CORMACRUISERS

237

HIGH COURT ON CIRCUIT
COUNTY TIPPERARY NORTH RIDING AT NENAGH

RECORD NOS. 38N/1982 and 39N/1982

IN THE MATTER OF AN APPLICATION FOR COMPENSATION FOR MALICIOUS INJURY TO PROPERTY AND OF THE MALICIOUS INJURIES ACT 1981

BETWEEN:

CORMACRUISERS LIMITED AND
CRUISING CRAFT SHANNON LIMITED
BOTH OF KILLALOE IN THE COUNTY OF TIPPERARY

Applicants

and

THE COUNTY COUNCIL OF THE COUNTY OF TIPPERARY (NORTH RIDING)

Respondents

Judgment of Mr. Justice Doyle delivered the 7th day of June 1984.

This is a claim for damages for malicious injury to the applicants' property at Cullenagh, County Tipperary, where it is claimed that a yacht marina incorporating a workshop and offices together with stock, machinery and office equipment and also two cruising craft which had been brought there for the purpose of carrying out certain repairs were maliciously damaged by fire on Sunday night the 22nd day of November, 1981.

Mr. James Scouler, the first witness, deposed that he was a joint owner with his brother of the shares in the applicant companies. The premises were first observed to be on fire apparently at about 10.30 p.m. on Sunday night the 22nd November, 1981. Mr. Scouler first learned that his premises

were on fire after his wife had been informed of the fact and he arrived on the scene about 2.15 or 2.30 a.m. on the following morning. In the course of cross-examination by Mr. Kennedy of Counsel for the respondents Mr. Scouler stated that when he arrived at the scene of the fire he was not allowed to enter the premises as the Guards were present investigating the matter and"I think the fire brigade was still doing what they could to extinguish the blaze." In the course of his direct evidence Mr. Scouler had stated that when they acquired the premises he and his brother changed all the locks which he stated he believed to be a standard business practice. Their staff included a safety officer, a Mr. Amundsen, who was also a member of the local fire brigade. He and his brother had cut down on staff and dispensed with the service of one or more employees who had been working for the previ owners of the yacht marina and boat repair premises. Mr. Scouler further stated that the insurers for himself and h brother had caused the premises to be inspected when they went into occupation and that no difficulties arose and n requirements were mentioned by the insurance company's ag The next witness was Dr. Caroline Maguire who holds a de

in Environmental Science. She carried out an examination of the marina at Cullenagh. She carries on practice with her husband as fire assessors. Dr. Maguire produced an album of coloured photographs taken in the premises after the fire. She drew particular attention to photograph No. 10 which shows amongst other debris portion of the cut end of a pipe which she learned, she said, from an investigating guard had been found to be dripping diesel oil after the fire. She stated her view that the temperature in a fire of the magnitude of that which she had been called upon to examine could rise to seven hundred degrees centigrade and in those circumstances diesel oil if spread would burn quite readily. There were produced to her two sections of copper piping described as complex joints and she stated that she was satisfied that these had not been broken by falling debris or bending back and forth. She thought the fire appeared to have been started in a corner underneath certain racks which were used for storing sail cloth or tarpaulin. Both she stated were flammable material. She thought that there might be another place of origin of the fire close to a toilet at the left rear of the building but did not exclude the

possibility that the fire may have been seated in this second location by spreading from the first one which she mentioned namely the racks of sail cloth. She had first visited the scene on the 25th November, 1981 the day after the Guards had carried out an investigation and had had in the process to disturb some of the debris. She re-visited the scene on the 26th July, 1983 after the hearing in the Circuit Court on the 26th June of that year. On that occasion certain articles and a portion of the burnt building had been removed by her partner and husband Dr. McDaeid.

Dr. Maguire further stated that part of the roof had had a transparent section which was composed of glass reinforced by polythene and the two boats which had been damaged in the fire had fibreglass hulls but probably of a different type to the polythene reinforcement in the roof. It had been suggested and was part of the applicants' case that entry might have been made through the roof and that exit from the premises after the arson had been committed would have been simple since there were yale type locks which could be opened by turning a knob and locked by pulling the door after the person making his exit. Dr. Maguire was disposed to exclude

the possibility of the fire having been caused by an electrical fault. She did see some wire she said in cross-examination by Mr. Kennedy which had been shown to her by Detective Guard Quinn and which exhibited signs that there had been what he described as "arcing." The Detective had told her that this was the only evidence which he could find of an electrical fault causing the fire or being involved in the origin of the fire. Dr. Maguire had earlier stated her opinion that the pipe which apparently had dripped the diesel oil and which was shown in her photograph No. 10 had been cut and not damaged by falling debris as had been suggested to her. The next witness was Mr. Michael Norton, a forensic scientist attached to the Forensic Science Laboratory at the Garda Headquarters in Phoenix Park. He stated that on the 27th November, 1981 he had received from Detective Garda S. Quinn, one of the investigating Gardai, a sealed container with a sample of liquid labelled "F.S.1296/81 found beside seat of fire at Cormacruisers, Ballina, Killaloe on the 24/11/1981 S.Q." He stated that he had examined this sample and that the liquid consisted of two layers, a very thin oily layer and another lighter layer. The sample had an odour of creosote or disinfectant and was not flammable. A

portion of the sample which he extracted was found to contain a mixture of hydrocarbon solvents and a further portion of the sample when evaporated down was found to leave a solid residue which was not chemically identified. Mr. Norton's evidence yielded no positive assistance and he was not cross-examined. This concluded the evidence at a quarter past five on the first day of the trial and the case was resumed on the following morning, Tuesday the 18th October when the first witness was Mr. Kevin O'Farrell. He had been General Manager of the yacht marina since 1970. His services were retained when the premises were taken over by the Scouler Bros. in 1981. Mr. O'Farrell gave a general description of the lay-out of the premises with particular reference to the plan, prepared by Messrs Michael Punch and Partners, of the marina. He stated that the partition shown between the areas labelled B and C was really composed of pillars and was not a solid wall. The store in fact ran through the areas B and C and his, Mr. O'Farrell's office, was over the store. The timber racks which had been described ran the full length of the rear wall of the store and the lowest of them was from ten inches to fifteen inches above the floor. The fuse box was

independent of the racks and was at the rear wall.

From 1978 to 1980 Mr. Robinson was the Sales Manager and he was succeeded by a Mr. Casey who remained in the firm until 1981. There were occasional power failures in the Killaloe area and there were two heating systems in the premises. The necessary welding work was done in a workshop on the opposite wall to the canteen. There were two tanks for diesel fuel, one capable of containing 12,000 gallons and a smaller one of a domestic size with a capacity of 300 gallons. At the time of the fire two cabin cruisers twenty three feet long and diesel engined were in for overhaul. They were of glass fibre construction and were enclosed except for the cockpit. There were canopies over the cockpits rather like the soft top that one sees in motor cars. The firm was very busy in November overhauling; this work was looked after by Mr. Amundsen. Mr. O'Farrell said that he lived up river from the marina. On the night of the fire he was in a hotel. "I left the hotel at 11.20 and drove to my office, a few minutes drive. I saw nothing and I went home to bed." This was in the course of a routine visit by Mr. O'Farrell. At 11.40 he was wakened by the fire siren. "I thought it was the hotel

which was on fire and I drove in that direction and found that it was the marina. My primary concern was the gas stove and the petrol. I parked at the back of the marina and walked to the front past Section A colour green on the plan. The door into the workshop was locked. When the doors were opened by the fire brigade I went in and found the two boats were burning from their sterns forward; the fires in the boats were internal. I stood on a trailer and tried to put the fire out with an extinguisher. The stores at the back of area B were burning over the whole width of this part of the building. Cross-examined by Mr. Kennedy Mr. O'Farrell stated that he gave a statement to the Gardai on the 21st December, 1981 in the course of which he stated

"When I arrived the complete workshop area was ablaze and the two cabin cruisers were on fire."

I did go into the offices to try to remove some articles after I had been to the store. The cushions in the store were of plastic foam and were readily combustible. I don't agree that the premises had got into bad repair. I wasn't aware of an alteration in the pipeline. It was in a corner and not easily damaged. I am not aware that it was damaged or that

there had been leakages. We did receive a notice by letter dated the 11th February, 1977 that we were required under the Factories Act to provide fire extinguishers and to fix the electric wiring which was described as hazardous. That work I believe was done. I don't remember other fires taking place. The wiring was modified by contractors between 1977 and 1980. I was not aware that there was a nest of cabling and wires near the canteen. A pipe carrying diesel oil should not be of copper but of steel. There was a five gallon container near the "T/Piece" of the piping; it was not for catching leaks but was used for solvent. The roof together with the roof lights were under Cullen's windows and the Cullen's had a labrador watch dog.

The next witness was Mr. John Amundsen, a carpenter, and he would sometimes pass the night on a cruiser outside the buildings. On the afternoon of the fire he got there about 3 p.m. He checked around. Things were normal. The machinery was switched off. "I left by the main door" he said "and locked it. I am also a member of the Killaloe Fire Brigade which is partly a volunteer brigade. I approached the workshop area and the doors." Cross-examined by Mr.

Kennedy for the respondents Mr. Amundsen stated that the roof towards the back of the store had collapsed and he added "I don't think anybody could readily get in through the roof." He remembered a boiler in the toilet going on fire ten years previously. "I put that fire out with an extinguisher. Sometimes there would be a pool of diesel oil in the toilet where the pipe would bleed. Newspapers had to be put there to mop up the mess." He added; "I remember once a roof timber being scorched. It was above the heater in the lean-to. After rain on one occasion an electric wire had "shorted." The main fuse box was at the back of the workshop and it was added to from time to time. Guard Patrick Madden then gave evidence. He is attached to the Garda Station at Killaloe and at 23.34 hrs. he received a report of the fire. He went to the fire station and when he got to the marina the entire workshop area was on fire and there was a heavy flow of smoke. He helped in evacuating the Cullens from their premises. The wind was from the south west. The scene he said, under cross-examination, was preserved until Detective Guard Quinn could carry out an inspection. Mr. James Leonard, the next witness was Station officer of the Killaloe Fire

Brigade and he said:-

"We were at the scene within minutes. The whole roof structure was ablaze. At the hotel end there was petrol and gas cylinders. We could see the cruisers on fire internally; the fire seemed to start in the cabin of the cruisers. The roof had not then fallen in."

Cross-examined by Mr. Kennedy Mr. Leonard stated that on the 24th November, 1981 the day after the fire he made a statement to the Guards in which he had said the roof was on fire but that the galvanised part had not fallen. There was a burnt out wire taken from the small store off the canteen. There was a bench inside and it was used for charging a battery. It went across to the cruiser. The wire burnt its own insulation, a workman's overalls and started the fire in the boats. This wire was in one boat but the other boat was also burning. Detective Sergeant Quinn said he found no visible sign of a forced entry in the premises. There were polyurethene cushions which could easily be ignited by reflected heat. Cross-examined he said: "I concluded that the fire had originated above the fuse box area at the back of the stores. There were two concrete walls there so the

fire seeking oxygen must travel forwards, thus involving the offices, then forwards to the front of the buildings." His attention was drawn to Mr. Tennyson's photographs Nos. 14 and 7 and he conceded that he had had only two years electrical training in Bolton Street Technical School. He agreed that it was to some extent guesswork as to how the fire started and he added

"I thought the electrical installation was serviceable." No one was apprehended for the fire. "On the way home on the Sunday night I heard no noise; there was a fire alarm and a bell and the fire may have set the alarm off". The next witness Mr. Hugh Pollock, is a Bachelor of Engineering both Mechanical and Electrical. He examined the premises in the week of the fire on the 28th November, 1981. There was one distribution board at the back and another on the left. The main distribution board was that on the rear wall of the workshop and it was fed by an underground cable. This board had apparently been mounted on a panel which had burnt away and the various units that made up the board were lying on the ground. All the fuses had already been removed by the Gardai. The second distribution board already referred to

was fed from the main board and it was located on the left hand side of the workshop. This board was still in position at the time of Mr. Pollock's inspection and its fuses were intact. The wiring used throughout the workshop would in the opinion of the witness have been adequate for the loads supplied. He didn't find any indication in the fuse box forming a basis for the existence of "hot spots" nor was there any indication in the material available of loose connections. He was, by agreement, allowed to produce a Report made after his visit. It stated, inter alia:

> "The workshop had closed down on Saturday around mid-day. A visit was paid to it by a member of the staff on Sunday afternoon. As mentioned above all hand tools had been removed from their sockets and the large machines switched off. The main lights were switched off at a point near the centre of the workshop. There could therefore have been no current flowing to create a "hot spot" at any loose connection or in a plug top that was making poor contact. A short circuit was unlikely. In the event of a short circuit then the fuses would have cleared it rapidly."

In general he came to the conclusion subject to the condition of the fuses in the main distribution board that there was no evidence to suggest that the fire had an electrical origin. This witness concluded the evidence on behalf of the applicants. The first witness for the respondents, The Tipperary North Riding County Council, was Mr. Thomas Clune. He had once been employed as a fitter on the premises and commenced work there in 1977. He said

> "I helped to reconnect the fuel pipes from the tanks. One fed the central heating and I cut the piping with a hack-saw. The shelving was all around the left side of the installation. The connections were plastic but of very good quality. You might have to bleed the pipe to stop an air leak. I bled it myself into a five gallon drum. This was a temporary rather than a permanent job."

Mr. Anthony McLoughlin a machinery overseer visited the premises soon after the fire and on the 4th July he went back to look at the premises. He did not offer any positive evidence sufficient to establish any tenable theory for the start of the fire.

Mr. Anthony Tennyson, a Consulting Engineer, next gave

evidence on behalf of the respondents. He was examined by Mr. Kennedy and produced a report which both sides agreed should be admitted in evidence. This was a very practical measure to adopt and enabled me to understand more clearly evidence of a very technical character. I now incorporate this report into my judgment and I have marked it with the letter "A" and have signed my name upon it. When cross-examined by Mr. Peart for the applicants he stated that his principal criticism was the use of unprotected cables in the workshop and this indicated to his mind some bad workmanship but he agreed that the electrical installation did not cause or contribute to the spreading of the fire. When he was re-examined by Mr. Kennedy Mr. Tennyson stated that if the cushions had been set on fire in the cockpits of the boats then the burning debris was more likely to spread the fire and this rendered the radiant heat theory, which had been expressed by a Garda expert, less acceptable because he thought the rear wall was not near enough to effect this radiation of heat.

The next witness was Michael Dillon, the Chief Fire Officer of the Tipperary North Riding County Council. In the

course of a memorandum to the County Secretary which corresponded substantially with his testimony at the hearing he stated that when he visited the scene his first impression was of dangling wires and oily rags, a very old venting pipe and no adequate fire prevention precautions having been taken. In the course of his report to the County Secretary he advanced a new theory based upon the fact that he had observed heavily oil saturated cleaning cloths in areas close to the seat of the fire and he expressed the view that if such clothes had been piled they could have been the cause of the fire due to spontaneous combustion. He went on to make critical observations as to the nature of the petroleum installation on the driveway east of the building which he said did not comply with the regulations made under the Dangerous Substances Acts of 1972 to 1979. He disagreed with the view which had been expressed by the Detectives that an arsonist could have entered through the roof. He stated that from his experience it would have been far simpler for an arsonist to gain entry to the timber framed office area and far more to his advantage, because of the nature of the office area, to commence the fire. He thought that to have

entered through the corrugated iron roof created an unnecessary risk of being observed by the neighbours and also posed the problem of how to get out again. It will be recollected that an earlier witness had disposed of that particular problem by saying that the culprit, if such there were, could have effected his exit by merely opening the door and pulling it behind him. Mr. Dillon summarised his evidence and the matters contained in his report to the County Secretary by expressing his conviction that the fire was of accidental origin either by electrical fault, spontaneous combustion or a combination of both. When cross-examined by Mr. Peart Mr. Dillon stated that he arrived at the scene of the fire after it had been extinguished. Most of the hulls of the boats were still intact.

He went on:-

> "I believe the fire started at the back corner down where the racks are."

This concluded the evidence for the County Council.

I am bound to attach weight to the evidence of Dr. Caroline Maguire, partner in a firm of experienced fire assessors, the more so since it is not substantially controverted by Mr. Tennyson, the well-known consulting engineer called on behalf of the respondent County Council. She believed that the fire had been started in a corner of the store, underneath racks of sail cloth or tarpaulin which she described as flammable material. Mr. Tennyson concurred in her view as to the place where the fire probably had started. She drew attention to another possible place of origin of the fire, close to a toilet at the left rere of the building, but she did not exclude the possibility that this second conflagration may have been caused by spreading from the burning racks of sail cloth. She was disposed to rule out electrical fault as a cause. Entry by the miscreant could have been effected through the roof, she thought; exit presented no problem. The doors were fitted with Yale locks. They could be opened from inside by turning a knob, and secured from outside by closing the door.

A witness of prime importance was Mr. Kevin O'Farrell, General Manager of the Marina, who had paid a routine visit

inspection to the premises shortly after 11.20 p.m. on the night of the fire and found the premises intact. Mr. O'Farrell impressed me as a man of great experience and a highly reliable employee. The door of the workshop was found to be locked when he returned to the premises on hearing the fire sirens. When the premises were opened by the Fire Brigade and he was able to enter the workshop he found that the two boats there were burning internally.

The premises had been visited earlier that day by Mr. John Amundsden, a carpenter employed by the applicants who is also a member of Killaloe Fire Brigade and would be alert to any warning of fire. He found things normal; the machinery was switched off; he left by the main door which he locked.

Mr. Anthony Kennedy, S.C. for the respondent Count Council relied strongly upon the absence of any evidence of ill-will or spite against the owners of the Marina, or of any other instances of arson in the neighbourhood. He characterised the happening as an unexplained mystery. However, the element of malice required to found a claim for compensation such as this can be supplied by showing that the damage was caused by a wrongful act done intentionally. Such a wrongful intent may

be inferred even when it is not possible to demonstrate ill-will, by establishing the absence of an accidental cause.

Over the years the Court have tended to modify the stringent test posed by Kennedy C.J. in Artificial Coal Co. -v- Minster for Finance (1928) I.R. 238 and Crowe -v- Tipperary Co. Council (1928) I.R. 255 which required an applicant, in the absence of direct evidence of the damage, to "exclude every reasonable hypothesis which affords an innocent explanation of the injury consistent with the facts....." For many years now the Courts have adopted the view that reasonable probability is sufficient to establish that damage was maliciously caused. Dixon J. accepted this approach to be correct in Morrison -v- Dublin Corporation (1948) I.R. 424. In Prendergast -v- Kerry Co. Council, 84 I.L.T.R. 185 Black J. declined to follow another decision of the High Court, stating his opinion that "the degree of proof required is the same as that required in any other civil action."

In the present case the preponderance of the evidence excludes electrical fault as a cause of the fire. The only proponent of spontaneous combustion is an employee of the

respondents, and he receives no support in the scientific evidence.

I find as a probability that the fire was deliberately started by igniting the racks of sail cloth and perhaps also the plastic foam cushions, part of the furniture of the cabin cruisers. These boats were found to be burning internally.

I therefore decide that the applicants are entitled to be compensated.

The respondents seek relief by way of reduction of compensation pursuant to the provisions of Section 12 of the Malicious Injuries Act, 1981(which came into operation on 6th November, 1981, some days before the fire) for failure to take reasonable precautions to avoid the damage or loss. Such failure, amounting to negligence contributing to the crime or facilitating its commission might, on one view, be regarded as the conduct of an accessory before the fact, and capable of being established only by proof beyond reasonable doubt. However the authorities I have cited earlier and also the decision of Pringle J. in Cavendish -v- Dublin Corporation (1974) I.R. 171 support the proposition that claims under the Malicious Damage code are now to be treated as civil

proceedings and that probability alone has to be established in order to call in aid this relieving section.

I do not find evidence such as would establish this probability. On the contrary, Mr. Scouler for the applicants has given evidence which was not challenged that their insurers had caused the premises to be inspected when they went into occupation in 1981; that no difficulties arose about the insurance and no requirement was mentioned by the insurance company's agent. Accordingly I hold that no circumstances arise such as to bring into operation the provisions of Section 12 of the Malicious Injuries Act, 1981.

Thomas A. Doyle

18 June, 1984

Anthony M. Tennyson B.E., M.Cons. E.I.

Incorporated in 259 May Judgment in this matter, D.M. Leyde

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TIPPERARY (N.R.) COUNTY COUNCIL
PERSONNEL/GENERAL PURPOSES SECTION
RECEIVED
27 JAN 1982
FILE No.....

22nd January 1982. REF NO 1594.

Mr. T.P. Griffin,
County Secretary,
Tipperary (N.R.) County Council,
The Courthouse,
Nenagh,
Co.Tipperary.

re: 122/1133 - TIPPERARY CO. COUNCIL AND CORMACRUISERS LTD.:

1 GENERAL:

1. On 23rd November 1981, a fire outbreak occurred at the premises of Cormacruisers Ltd., Killaloe, Co. Clare.

1.2 On 23rd November 1981, Anthony Tennyson travelled to Killaloe and inspected the scene of the fire outbreak on 23rd and 24th November 1981. The purpose of the inspection was to determine whether the building services contributed to the outbreak of the fire. The inspections were carried out in the presence of:
Michael Dillon, chief fire officer.
Kevin Farrell, managing director, Cormacruisers Ltd.
Seamus Quinn, Garda Technical Bureau.
Other representatives from the Gardai.
Representatives from Astons, Loss Adjusters.

2. DESCRIPTION OF PREMISES:

2.1 The premises is a group of buildings located on the east quay of Lough Derg at Killaloe. The buildings serve a pleasure boating business operating on the River Shannon. They comprise workshops and offices. Adjacent to the site and overlooking it from an elevated position on the southern boundary, is a bungalow residence, the property of the Collins family.

2.2 The attached drawing no 1594 shows a 1:200 scale layout of the buildings involved with the various buildings arbitarily numbered for reference. The main building (no 1) is a timber-framed workshop with galvanised corrugated sheetsteel roof and wall cladding. Overall dimensions are 20 m by 10 m with a pitched roof 6 m high at the ridge. The workshop contained an internal canteen (no 5). North of the workshop is a 5 m wide two storey timber-framed timber-clad extension (no 6) accommodating offices, toilets and showers. There is a further 5 m wide single storey extension (no 7) accommodating reception and showrooms. Outside there is an open-fronted store (no 8), a block-built storeroom for batteries and battery charging (no 9) and a block-built store (no 10) for liquified petroleum gas cylinders.

3. EXTENT OF FIREDAMAGE:

3.1 The entire building and contents of main workshop no 1 and leanto section no 2 were burned with firedamage most severe in the eastern half of both sections. All timber framework at high level had been burned and was deeply charred. The roof structure had collapsed entirely in the eastern half of these sections. A timber stairs and timber partition at the eastern end of the workshop had been completely burned away. Occasional glass reinforced plastic rooflights had been completely burned away. A high level timber partition separating the workshop from a first floor office corridor had been burned away to the timber studding which survived. There was smoke penetration into the offices (ref no 6) off the corridor.

3.2 The canteen (no 5) was completely burned. The workshop contained two 7 m long plastic built open day cruisers on trailers which were completely burned. The eastern half of the leanto section (no 2)roof had collapsed. The doorway to machineshop no 4 was half burned away from the outside. A glass window partition had shattered. The machineshop contents were smokestained, but there was little firedamage inside. The woodworking workshop (no 3) was not affected by the fire. The outbuildings were not affected by the fire. The fire affected some windows in Collin's premises overlooking the site.

262

4. DESRIPTION OF HEATING SERVICES:

4.1 There was an overground bulk fuel oil storage tank consisting of a 12,000 gallons steel horizontal cylindrical overground tank 17 m from the eastern gable wall. This is a twin compartment tank with 150 mm gate valves at each outlet serving a 150 mm underground steel pipeline running to a diesel dispense pump on the quay west of the building. A 6 mm soft copper pipeline emerges from the ground about 3 m from the underground pipeline and runs into the building overground to serve the heating boilers. It is apparent that the copper pipeline is tapped off the 150 mm steel underground pipeline though there was no apparent means of isolating the copper pipeline.

Close to rere wall of through W.C. to new heating boilers

4.2 Inside the workshop, there is a Powrmatic freestanding unit air heater supplied by diesel oil to the 6 mm soft copper pipeline running on the ground without the benefit of any mechanical protection. There is no fire valve on the pipeline and the final fuel connection is made with a flexible plastic hose. The heater is contained within a timber enclosure. There is a mild steel flue with stainless steel cladding. In oilfired boilers and heaters, it is a basic fire precaution that the oil pipeline is mechanically protected and cannot leak fuel. It is also a fire precaution that automatic fire valves are fitted to the oil supply pipeline which will automatically cut off the oil supply in the event of a fire. Neither of these precautions were adopted at the Powrmatic heater.

4.3 At the northeastern corner of the building at groundfloor level, there is a castiron sectional boiler supplied with diesel oil through a similar soft copper pipeline similarly exposed overground without the benefit of mechanical protection. This pipeline was fitted with a springloaded fire valve which appears to have operated. The heater and the boiler are designated H on the attached drawing.

4.4 In the southeastern corner of the building, there was a heavy contamination of diesel fuel which had flowed and covered the entire concrete area of the workshop. The fuel had flowed out from the workshop down the slipway towards the River Shannon. The source of fuel leakage could not be established because of the amount of fire debris on the floor. It is probable that falling building material damaged a fuel pipeline and caused the leakage.

4.5 On the driveway est of the building, there was a petrol dispense pump supplied from an underground petroleum storage tank for which there was an access manhole in the lpg store no 10. It is unacceptable to have a petroleum tank access manhole in an enclosed building. The manhole should be located in the open air. There were no ventilating pipes apparent to ventilate the underground petroleum storage tank to atmosphere. Both of these conditions indicate bad fire prevention practice and failure to adhere to the local Fire Officer's Requirements.

4.6 The outhouse (ref no 9) for battery storage and charging was unventilated which is bad practice since battery charging rooms should always be ventilated to prevent the accumulation of flammable vapours emitted during battery storage. This condition exhibits a lack of awareness of general fire safety procedures.

5. BUILDING ELECTRICAL SERVICES:

5.1 The electrical supply to the building was an underground ESB three-phase supply.

5.2 A main electrical distribution board located in the southeastern corner of the building is designated F8 on the attached drawing. The distribution board was originally wallmounted consisting of on-site assembled individual fuseboards and distribution boards. The individual units had fallen from the wall and were considerably firedamaged.

5.3 The incoming ESB supply was an underground three-core paper insulated steel tape armoured cable. At the point where the cable entered the main switch, the paper insulation had been completely burned away. One of the electrical conducting cores had contacted the steel tape armouring and had caused considerable burning of the steel tape armouring. It is possible that this was an electrical fault which initiated a fire, but it is equally possible that an external fire burned away the cable insulation permitting the conducting core to contact the steel wire tape armouring before the main ESB substation fuses protecting the cable had operated. Either explanation is feasible.

5.4 The main switch was a metal-clad three-phase 63 Amp fuseswitch. The fuses were drawn and examined. The fuses had not operated and had not been interfered with.

5.5 There was a three-phase 60 Amp metal-clad submain fuseswitch containing two 63 Amp NEOZED type fuses and one HRC type fuse of unidentified rating. All fuses were intact. All connections were in order. The isolator blades were disconnected from the operating shaft which was timber.

5.6 There was a 30 Amp three-phase fuseswitch in which the fuses were in order. There was another three-phase fuseswitch of unidentified rating which was so firedamaged it could not be opened. The door was forcibly prised open and the HRC fuses inside appeared to be intact and in order.

5.7 The main fuseboard was examined in the presence of Det. Sgt. Seamus Quinn. This was a twelve-way 25 Amp DZ fuseboard. All the fuses were drawn and examined. No fuses had been interfered with. Most of the fuses had operated. All wiring terminations were in order and had been competently executed. Some of the wiring terminations had broken as a result of heat imbrittlement. The operation of the fuses in the fire is what is to be expected. Firedamaged cable insulation which causes electrical faults which lead to fuse operation. The operation of the fuses gives no clue as to whether the fire started at an electrical fault or at another source.

5.8 There were two six-way 25 Amp and one nine-way 25 Amp DZ fuseboards which were also examined. The fuses were in good condition and had not been interfered with. Terminations were in good order and were competently executed.

5.9 There was a submain electrical distribution located at the north partition wall (identified as F8 on attached drawing) consisting of three three-way and one nine-way fuseboard units. All fuses were withdrawn and found to have been in good order. Some of the fuses had operated. None of the fuses had been interfered with. All terminations within the distribution board units were competently executed.

5.10 The electrical services in the buildings consisted of fixed lighting, general service sockets and fixed motors on machinetools etc. The electrical cabling from the main fuseboard to the final circuits was PVC insulated/PVC sheathed (PVC/PVC) cable of acceptable specification. In workshop conditions, it is general practice to mechanically protect all electrical cable against mechanical and heat damage. The cabling from the main distribution board ran in 50 mm by 50 mm steel trunking along the southern wall for a

distance of approximately 10 m and in plastic trunking for a further 10 m. Thereafter, all cabling was run on the surface of the building fabric without any form of mechanical protection. Cabling support was generally haphazard and unsatisfactory. Cable jointing was also haphazard. There were many instances of loose joint boxes. Both of these features are unacceptable and possible sources of electrical faults. Cabling that is not mechanically protected can be damaged particularly in a workshop situation and faults can develop which can lead to fires particularly in a situation where there is combustible material. Where cabling is not properly supported and where it is jointed, cabling can be pulled and terminations can work loose resulting in hot joints which can initiate fires.

5.11 In general, the lighting consisted of 1.5 m single tube fluorescent lightfittings. These fittings were suspended by wire hangers from the building structure in the workshop area, but in the leanto section and in other sections, the fittings were nailed to timber battons. Whilst this practice is common in this country, it is not permitted in some wiring Codes and would not be considered good practice. Fluorescent lightfitting ballasts can overheat and can burn their way through the steel backing of the fluorescent lightfitting. If the fitting is nailed to combustible material, fires can start.

5.12 The electrical installation consisted of a number of fixed machines such as grinders, machinetools and woodworking machines. A number of motor starters were opened at random and the internal wiring examined, in particular to ensure that the machine was correctly earthed as this is a common emission. In each case, the machines had been competently wired and correctly earthed.

5.13 There were a number of socket outlets serving workbenches where handheld tools could be plugged in such as drills, soldering irons, angle grinders. The Factories (Electricity) Regulations, 1972, requires the fitting of earth leakage circuit breakers to protect this type of socket installation. The object is principley to protect workers against shocks from defective handheld tools.

There were no earth leakage circuit breakers fitted in this installation. These circuit breakers are excellent forms of protection against fire outbreaks as they will detect earth leakage in the order of 30 milliAmps. It is generally accepted that an earth leakage of 1 Amp flowing uninterrupted in the presence of combustible material, can generate sufficient heat to initiate a fire.

5.14 Over the canteen area, there was a considerable untidy nest of wires in the vicinity of the fluorescent tube. There was a similar untidy nest of wires suspended in the space over the submain distribution board on the northern partition wall.

6. PHOTOGRAPHS:

6.1 Eastern elevation seen from driveway.

6.2 Outbuildings nos 8, 9 and 10 and Collins residence behind seen from driveway.

6.3 Northern elevation.

6.4 Western elevation seen from jetty.

6.5 Looking south from corridor to first floor offices.

6.6 Same as above.

6.7 Same as above.

6.8 Electrical supplies to oilfired hotwater boiler in northeastern corner. These supplies should be mechanically protected to resist fire and the timber enclosure around the boilerhouse should be fire-resisting.

6.9 An example of extremely poor and sloppy wiring showing an untidy nest of unsupported wires in the vicinity of first floor corridor to offices no 6.

6.10 Electrical wiring which has collapsed onto the floor.

6.11 Powrmatic freestanding air heater in centre of workshop.

6.12 Door and glazed partition to machineshop no 4.

6.13 Oilfired water boiler in northeastern corner.

6.14 Wiring fallen from ceiling.

6.15 Charred roof timbers.

6.16 Inside of access door to machineshop no 4.

6.17 Close view of charring door.

6.18 Firedamaged battery on floor of leanto section no 2.

7. GENERAL COMMENTS:

7.1 It was reported that the fire was first observed by the occupants of the Collins residence who observed the fire in the early hours of the morning of 23rd November 1981. The fire was first observed through the windows overlooking the leanto section no 2. The fire was observed in the eastern end of workshop no 1 and leanto section no 2.

7.2 The firedamage inside the building was consistent with an intense fire which spread horizontally at high level through the building. All roof timbers were deeply charred and all GRP rooflights had burned through. The fire had broken through the high level partition on the northern side of the workshop and had commenced attack of a low level partition on the southern side of the leanto section no 2.

7.3 The canteen no 5 was burned from above. There were some curious burning patterns on the outside of the canteen partition which indicated fire spreading from above. A possible explanation for this was that traces of plastic lifebelts and raingear were found on the canteen roof. The plastic material may have melted and burned downwards creating the curious burning pattern.

7.4 The standard of electrical installation was mixed. The electrical equipment examined was competently installed and competently wired. There was no evidence of interference found with this equipment. The type of installation and method of installation was most unsuitable for workshop application. There were examples of poor installation practice explained above which could conceivably lead to electrical faults which could initiate fires in the presence of combustible material.

7.5 There were many instances of electrical equipment in close proximity to combustible material. The electrical wiring was not mechanically protected and was, in many instances, suspended in an untidy and haphazard manner from the timber structure of the building. Lightfittings were secured to timber battons. Electrical equipment was in use on timber workbenches. Dirty oily cleaning rags were seen on a bench and floor of leanto section no 2.

A possibility exists that an electrical fault occurred in the main ESB paper insulated cable.

7.6 The general management of the workshop seems to have paid scant regard to normal prudent fire prevention precautions particularly in relation to the enclosure and fuel supplies to the oilfired heaters. Despite the fact that the workshop was extensively damaged, it was still apparent that the standard of housekeeping and tidiness before the fire left a lot to be desired.

7.7 There was no absolutely positive indication that an electrical malfunction initiated this fire. However, there was sufficient indications of poor electrical installation practice together with poor workshop management that an electrical source of fire cannot be positively excluded.

Anthony M. Tennyson.

P.P.

Encls.