causes of the Incident

- The establishment of the 2017 – 2018 Optimist Squad program was executed without any obvious or adequately structured project management approach.
- There was a lack of clarity as to who exactly was responsible for key preparations.
- This, together with a short implementation timescale, led to hasty and incomplete preparations, which failed to provide the coaches with a proper induction and failed to quantify and provided the essential resources, facilities and equipment needed for the inaugural coaching session.
- The lack of conventional formal mechanisms (plans, projects, processes, procedures, guidance, arrangements etc.) failed to guide those implementing the project and equally failed to facilitate effective oversight of activities by senior management or of effective governance at board level.
- Irish Sailing's current Health Safety and Welfare statement content is too generic to clearly identify specific risks, or to define appropriate control provisions for many of its daily maritime activities.
- Contemporary national risk management practices and cultures, as are generally applied to dinghy fleet sailing, and as were apparently used by on this occasion, tend to be disjointed from their overarching Health, Safety and Welfare Statement provisions.

RECOMMENDATIONS

Comments

As a result of this investigation, the team has identified many areas where lessons can be learned from this incident. The team believe that there is a need for a substantive revision of Irish Sailing's related internal policies and practices. This should also be supported with the development of more practical and relevant risk and process quality management tools, if prevention of a similar incident is to become a reality.

It is beyond both the scope and the available time resources of this current investigation team to review further, or to prescribe detailed changes to Irish Sailing's internal management arrangements and governance processes.

As discussed in the preceding texts, the investigation team observed that the current internal arrangements and cultural approach to safety management, is in many ways reflective of contemporary national safety practices. The team therefore suggest that, in parallel with reviewing Irish Sailing internal safety arrangements, that it could, as the national governing body for sailing sports, establish and lead a broader national initiative to improve general safety practices among its member organisations and aim to develop a more effective and more integrated national dinghy sailing safety management culture.

In this broader context, the team members therefore submit the following outline recommendations and commit to assisting the Board and management of Irish Sailing further in addressing any detail.

The Recommendations:

1. A top down internal review of all existing policies, processes, procedures, practices, controls and oversight mechanisms related specifically to the management of performance coaching programs

Review considerations should include, but not necessarily be limited to:

- Development of more formally defined processes to implement performance coaching programs.
- Development of clearer definitions of levels of authority, responsibility and accountability for the overall management and support of the various performance coaching program, projects and campaigns
- Development of arrangements for the management and measurement of the quality of outcome for these programs.
- Development of practical tools and aids such as easy to use process/ procedural guidance, structured reports and practical checklist mechanisms to assist coaches and their coaching program-delivery managers in providing safe and effective coaching services, as well as providing a basis for improved oversight.
- Provision of the essential logistical arrangements and infrastructure to support these coaching programs.
- Introduction of more formal management processes to ensure readiness, reliability, maintenance and condition assurance of all key physical assets (boats, trailers, vehicles), equipment, supplies and consumables required to support coaching activities.

- Development of mechanisms to ensure proper management oversight of outsourced coaching programs.
 - Development of the proper induction, validation and training of those involved in these programs.
 - Establishment of effective arrangements to ensure continued compliance, improvement and adequate oversight of whatever processes are put in place.
2. Revision of Irish Sailing's Health, Safety and Welfare statement.
 3. Review specific chains of responsibility for the practical implementation of safety arrangements.
 4. Inspire the development of a more active and vibrant Health Safety and Welfare culture within the organisation, making it clear that improvements are to everyone's benefit and are everyone's responsibility.
 5. Development of practical measures and appropriate monitoring to ensure awareness and implementation of Irish Sailing's policy and recommended practices document "Code of Ethics and Good Practices (for activities involving Children and Vulnerable Adults)" in all activities where Irish Sailing staff and contractors are directly involving children and vulnerable adults.
 6. Recognise that there is a common need among Irish Sailing's member organisations for improved policies and practical guidance for the safety of dinghy fleet sailing in general. Accordingly, consider establishing a broader project, with national scope, among member organisations with the aims similar to:
 - Reviewing the adequacy of contemporary risk assessment methodologies typically used in for the management of dinghy fleet safety.
 - Providing easy-to-use and practical guidance to assess event specific risks and to indicate appropriately scaled control measures.
 - Testing and validating the measures developed on a variety of types and scales of activities.
 - Proposing appropriate training for all personnel involved in the use of the mechanisms put in place by the project.

PRESENTATION OF FACTUAL EVIDENCE

This section presents the main output of activities during Phase 2 of the Investigation, to complete the task of “Presentation of Factual Information”.

Efforts were mainly centered on the compilation and presentation of a chronological “time-line” report summarising the sequence of significant events. At this point in the process, the team noted that the original terms of reference requested a presentation of the sequence of events and analysis of the failures of process and procedure from the decision to launch, to the time when all were safely ashore. Having reflected carefully upon the information which had already been gathered, the team concluded that focusing only on the activities and process failures immediately following the “decision to launch” would completely fail to present the context and constraints in which the decisions and actions were set and could unfairly treat those directly involved on the day. Accordingly, it was agreed that the sequence of events and decisions from the decision by Irish Sailing to re-establishment of the Optimist Squad within the Performance Pathway program, up to and including all significant activities on the day of 21st of October 2017, until the point where all participants were safely ashore.

Meteorological Data

Table 1 – Dublin Bay Buoy – Twitter Feed

BST	AVG Wind speed Kts	Gust max	Direction
0959	9	33	213
1000	8	29	176
1009	8	29	144
1059	7	33	137
1117	8	34	137
1135	11	40	180

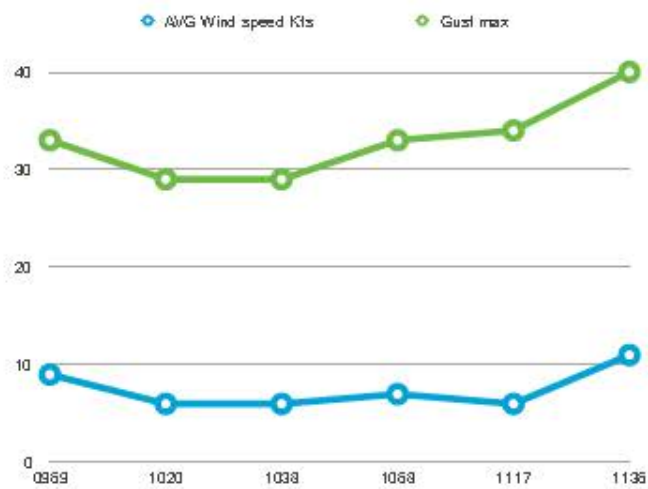
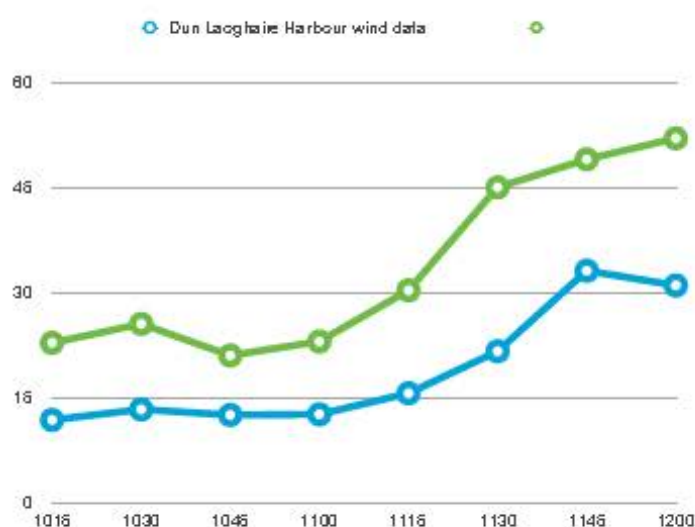


Table 2 – Dun Laoghaire Harbour Wind Data

Dun Laoghaire Harbour wind data			
BST	AVG Wind speed Kts	Gust max	Direction
1015	11.9	22.9	177
1030	13.3	26.6	184
1045	12.6	21	181
1100	12.8	23	187
1115	16.8	30.3	240
1130	21.8	46	274
1145	33.1	49	279
1200	31	62	282



Chronological Sequence of Events

The following paragraphs present the chronologically validated synthesis of all information received, which was subsequently used by the team to analyse what happened and to reach the conclusions presented earlier within this report. Of necessity, this is lengthy and detailed. In the interests of brevity and readability in presenting the report details earlier in Section 2 “Summary Report”, a less detailed summary of these events was given there, to set the general context. This section provides greater details, in a chronological format, for readers who are interested.

Re-establishment of the Optimist Pathway Class

The decision to reintroduce the Optimist class within Irish Sailing’s Performance program, was taken in June 2017. Accordingly, in September 2017, the Irish Sailing Optimist Squad 2017/2018 was re-established. Sixteen high performing young Optimist sailors were selected as the members of this 2017-2018 “Squad”. The intended program comprised of a number of weekends’ intensive coaching sessions and a competitive overseas sailing event in Spain was also planned. The first coaching session was scheduled to begin on Saturday 21st October 2017.

Initial Preparations for the First Coaching Session

Irish Sailing engaged two professional coaches to provide coaching services.

A professional international sailing coach, based in Belgium, who had previously coached a number of the Squad members in Dun Laoghaire, through the privately organised DOGS program, was appointed as the Squad's Lead Coach.

An ISA qualified senior sailing instructor, with a Coaching Ireland level 2 accreditation, herself a member of previous Irish Sailing Optimist Squad's, was appointed as the Assistant Coach, for the inaugural weekend on 21st – 22nd October 2017.

As far as can be determined, no plans existed for any additional support resources, or personnel, other than these two coaches for the coaching sessions in Ireland.

The Squad's program was primarily managed by the Irish Sailing Optimist Squad Liaison Manager, who acted as the link between the Irish Sailing Performance unit to the Optimist Squad and coaches. As Irish Sailing does not have its own waterfront facilities, arrangements were made with the National Yacht Club, Dun Laoghaire to provide limited waterfront and changing facilities to support this inaugural coaching session. It had not been envisaged that any personnel, nor any on-the-water support resources of the Club would be required. As part of this arrangement and at the request of the National Yacht Club Sailing Manager, the Irish Sailing Optimist Squad Liaison Manager forwarded a list of the Squad members by e-mail.

Friday 20th October 2017 – The Day Before the Inaugural Coaching Session

On Friday 20th October, the Irish Sailing Optimist Squad Liaison Manager visited the National Yacht Club to prepare and refuel the two Irish Sailing RIBs assigned to the Optimist Squad event. These were then berthed at the National Yacht Club pontoon. He confirmed that the built-in operational tank of the 5.8-metre RIB was almost full of fuel. He put a full 20 litre portable fuel tank and a 10 litre can on the 5.4-metre RIB, which had a non-functional built-in fuel tank. He left a set of racing marks with the National Yacht Club Boathouse and advised a member of the boathouse staff.

As the Irish Sailing Optimist Squad Liaison Manager would not be in attendance on Saturday and would be unavailable for telephone contact, he transmitted briefing instructions verbally to the Lead Coach in a telephone conversation on Friday evening. From the evidence of the Optimist Squad Liaison Manager, the main messages passed in this telephone conversation were:

- 1) A description of the area of the National Yacht Club deck area which the Optimist Squad were to use
- 2) That a set of Irish Sailing' sailing marks had been left for their use
- 3) That the keys of the 5.8 metre RIB was not on site at that time, but would be made available prior to Saturday morning
- 4) That the built-in fuel tank of the 5.4 metre RIB was not functional and that a separate portable fuel tank was being used as an alternative

The team noted minor differences between both parties' detailed recollection and prioritisation of these verbally exchanged pieces of information. The Lead Coach believed that he received an assurance that a shore based room facility would be available for the Squad's shore-based activity, however, it later transpired that there was some confusion over both parties understanding of the room booking arrangements. Certainly, this ambiguity and

further confusion over item 2, 3 and 4 were destined to cause significant delays and added duress to the Coaches' preparations on the following morning.

During the previous few days, most of Ireland had been recovering from the national shut-down and damage caused by Hurricane Ophelia during Monday 16th October. As early as Tuesday 17th October, various forecasting models had also been predicting the arrival of another low-pressure weather system, later named by the Meteorological Service as "Storm Brian".

The Lead Coach had been watching many weather forecasting web sites (Weather maps, Windfinder and Windguru) from early in the week and initially, believed that the weather would not be suitable for sailing over the weekend. By afternoon on Friday 20th October, 2017 various forecasting sites were indicating that the center of the low pressure area, associated with Storm Brian, would pass near to Dun Laoghaire on Saturday 21st October, 2017, at around the time scheduled for the beginning of the planned inaugural coaching event.

From interviews and submissions, it is clear that the Lead Coach believed that it was important for the Squad members "to take every possible opportunity, weather permitting, to go on the water". Before departing on his way from Belgium to Ireland on Friday 20th October, he had once again revisited forecasting sites. He concluded that there might be a short period of low wind speeds, which, he believed could provide a brief, and possibly the only safe opportunity to sail over the entire weekend. This period of low wind speeds clearly coincided with the assumed transit of the center of low pressure area (commonly referred to as the "eye" of a storm) across the Dun Laoghaire area.

Typically, the onset and departure of such storm center transits are characterised by rapidly falling and then rising barometric pressure, short periods of reasonably clear visibility, dropping wind speeds and significant wind changes, or even reversals of wind direction. In this instance, it was forecast that the initial to South East to South wind directions would veer to a West to North West direction as the transit of the eye of the storm occurred.

Saturday 21st October 2017 – The Day of the Inaugural Squad Coaching Session

At approximately 07:00 BST (06:00 UTC) on the morning of the event, the Lead Coach once again monitored the forecast sites and read the real-time data feed from the Dublin Bay buoy, which gives the current average wind velocity and the velocity and direction of recent gusts. In evidence presented, the forecast information available at that time predicted wind speeds for 10:00 BST (09:00 UTC) to be 15 knots gusting 26 and at 13:00 BST (12:00 UTC) 13 knots gusting 23 knots. Based on this information which he had just reviewed, at 08:45 BST (07:45 UTC), he transmitted a What's App message to the Squad sailors and/or their parents requesting that when they arrive at the National Yacht Club, that they would either be changed into their sailing gear, or have their boats rigged, by 10:00 BST (09:00 UTC).

*"Good morning everybody, looks like forecast changed a little, so **this morning** might be one of the best possibilities to have a session. If possible please be rigged or changed at 10:00. See you at 10:00 downstairs in the National Yacht Club."*

The two coaches only met for the first time at the National Yacht Club at approximately 09:25 BST (08:25 UTC) on this first day. This was only a half an hour before the young trainees were scheduled to arrive and be ready to sail. Prior to that, the coaches had only had limited remote communications. There does not appear to have been much prior discussion about the actual program, or specific plans for the day's arrangements.

Both coaches were aware of the approaching storm system. Both had been individually and independently monitoring its progression carefully, using a number of different forecasting models and other locally available real-time information to keep themselves informed. The Assistant Coach had basically assumed that they would not be going afloat and had taken the time to prepare alternative shore exercises.

Directly after they met at the National Yacht Club they briefly discussed the weather conditions and shared their knowledge of forecast data.

The Lead Coach discussed his belief that passing of the low-pressure center of the weather system would provide a brief opportunity for the Squad to have a short and safe sail for approximately two hours. They also reviewed the real-time data from Dublin Bay Buoy and continued to monitor this feed up to the time of launch.

The Lead Coach later submitted, in evidence, a copy of forecasting information, which he had earlier used earlier that morning in making his decision (as was conveyed in the WhatsApp message to the Squad Member). This predicted SSW winds at speeds of 15 kts. gusting to 25 kts. at 10:00 BST (09:00 UTC), followed by NW 13 kts. gusting to 23 kts. at 13:00 BST (06:00 UTC). The Lead Coach also noted, in evidence, that none of the parents, or others in the National Yacht Club on that morning had directly raised any doubts about this decision

The Lead Coach decided that the Squad's sailing activities would be confined to the more sheltered area within the walls of Dun Laoghaire Harbour, rather than out in the open waters of Dublin Bay. The Assistant Coach deferred to this decision, trusting this judgement of the more experienced Lead Coach. They agreed plans to set a simple windward / leeward course within the confines of Dun Laoghaire's outer Harbour. It is noted that they did not communicate or discuss this intention with the Dun Laoghaire Harbour Master, as is the practice requested in 'Notices to Mariners'.

Within the course of this discussions on the weather, they discovered that there was a problem with booking arrangements for shore based room facilities (which they were then using) at the National Yacht club. The room which they had assumed was reserved for their use had been booked by another group. Their initial enquiries, at this point, failed to secure an alternative suitable shore-based work area.

Based on a message communicated to the Lead Coach from the Irish Sailing Liaison Manager, the coaches then went to prepare the two Irish Sailing RIBs, at the Club's pontoon. From this area, they would have had an opportunity to view the relatively calm sea conditions prevailing within Dun Laoghaire Harbour although, at that time, their attention had become more focused on their second major challenge – they could not locate the keys for one of the boats, as per their prior briefing instructions. It soon became clear that the keys were not on site.

Both coaches then proceeded back to a temporarily vacant shore based briefing/training room, in preparation for the arrival of the Squad members. They had been assured that a room had been allocated for them. Unable to determine, which room had been booked for their use, they made a working assumption and simply began to set up in this small room in the lower level. Apparently, they were also informed that this facility had been booked by another group. Considerable time was therefore lost and this undoubtedly created undue stresses. It now appears that no room had actually been booked for them.

At approximately 10:10 BST (09:10 UTC), having lost significant time with these preparations, and still with unresolved logistical problems, both coaches proceeded to brief the Squad members, prior to going afloat. The Lead Coach gave the briefing and the Assistant Coach went to look for the Irish Sailing racing Marks, which they also had difficulty in finding or positively identifying.

Following the briefing, and whilst the Squad members were completing their preparations for launching, the Coaches returned to the pontoons to try resolve the RIB problems. Now certain that the keys for one RIB could not be located and were still having difficulty in trying to locate other essential equipment. At this point, they sought the assistance of the National Yacht Club's boathouse team, who kindly assisted by trying some spare keys which they had available, but without success. It was then apparent that only one of the two Irish Sailing RIBs would now not be available to them. Unable to contact anyone in Irish Sailing's Performance team, the Lead Coach then made direct arrangements with National Boat Club's personnel to hire one of their RIBs. This RIB was

supplied with a VHF portable radio – the only means of communication available to the team. It is believed that the National Yacht Club also provided another radio, as none were available from Irish Sailing, but it is evident that only one RIB had radio communications whilst afloat, for some unknown reason.

With no time left before the briefed Squad launch time, there was little opportunity to check the RIBs, to properly familiarize themselves with them, to check communications, to verify their operation on the water or to inspect and prepare the proposed sailing area.

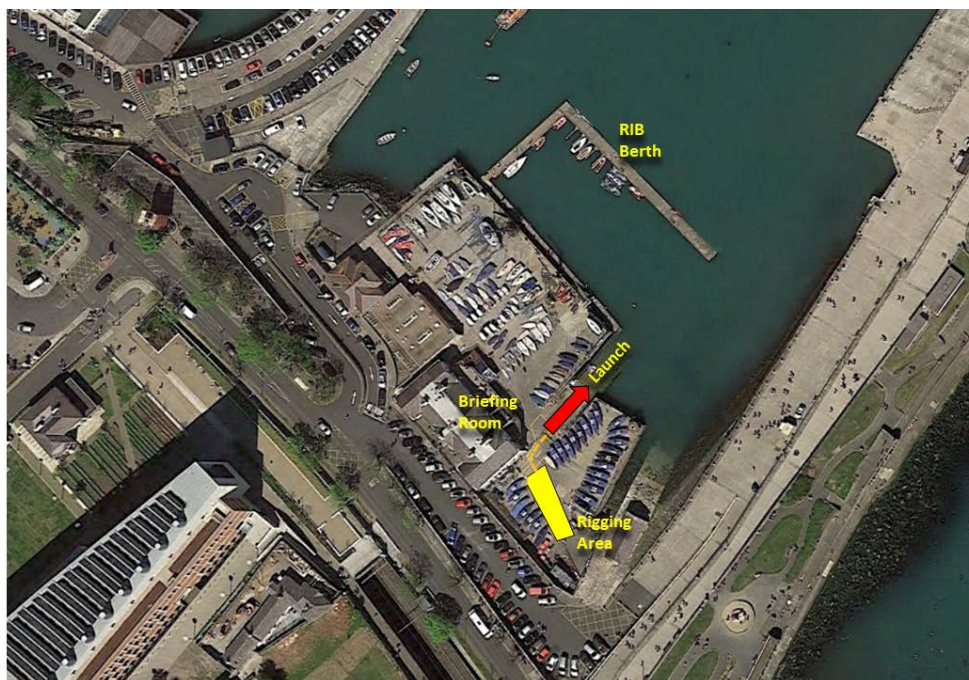
The Decision to Go Afloat

The final decision to go afloat seems to have been made primarily, by the Lead Coach at the end of the Squads Briefing, at around 10:20 BST (09:20 UTC). This was conveyed to the Squad members present. Deferring to the expertise and judgement of the Lead Coach, the Assistant Coach tacitly agreed.

From what can be ascertained, the discussions and criteria evaluated in making this decision were primarily based on the prevailing and estimated future development of the weather conditions. It does not appear as if sufficient time was available to make a more holistic appraisal of all major risks and of the adequacy of the risk mitigation and safety control measures which were in place.

Activity Afloat – From the Decision to Launch until the Decision to Abandon Sailing

Following the briefing, at approximately 10:30 BST (09:30 UTC) the trainees proceeded back to their boats, located in the National Yacht Club Compound to the East side of the Club house, adjacent to the head of the National Yacht Club slipway and prepared to launch.



National Yacht Club Layout

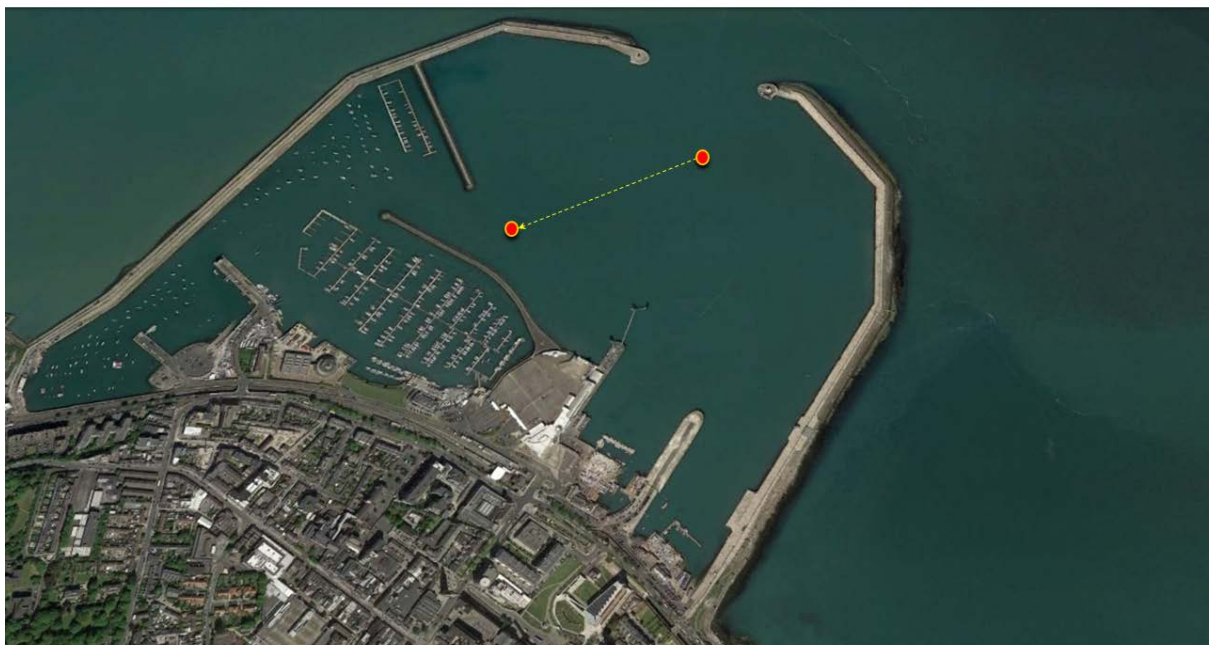
The coaches proceeded to the National Yacht Club Pontoon, to seaward of the rear of the Clubhouse to embark the Irish Sailing RIB (Lead Coach) and the National Yacht Club RIB (Assistant Coach). The Irish Sailing RIB had both sailing marks on board.

From what can be ascertained, neither of the coaches had any opportunity to visit the area where the boats were being rigged for sea, nor to inspect the preliminary rig settings. As far as can be determined, the Squad members proceeded to launch their boats themselves, as briefed, but apparently unsupervised.

Timed video footage shows that the first four optimists launched almost simultaneously 11:05 BST (10:05 UTC). The Lead Coach departed in the Irish Sailing RIB, equipped with two sailing marks, which he intended to deploy in a windward – leeward course within the Harbour. By the time this first RIB (Lead Coach) departed at 11:08 BST (10:08 UTC), nine Squad members had already managed to launch and were heading out toward the East Bight of the Harbour. By 11:12 BST (10:12 UTC) fourteen Optimists had launched and were following the fleet leaders out into the Harbour. At this stage the Assistant Coach departed the berth and was promptly followed by the remaining two Optimists.

At this stage, video footage shows relatively flat sea conditions, at least in the vicinity of the National Yacht Club launch area. However, the effect of frequent gusts can be clearly seen on the water surface. Further witness evidence, from the father of one of the Squad members, who was on Dun Laoghaire Harbour Marina at the time, also reported flat sea conditions and cited observing an un-scattered oil slick near the marina, at around the time of the launch.

Relatively quickly after departure, the Lead Coach caught up with the leading Optimists, out in the East Bight and directed them in the approximate direction of the entrance to the Dun Laoghaire Marina, where he would shortly be setting a windward mark. He first spent some time with a number of the sailors, helping them to trim their sails for the increasing wind conditions. He then headed to the approximate upwind position indicated below to set the windward mark. It is also noted that the sailing course, that was laid, would have impeded the main fairway, for vessels entering the harbour for shelter, or entering and exiting the Marina area. The intention to lay this sailing course should previously have been discussed with and approved in advance by the Harbour Master. Please see Notices to Mariners attached in Appendices 1 & 2, below



The Approximate Windward – Leeward Course

Whilst making her way out with the last of the Optimists to launch, the Assistant Coach experienced some difficulties in getting her RIB to operate at any more than an estimated 1/3 normal speed. She proceeded to take

up station at the weather mark, as had been agreed. She did not have any means of letting the Lead Coach know of her difficulties, as he did not have a VHF radio. By this stage, estimated to be approximately 11:20 BST (10:20 UTC) the Lead Coach had set the leeward marker and the Squad members were generally sailing up and down the course.

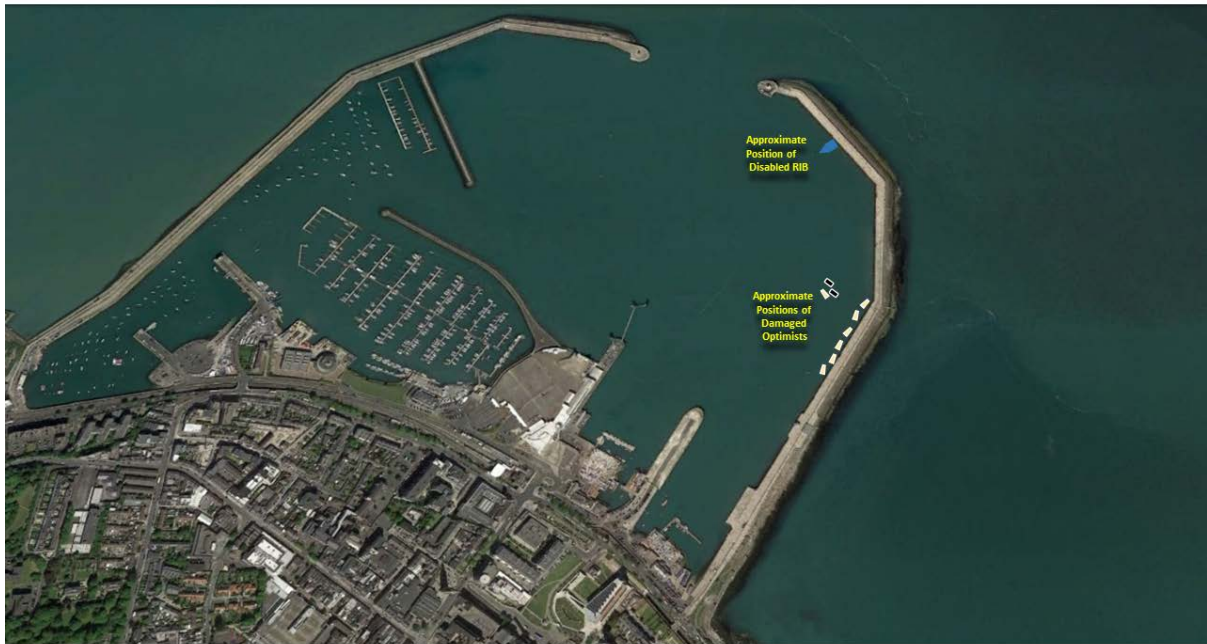


The Decision to Abandon the Coaching Session

At 11:22 BST (10:22 UTC) video footage shows the sudden onset of relatively heavy squalls followed shortly afterwards by accompanying heavy showers and rapidly falling visibility. The Assistant Coach noted that many of the sailors were by now experiencing difficulties. She also noticed that the Lead Coach was now obviously having engine difficulties and was drifting. She proceeded to his position and they then decided to advise all of the sailors to make their way back. He assured her that his problems were fuel related and that he was confident that he could conduct repairs himself. His intention [following repairs] was to remain with the downwind boats (approximately seven in number) nearest to the leeward mark. The Assistant Coach then re-joined the more upwind boats and escorted them back to a position near to the old HSS Jetty.

These members of the Squad managed to sail back to the National Yacht Club unassisted and to recover their own boats. Video footage confirms that the leading seven Optimists rounded the Carlisle Pier and landed on the National Yacht Club slipway at 11:37 BST (10:37 UTC), closely followed by a further two at 11:39 BST (10:39 UTC). This makes a total of nine Optimists in all, which landed safely at the National Yacht Club.

Rescue of Squad Members in difficulties



At approximately 11:33 BST (10:33 UTC), having escorted the more upwind members of the Squad to a position roughly abeam of the old HSS terminal, the Assistant Coach noticed that the Head Coach's RIB, was apparently still having engine difficulties and now nearing the East Wall. She also noticed that the seven remaining Squad members, who had been the most downwind of the fleet, were by now being blown onto the East Pier Wall. She decided to go immediately to their assistance, as the other boats, which she had been supervising, appeared as if they could sail back unaccompanied.

On reaching the East Pier position the Assistant Coach observed that the remaining Squad members, many still on board their Optimist dinghies, unable to sail and were being raised and lowered against the wall by the confused wave actions.



Rescue at East Pier

Examination of available video footage and still images, clearly shows the Optimist dinghies being held against the lee shore pier wall. The strong onshore winds created significant waves, which, together with associated reflected patterns created confused, peaky standing wave – type patterns having amplitudes estimated at 1 meter Significant Wave Height. In addition to the dinghies being accelerated vertically by these waves, the combination of the wind force orthogonal to the pier wall and the resulting frictional forces between the hull and the wall induced an additional exaggerated rolling motion.

Having quickly assessed the scene, the Assistant Coach decided to advise the Squad members to abandon their dinghies and board her RIB. She managed to rescue three Squad members from their dinghies at the wall and then proceeded to pick up one, who had already abandoned and managed to board a nearby moored pontoon section approximately 50 meters away from the wall. As far as she could see, the other three Squad members had, by then, been helped onto the pier by passers-by. She headed to the National Yacht Club pontoon to disembark the four Squad members at 11:54 BST (10:54 UTC). Once the four Squad members were ashore, the Assistant Coach headed out to assist the Lead Coach, who she had last seen drifting toward the outer section of the East Pier wall in the disabled RIB.

Squad Members Activity upon return

It is not clear exactly what happened following the landing of the initial nine Squad members, who managed to return to the National Yacht Club pontoon on their own, by approximately 11:45 BST (10:45 UTC). It is known that some of the Squad members contacted their parents by telephone shortly after landing.

At 11:50 BST (10:50 UTC) video footage shows approximately eight juniors (believed to be the Squad Members) exiting the National Yacht Club compound and running down the pier toward their distressed colleagues. At 11:53 BST (10:53 UTC) two adults (believed to be two coaches conducting Topper training in the National Yacht Club) are seen similarly exiting the National Yacht Club compound and running down the Pier, following the Squad members. Shortly thereafter, the adults and the Squad members are seen returning to the National Yacht Club compound.

From information discovered from the interviews and written submissions, a number of adults within the National Yacht Club, who had not been directly associated with the Optimist Squad exercise became concerned for the safety of the Squad members and decided to alert the emergency services. This was done by means a direct call to a member of Dun Laoghaire Lifeboat Operations Management team. The Lifeboat crew pagers activated at 11:55 BST (10:55 UTC)

Initially the adults could not locate any information on the number and identities of the Squad members and their coaches. At 11:48 BST (10:48 UTC) a parent of one of the Squad members, and a member of the National Yacht Club, received a call from his son that he was safely ashore, but that some of the Squad were still in trouble. Being nearby, he returned immediately to the Yacht Club and, with a colleague, began to make arrangements to go afloat and assist. They tried to make radio contact with the Squad, but failed. They then received information that all had now been rescued and stood down their preparations to go afloat. Sometime around 12:00 BST (11:00 UTC) he then made his way to where Topper Coaches and the assembled adults were looking after the returned sailors. He was in a position to provide the missing identity details of all squad members. Those present then jointly conducted a person by person head count and confirm positively that all of the Squad's sailors were present and uninjured. At 12:08 BST (11:08 UTC) the parent concerned sent a message to the Optimist "WhatsApp" group to re-assure other parents that their children were safely ashore. Pending the return of the two Optimist Squad coaches, the Squad members were being cared for by some of the Squad members' parents, who had arrived, the two Topper coaches, a number of adults present in the Club

At around this time, a member of the Irish Coast Guard's Dun Laoghaire Unit arrived at the National Yacht Club and those present verified to him that all of the Junior Sailors were safe. Shortly after this time, the emergency Services team left the area to respond to a similar incident at the western end of Dun Laoghaire Harbour.

The Disabled RIB

From approximately 11:25 BST (10:25 UTC) the Irish Sailing RIB, with the Lead Coach on board, had remained completely disabled. The Lead Coach correctly assessed that the problem was related to fuel supply. He poured some of the fuel from the spare fuel can into the RIBs main fuel tank. This failed to cure the problem and, by now the RIB was drifting closer to the East Pier Wall. He deployed the anchor, but continued to drift slowly toward the wall. Available video footage shows the RIB eventually drifted, head to weather, onto the East Pier, with the sponson cones and the engine rubbing against the wall. His position was further out along the pier than the position where the dinghies had become trapped. Despite the fact that his boat was filling with water, due to the wave action, he continued to try to resolve in a half-flooded boat.

In his evidence, the Lead Coach confirmed that, prior to his departure, he had verified that the level of the main fuel tank was almost full. It transpired that the main fuel tank, into which he had earlier poured some of the spare fuel, was not in fact connected to the engine. From this, it is now clear that there was confusion from the telephone briefing of the previous day, as to which of the Irish Sailing RIBs had the inoperative internal fuel tank. Eventually, he discovered another portable tank on board, containing some fuel. When he connected this to the engine, he eventually managed to re-start it. He recovered the anchor and at 11:51 BST (10:51 UTC) began to make way to the area where the dinghies were still being washed against the wall. He inspected the boats, one by one and confirmed that none of the Squad members were still in difficulties in the area. Previously, he had watched the rescue of these members, from some distance away along the wall, whilst his boat was disabled, but he wanted to make sure that all Squad members had been recovered from the water.

Attempts to Recover Optimist Dinghies

The Lead Coach made an attempt to recover one of the boats from the wall, by physically holding the painter, whilst driving the RIB. He could not sustain his grip and was forced to release the tow. Subsequently, he managed to take a different dinghy in tow and take it to a mooring. However, his earlier contact with the pier wall had apparently done some damage to the propeller.

Contact with Emergency Services

At approximately 11:55 BST (10:55 UTC) the Assistant Coach departed the National Yacht Club pontoon, having previously landed the four Squad members some minutes before. When she returned to the area where the Optimist dinghies were, she met the Lead coach, who had just abandoned his efforts to recover the boats.

The RNLI Inshore Lifeboat launched at 11:57 BST (10:57 UTC) and intercepted the Squad's RIBs with the Lead Coach and Assistant Coach. They confirmed that they had charge of the Optimist Squad and the Coaches confirmed that the Squad members had been accounted for. At this point, the Lifeboat crew advised the Coaches to return to shore and to leave the dinghies.

The National Yacht Club RIB, which was being used by the Assistant Coach became disabled due to a rope being washed out through the RIB's drain trunk and becoming entangled in the propeller. The Lifeboat took the RIB in tow and secured the vessel to a nearby moorings. They took the Assistant Coach on board and landed her on the National Yacht Club pontoon at approximately 12:18 BST (11:18 UTC).

At around the same time, a RIB from the Royal St George Yacht Club arrived on scene to assist and took the damaged Irish Sailing RIB in tow to the National Yacht Club pontoon. By 12:21 BST (10:21 UTC) all members of the Squad and the two coaches were back in the National Yacht Club. At this point, the Lead Coach and the Assistant Coach went personally to ensure that the Squad members were all safely ashore.

Picture credits

Cover page; Coast Guard

Page 23; Google Earth

Page 24; Google Earth

Page 25; Stephen Collins/Collins Photo Agency

Page 26; Google Earth

Page 27 Afloat Magazine

APPENDIX 1 - Copy of Notice to Mariners No 2 (2017)**No. 2 (2017)
DUN LAOGHAIRE HARBOUR
NOTICE TO MARINERS
FAIRWAY PRIORITIES**

Dun Laoghaire Harbour Company
Harbour Lodge
Crofton Road
Dun Laoghaire
Co Dublin

Date: 1 January 2017

The harbour fairways and approaches are generally to be kept clear and free. It is prohibited to anchor or lay moorings in these areas as marked on navigational publications and charts. No Race Marks, Buoys, Floats, etc. are to be laid in the fairways or the near approaches to the harbour – and no racing shall take place other than by specific written permission from the Harbour Master.

Any Lobster / Crab Pots that are laid shall remain clear of all harbour navigational waters, and slipways.

Clear Fairway Priorities

Large Power driven vessels (Cruise, Ferries, Lighthouse Authorities, Naval) and smaller power-driven vessels with restricted manoeuvrability (such as cruise ship tenders and small passenger ferries etc) have priority over all other craft, including the area of the harbour limits that extend 600 metres seaward of the harbour mouth.

Signals

Large Power driven vessels are to sound a prolonged blast when approaching the harbour mouth from either direction, or the appropriate signal when manoeuvring off, departing or preparing to depart from their berths.

Irrespective as to whether or not any such signal is sounded, the obligation remains for small craft to give priority to the large power driven vessels.

By Order
Simon Coate
Harbour Master

Contact Numbers: Phone: +353 1 280 8011 or +353 83 144 3412
Fax: +353 1 280 9278
Email: info@dlharbour.ie
Website: www.dlharbour.ie

APPENDIX 2 - Copy of Notice to Mariners No 4 (2017)

No. 4 (2017)
DUN LAOGHAIRE HARBOUR
NOTICE TO MARINERS
SMALL CRAFT – VARIOUS REGULATIONS AND
RESTRICTIONS

Dun Laoghaire Harbour Company
Harbour Lodge
Crofton Road
Dun Laoghaire
Co Dublin
Date: 1 January 2017

Main Fairway Large power driven Vessels (Cruise, Ferries, Lighthouse Authorities, Naval, smaller power-driven vessels with restricted manoeuvrability such as cruise ship tenders, smaller passenger ferries etc) have priority over all other craft in the main fairways and harbour approaches It is incumbent upon each individual small craft, but especially dinghies engaged in sail training and dinghies engaged in racing with permission, to ensure early and sufficient action is taken to present a free and unhindered passage to the these power-driven vessels

Attention is also drawn to the "Maritime Safety Act, 2005" whereby the contravention of its Section No. 23 attracts heavy fines and /or terms of imprisonment for, "Dangerous navigation or operation of vessels"; and to the DTTAS Notice No 29 of 2009 – "Small craft operating at entrances to ports"

The Marina Fairway is to be kept clear at all times. Craft transiting to/from sea are to keep on the Starboard side of their fairway
Windsurfing, Paragliding, etc. are NOT permitted within the Harbour unless with specific permission in writing from the Harbour Master

Speed Limits - Speedboats, Jet Skis, etc are to observe a speed of 8 Knots (15 kph) This applies to all craft in Dun Laoghaire Harbour and its approaches. This limit reduces to 4 knots (or no wake) within the marina

Diving, Sub Aqua, Swimming activities, etc are generally NOT permitted within the harbour owing to the danger from water traffic. Application for permission to dive (e.g. for servicing of yacht moorings) and applications for permission to swim must be made in writing. These activities may then take place only when the specific permission (in writing) is received from the Harbour Master. The activity must comply with all the operational conditions of the granted permission

Harbour Recreational Area for Small Craft is the triangular area of the North Bight- westwards of a line from West Pier Lighthouse to the marina west breakwater

By Order
Simon Coate
Harbour Master

Contact Numbers: Phone: +353 1 280 8011 or +353 83 144 3412 Fax: +353 1 280 8062
Email: info@dlharbour.ie
Website: www.dlharbour.ie