

Radcoflex Australia Pty Ltd and Another v James Lim Hwa Chin and Another
[2000] SGHC 96

Case Number : Suit 1598/1999
Decision Date : 27 May 2000
Tribunal/Court : High Court
Coram : Lee Seiu Kin JC
Counsel Name(s) : P Sivakumar & Maurice Cheong (Ella Cheong & G Mirandah) for the plaintiffs;
Anthony Lee Hwee Khiam & Boey Swee Siang (Bih Li & Lee) for the defendants
Parties : Radcoflex Australia Pty Ltd; Radcoflex Singapore Pte Ltd — James Lim Hwa Chin;
Keyser Technologies & Trading Pte Ltd

JUDGMENT:

1. The 1st Plaintiffs are a company incorporated in Australia. They manufacture bellows, flexible hoses and pipe expansion joints. The 2nd Plaintiffs are a company incorporated in Singapore and the 1st Plaintiffs are their shareholders.

2. Among other products, the 2nd Plaintiffs manufacture bellows at their Pandan Loop factory under licence from the 1st Plaintiffs. These bellows are essentially corrugated pipes which allow for expansion in long stretches of pipelines in ships. They look like cylindrical concertinas. The corrugations, or convolutions as the plaintiffs term them, are formed in 1.2mm thick stainless steel tubes of various diameters using a bellows forming machine ("the Plaintiffs' machine"). This machine holds the tube up and rolls it as it subjects it to a force exerted by a wheel on the inside of the tube. In this manner a convolution is gradually cold-formed on the tube. The process is repeated for the next convolution until the required number of convolutions is formed.

3. The 1st Defendant was employed by the 2nd Plaintiffs as a Sales Engineer sometime in mid-1998. One of the products he sold was the bellows. About a year later, on 20 June 1999, the 1st Defendant tendered a letter of resignation which is expressed to be effective on that date. After that, sometime in July 1999, he commenced employment with the 2nd Defendants as their managing director.

4. The 2nd Defendants are a private exempt company incorporated on 16 March 1990. They have an authorised and paid-up capital of \$200,000. The 1st Defendant owns 50% and his wife owns 49.99% of the company. She is a director of the company, having been appointed on 12 August 1995. On 22 July 1999 the 1st Defendant was appointed a director and the managing director of the 2nd Defendants.

5. Sometime in September 1999 the 2nd Plaintiffs learnt from their customers that the 1st Defendant had offered to sell bellows to them. As the 2nd Plaintiffs believed that only they were capable of manufacturing such bellows in Singapore, they decided to investigate. On 5 October 1999 the plaintiffs' representatives, Ian Robinson ("Robinson") and Richard Ng Chee Sheng ("Ng"), visited the 2nd Defendants' premises at No. 8 Link Road and found a number of bellows lying around. They then discovered, inside an enclosure within the factory, a machine ("the Defendants' machine") which they determined to be similar in all essential aspects to the Plaintiffs' machine. The 1st Defendant was not present at the time. The plaintiffs decided to commence legal proceedings against the defendants and took out the writ in this action on 5 November 1999.

1. The Claims and Defences

6. The 1st Plaintiffs' claim is against both defendants for infringement of copyright. The 1st Plaintiffs claim that they are the owners of the copyright in certain documents containing drawings and notes in relation to the Plaintiffs' machine. They say that these documents contain original literary and artistic works. They claim that both defendants, by copying such works on paper and by manufacturing the Defendants' machine, had reproduced those original works in two-dimensions and three-dimensions.

7. In their joint Amended Defence, the defendants put the plaintiffs to strict proof of their claim to copyright in the works. The 1st Defendant denied copying the Plaintiffs' machine or any of the plaintiffs' works. The defendants also denied that the Defendants' machine was a reproduction of such works. In the alternative, they also rely on the provision in section 69 of the Copyright Act ("the Act").

8. The 2nd Plaintiffs' claim is against the 1st Defendant. The first part of their claim is for breach of an express term in his contract of employment prohibiting the 1st Defendant from revealing any trade secrets and confidential information. The second part of the claim is for breach of an implied term in the contract of employment, viz. that he owed a duty of good faith and fidelity to the 2nd Plaintiffs. Both these claims relate to the disclosure by the 1st Defendant to the 2nd Defendants of the following information:

(i) the 1st Plaintiffs' literary and artistic works the subject matter of their claim in copyright;

(ii) the names and addresses of the 2nd Plaintiffs' customers;

(iii) the usual requirements of the 2nd Plaintiffs' customers both as to quantity and quality;

(iv) the prices charged to individual customers of the 2nd Plaintiffs.

9. The 1st Defendant denied disclosing the 1st Plaintiffs' works to the 2nd Defendants. He denied ever having possession of them. As for the information relating to the 2nd Plaintiffs' customers, viz. their names and addresses and their usual requirements, the 1st Defendant denied ever receiving or having access to such information in the course of his employment. The 1st Defendant also denied using the information on prices.

2. Claim in Copyright

10. In order to succeed in the claim in copyright, the 1st Plaintiffs have to establish that:

(i) copyright subsists in Singapore in the artistic or literary works concerned and

is owned by the 1st Plaintiffs; and

(ii) the defendants have infringed their copyright.

I shall examine in turn each of these issues, which spawn further sub-issues, in respect of each document the literary or artistic content of which the 1st Plaintiffs claim copyright over. Although failure by the plaintiffs to prove any single sub-issue would mean that the claim fails in respect of that document, I would, both for completeness and in case I am wrong on that sub-issue, make findings on every sub-issue for every document. As there are 15 separate documents and 4 sub-issues, I have summarised my findings in a Table of Findings at the end of this part of the judgment.

2.1 Subsistence and ownership of copyright

11. Section 27 of the Act sets out the conditions under which copyright may subsist in Singapore in an original literary, dramatic, musical or artistic work. Section 30 deals with ownership of copyright in such works. In the present action, the literary and artistic works concerned are claimed to be created in Australia. Section 184 of the Act provides for the application of the Act to other countries. To this end, the Copyright (International Protection) Regulations were promulgated on 10 April 1987. The relevant parts of regulation 3 are paragraphs (3) and (4), which provide as follows:

(3) Subject to these Regulations, the provisions of the Act relating to works and other subject-matter shall apply in relation to persons who, at a material time, are citizens or nationals of a country specified in the Schedule in like manner as those provisions shall apply in relation to persons who, at a material time, are citizens of Singapore.

(4) Subject to these Regulations, the provisions of the Act relating to works and other subject-matter shall apply in relation to persons who, at a material time, are resident in a country that constitutes, or forms part of, the territory of a country specified in the Schedule in like manner as those provisions shall apply in relation to persons who, at a material time, are resident in Singapore.

Australia is one of the countries specified in the Schedule. Accordingly, regulation 3(3) and 3(4) make the provisions in the Act relating to works applicable in respect of persons who are citizens, nationals or residents of Australia in like manner as those provisions apply in relation to persons who are citizens or residents of Singapore.

12. Section 27 deals with two types of works, viz. unpublished works in sub-section (1), and published works in sub-section (2). Section 24 deems a literary or artistic work to be published if, but only if, reproductions of the work or an edition of it have been supplied, whether by sale or otherwise, to the public. The plaintiffs do not allege that this has been done; therefore the works concerned are unpublished works and fall to be considered under section 27(1). That provision, and section 27(4), state as follows:

27. (1) Subject to the provisions of this Act, copyright shall subsist in an original literary, dramatic, musical or artistic work that is unpublished and of which the author -

(a) was a qualified person at the time when the work was

made; or

(b) if the making of the work extended over a period - was a qualified person for a substantial part of that period.

...

(4) In this section, "qualified person" means a citizen of Singapore or a person resident in Singapore.

Applying regulation 3, the copyright in the works would subsist in the authors of such works if they were Australian citizens, nationals or residents "at a material time". The term "at a material time" is defined in regulation 2(1) as the time when the work in question was made, or over a substantial part of the period over which it was made.

13. The plaintiffs claim that the authors of the works were employees of the 1st Plaintiffs at the time and they created the works concerned pursuant to their terms of employment. Section 30(6) provides that in such a situation, the employer shall be entitled to any copyright subsisting by virtue of Part III of the Act.

14. Therefore, the questions to be determined under this head are as follows:

(a) the identity of the authors of the literary or artistic works;

(b) whether the authors were citizens or residents of Singapore or Australia when the works were created; and

(c) whether the authors were employees of the 1st Plaintiffs at the time and had created the works pursuant to the terms of their employment.

15. Before proceeding to the first question, I set out below the documents containing the artistic and literary works over which copyright is claimed by the 1st Plaintiffs. They had exhibited various documents at the outset but eventually narrowed their copyright claim to the works contained in the following documents:

(i) ABD81-82, which contain specifications for the material and dimensions of the bellows.

(ii) ABD83, which is a table of bellows ring sizes. Bellows rings are steel rings used in the bellows forming process and are an element in the Plaintiffs' machine.

(iii) ABD84, which is a set of instructions on the preliminary set-up of the Plaintiffs' machine.

(iv) ABD85-88, which is a set of operating instructions for the Plaintiffs' machine.

(v) ABD89, which is a schematic drawing of the Plaintiffs' machine.

(vi) ABD90, which is another schematic drawing of the Plaintiffs' machine but which is supposed to show it in the course of performing a "re-rolling" function.

(vii) ABD91, which is a simple line drawing of the cross-section of a single "upper wheel", twin "lower wheels" and half of a tube with a convolution. The purpose of this drawing is apparently to show the alignment of the wheels in relation to the previous convolution in order to form the next one.

(viii) ABD92, which is also a simple line drawing showing the measurement of convolution height using an adjustable square.

(ix) ABD93, which is a simple line drawing of an element of the Plaintiffs' machine.

(x) ABD94, which is a detailed drawing of an element of the Plaintiffs' machine called the "cylinder support arm".

(xi) ABD95, which is a detailed drawing of the cross-section of an element of the Plaintiffs' machine called the "top wheel", with a part view of that element showing locations of a series of holes on the wheel.

(xii) ABD96, which is a detailed drawing of the cross-section of an element of the Plaintiffs' machine called the "wheel assembly" comprising the top wheel and twin bottom wheels.

(xiii) PSBD8, which is the perspective view of an element of the Plaintiffs' machine called the "pivot plate".

(xiv) PSBD11, which is a detailed drawing of an element of the Plaintiffs' machine, a shaft holding up the steel bellows rings, along with a cross-section of such rings.

(xv) PSBD13, which is a detailed drawing of an element of the Plaintiffs' machine, the twin lower wheels, showing the manner in which those wheels are held in position and connected to a hydraulic jack.

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2.1.1 Authors

16. I now turn to consider the evidence on authorship. Counsel for the defendants, Mr Lee, made certain concessions. In respect of ABD81-82, he conceded in his written submission that the author was one Ken Holzapfel ("Holzapfel"). As for ABD83, Mr Lee doubted that the identity of the author had been established, but did not pursue the point as he submitted that nothing turned on the document. I took this to mean that he did not dispute the plaintiffs' evidence of authorship of this document. Later, in the course of his oral submissions, Mr Lee said that he was prepared to concede that the 1st Plaintiffs owned the copyright to ABD81-82 and ABD83 because he was of the view that these documents did not affect his case. In relation to ABD94, Mr Lee said in his written submission that he was prepared to concede that the 1st Plaintiffs enjoyed copyright "as this drawing is not relevant to their case." In view of these concessions, I find that copyright subsists in the literary and artistic works in ABD81-82, ABD83 and ABD94 and that the 1st Plaintiffs owns such copyright.

17. I now turn to the contested documents. In relation to ABD81-96, the only evidence of authorship is paragraph 6 of Robinson's affidavit evidence-in-chief which states as follows:

The 1st Plaintiffs' work was created in Australia sometime on or about 9th April 1991 and was completed in Singapore on 30th July 1993. The 3 authors of the work were Mr. Ray Lind, Mr. Ken Holzapfel and myself, all employees of the 1st Plaintiffs at that time. By virtue of the copyright laws of Australia, the copyright in the 1st Plaintiffs' work belongs to the 1st Plaintiffs. A copy of the Plaintiffs' work comprising the drawing, specifications, operating instructions and standard bellows dimension are collectively annexed hereto as exhibit '**IRR-3**'.

Exhibit 'IRR-3' comprises the documents ABD81-96 (and two other documents which the plaintiffs did not proceed on). It is not clear from this paragraph alone whether it is alleged (i) that the 3 persons were joint authors of all the documents in ABD81-96; or (ii) that one or more of them was involved in each of the documents. An inspection of some of the documents would support the second interpretation. For instance, ABD83 appears to be a memorandum from the Manufacturing Branch of the Energy Engineering Division addressed to Holzapfel. The logical inference would be that Holzapfel could not be a joint author of this document. And ABD81-82 appear to be produced by Holzapfel because they have his initials on them. Finally, ABD95 is prima facie Lind's because his name is recorded in the title block as the person who drew it. From this, and from the evidence that Robinson gave in cross-examination which I will set out below, I conclude that the second interpretation is the correct one.

18. In cross-examination, Robinson said that he was the author of ABD94. As for the rest, although he had stated in his affidavit that ABD81-96 were authored by the 3 of them, when asked in cross-examination who prepared ABD 84, he said that he presumed it was Holzapfel. When questioned on ABD85-88, he said that he believed it was Holzapfel, but he was not sure. In relation to ABD 95-96, Robinson said that these were drawn by Lind, whose name is recorded in the title blocks as the person who drew them on 4 September 1991. Robinson said that Lind was an employee of the 1st Plaintiffs at the time. In view of Robinson's answers in cross-examination, I find that the plaintiffs have not proved the authorship of ABD 84 and ABD85-88. However I find that they have proved that Lind was the author of ABD95 and ABD96.

19. The evidence in respect of ABD89-93 is less straightforward. On the one hand, Robinson had made the blanket statement in paragraph 6 of his affidavit that these were created by the 3 of them, i.e. himself, Holzapfel and Lind. As I had reasoned above, I interpret this to mean that one or more of them authored each of the documents. Unfortunately Mr Lee did not attempt to clarify the exact nature of the authorship of these particular documents in cross-examination. Since this must be taken to be acceptance of Robinson's evidence on these particular documents, I find that the plaintiffs have proved that each of the documents in ABD89-93 was authored by either Robinson, Holzapfel or Lind, or any combination of them jointly.

20. There are 3 further documents, viz. PSBD8, PSBD11 and PSBD13. When asked whether there was any evidence of their authorship, counsel for the plaintiffs, Mr Sivakumar, referred to paragraphs 22 to 25 of Robinson's supplementary affidavit. But after it was pointed out to him that those paragraphs did not contain any such evidence, Mr Sivakumar conceded that there was prima facie no evidence of the authors of PSBD8 and PSBD11. As the burden of proof in this respect rests on the plaintiffs, I find that the authorship of PSBD8 and PSBD11 have not been proved.

21. In relation to PSBD13, Mr Sivakumar pointed out that although there was no oral evidence of authorship, Lind's signature appears on it along with the date, 14 October 1991. Presumably he is relying on the presumption in section 131(1) of the Act which provides as follows:

Where a name purporting to be that of the author of a literary, dramatic, musical or artistic work appeared on copies of the work as published or a name purporting to be that of the author of an artistic work appeared on the work when it was made, the person whose name so appeared, if it was his true name or a name by which he was commonly known, shall, in an action brought by virtue of this Part, be presumed, unless the contrary is established, to be the author of the work and to have made the work in circumstances to which section 30 (4), (5) and (6) does not apply.

As PSBD13 is an unpublished artistic work, the criterion is whether the "name purporting to be that of the author of an artistic work appeared on the work when it was made". The signature on PSBD13 does not appear in a formal title block in a box headed by the words "Drawn by". It appears at the bottom right corner of the document encircled in a wavy line under the words "BOTTOM FORMING ASSEMBLY" with a date. There is the question whether the name appeared on PSBD13 when it was made. There is no evidence that this was the case. Therefore the presumption cannot be invoked.

22. Even if the presumption can be invoked, there is the question as to its scope. The words in section 131(1) underlined above provide for a two-fold presumption, i.e. (i) the person named is presumed to be the author of the work; and (ii) he made the work in circumstances in which section 30 (4), (5) and (6) do not apply. Section 30(6) provides that where a literary, dramatic or artistic work (to which section 30(4) and (5) do not apply) is made by the author in pursuance to the terms of his employment, his employer shall be entitled to any copyright subsisting under Part III of the Act. This is the provision on which the 1st Plaintiffs rely in their claim of ownership of the copyright in PSBD13. The presumption of authorship in section 131(1) is invoked only along with the presumption that the author did not create the work pursuant to the terms of his employment. It would follow that this presumption of ownership is not available where the author's employer is the person who is bringing the action as copyright owner.

23. I next consider whether, even without the benefit of the presumption, there is evidence that Lind is the author of PSBD13. As stated above, if his name appeared in a title box headed "drawn by", I might infer that he is the author because there is such an assertion on the face of the document. However in the present circumstance, there can be a number of reasons why his signature appears other than because he was the maker. Furthermore, this document was not in the agreed bundle. This means that the defendants have not made an admission as to its authenticity. Therefore it was for the plaintiffs to prove it by calling the maker or some person who can attest to the fact that Lind made it. I should think that, at the very least, there must be a positive statement from someone that Lind was the maker instead of relying on the fact that his signature appears on the document. That is a simple assertion and the fact that it cannot be made could mean that the truth is something else. While there can be a wholly innocent explanation for this omission, it would be unfair to the defendants to hold as proved a fact that none of the plaintiffs' witnesses have asserted. Therefore I find that the plaintiffs have not proved the authorship of PSBD13.

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2.1.2 Citizenship or residency

24. Beyond proving the identity of the authors, the plaintiffs must also prove that they were citizens of or resident in Australia at the time the documents were made, or possessed that status for a substantial part of any period over which the works were created: see section 27(1) and 27(4) of the Act, read with regulation 3(3) and 3(4).

25. Some of the documents are dated and others are not. ABD81-82 are dated November 1991. ABD83 is dated 31 May 1982. ABD84-93 are not dated. However Robinson had stated in paragraph 6 of his affidavit that these were made between 9 April 1991 and 30 July 1993 and I accept that evidence. ABD94 is dated 16 March 1993. ABD95 and ABD96 are both dated 4 September 1991. I accept these to be the dates of creation of those documents and find accordingly. PSBD8 and PSBD11 have no date and there is no evidence of when they were made. The date "4 September 1991" appears on PSBD13. But as there is no evidence that this is the date of creation, I find that there is no evidence of that date.

26. Where there is a date specified in respect of a particular document (as opposed to the period April 1991 to July 1993), the plaintiffs should give evidence as to whether the document was created on that date or over a particular period. They have not done so, but I am prepared to hold that the documents concerned were made on the dates specified because the nature of the documents do not suggest that any of them would require more than a day to be made. However for the documents for which the plaintiffs could only say that they were made between April and July 1993, I can only hold that they were created over that period.

27. Next the plaintiffs have to show that the authors were citizens of or resident in Australia on those dates or over a substantial part of that period. There is no direct evidence of the citizenship or residency status of the 3 authors, namely Robinson, Holzapfel and Lind. I have carefully perused the affidavits of the plaintiffs' witnesses and their answers in cross-examination and am unable to find any such evidence. Mr Lee had studiously avoided asking such questions in his cross-examination, as was his right so to do. Mr Sivakumar concedes that there is no direct evidence but submits that there is circumstantial evidence of their residency status. This comes from evidence given by Robinson that all 3 of them were employed by the 1st Plaintiffs and their business cards exhibited in ABD99 had Australian addresses. He argued that as the defendants did not produce any evidence to the contrary, on a balance of probability, they were residents of Australia at the time. Mr Lee said that residence in Australia was not necessarily the only conclusion to be drawn from the fact of their employment by the 1st Plaintiffs. He pointed out that the 1st Plaintiffs had offices overseas and, like Robinson who was posted to Singapore, Lind and Holzapfel could have been posted and resident overseas at the time the works were made.

28. In my view, what is relevant is residency status at the time of creation of the documents. While one can say that the business cards show that they were based in Australia at one time, there is no evidence that they were based there at the time of creation of the documents. Take Robinson for example. His business card shows an Australian office address, telephone and fax numbers. But he also said that he had obtained a Singapore employment pass 7 or 8 years ago. He had exhibited a business card showing an Australian address and yet he was resident in Singapore for a number of years. Section 3(3) of the Evidence Act provides as follows:

A fact is said to be "proved" when, after considering the matters before it, the court either believes it to exist or considers its existence so probable that a prudent man ought, under the circumstances of the particular case, to act upon the supposition that it exists.

In the present case, the same possibility cannot be ruled out in respect of Holzapfel and Lind in the absence of evidence to that effect. Therefore I cannot consider the residency status at the material time of Lind and Holzapfel to be so probable under the circumstances as would cause a prudent man to act on the supposition that it is true. Accordingly I find that the plaintiffs have not proved that Lind and Holzapfel were residents of Australia at the material time.

29. Robinson, who gave oral evidence in court, did not disclose his citizenship status. He even quoted his passport number but did not state the country of issue. Had he simply stated that it was an Australian passport, I would have been able to infer that he was an Australian citizen, although there is still the question of whether he possessed that status at the time he made the documents concerned. Bluntly put, there is simply no evidence that he was an Australian citizen or was resident in Australia at the material time. Although it would appear that he had been resident in Singapore for the last 7 or 8 years, there is no evidence that he created the documents in question while he was resident here. Therefore I find that the plaintiffs have not proved that Robinson was resident in Australia or Singapore at the time he created the documents in question.

30. If I were wrong about Robinson, and ought to find that he was resident either in Australia or Singapore at the time of creation of the documents in question, it would then be necessary to consider documents ABD89-93 in respect of which I have found that the plaintiffs have proved that each of these 5 documents was made by Robinson, Holzapfel or Lind individually or in any combination. The question is whether it can be said that the plaintiffs have proved, in respect of these documents, that the author or authors were citizens or residents of Australia. In respect of each document there is the possibility that Robinson was not involved in its creation. Therefore the plaintiffs cannot be taken as having proved that the author, or one of the authors, of each document was a resident of Australia or Singapore at the time of its creation. The burden of proving authorship of a document over which copyright is claimed rests on the plaintiffs and it cannot be said that they have discharged this burden by proving that Robinson could be its author.

31. Perhaps the lack of evidence of citizenship or residency may be attributable to the position taken by Mr Sivakumar as to the law. In paragraph 3.14 of his written closing submission, he argued as follows:

The Defendants have further contended that there has been no evidence that the 3 authors of the 1st Plaintiffs' Work were citizens or residents of Australia at the time the work was created. This is not necessary as by virtue of Regulation 3(5) of the Copyright (International Protection) Regulations, (PBA-28) the Singapore Copyright Act shall apply to bodies incorporated under the laws of Australia in the like manner as to bodies incorporated under the laws of Singapore and by virtue of Section 30(6) of the Copyright Act (PBA-1) all works done in the course of employment by an employee belongs to the employer so that in the present case the connecting factor is whether the 1st Plaintiffs were a body corporate incorporated under the laws of Australia and were the employers of the authors. This the 1st Plaintiffs have shown.

32. With respect, I do not agree with Mr Sivakumar that it was not necessary for the plaintiffs to prove that the 3 authors were citizens or residents of Australia. Section 30(6) provides as follows (emphasis added):

Where a literary ... or artistic work to which subsections (4) and (5) do not apply, ... is made by the author in pursuance of the terms of his employment by another person under a contract of service or apprenticeship, that other person shall be entitled to any copyright subsisting in the work by virtue of this Part.

Counsel were unable to produce any authority on the interpretation of this provision. Nevertheless, in my view it is clear enough. The words of the provision underlined above refer to copyright subsisting by virtue of Part III of the Act. Section 30(6) itself does not establish any copyright. It provides that in the situation where subsections (4) and (5) do not apply to the work concerned, the employer shall

be entitled to any copyright that subsists by virtue of Part III of the Act. Indeed the section heading to section 30 states "ownership of copyright in original works." This suggests that it relates to ownership and not to subsistence of copyright. The other substantive subsections of section 30, namely (2), (4) and (5), also refer to "any copyright subsisting in the work by virtue of this Part".

33. In the present case copyright must first of all subsist by virtue of section 27(1). If the author had made the work in pursuance of the terms of his employment by the 1st Plaintiffs under a contract of service or apprenticeship, then the 1st Plaintiffs would, by operation of section 30(6), be entitled to such copyright. Therefore it is still necessary to establish that copyright subsists in the work pursuant to section 27(1). One necessary element is citizenship or residency at the time or a substantial part of the period of the making of the literary or artistic work.

34. Mr Sivakumar had invoked regulation 3(5). I find that this has no relevance in question before me on the operation of section 30(6) and it is incumbent upon me to explain the scope of this regulation. Regulation 3(5) provides as follows:

Subject to these Regulations, the Act shall apply in relation to bodies incorporated under the law of a country that constitutes, or forms part of, the territory of a country specified in the Schedule in like manner as those provisions shall apply in relation to bodies incorporated under the law of Singapore.

What this provision does is to treat corporations in the countries specified in the Schedule as if they were incorporated in Singapore for the purposes of the Act. Hence, in Part IV of the Act, a body incorporated in Australia would enjoy the same treatment as one incorporated in Singapore in relation to copyright in sound recordings, cinematograph films and the other matters provided for in that Part.

35. However regulation 3(5) has no relevance to the present case. Section 27 and 30 are in Part III of the Act which is concerned only with authors who are natural persons. This is evident from section 27 where, for copyright to subsist, the author has to be a "qualified person". That term is defined in section 27(4) to mean a citizen of Singapore or a person resident in Singapore. The term "citizen of Singapore" is not defined in the Act but is defined in the Interpretation Act as "any person who, under the provisions of the Constitution, has the status of a citizen of Singapore". Those provisions of the Constitution relate only to natural persons. As for the term "person resident in Singapore", section 8 of the Act provides that such term shall include a person who does so by virtue of a valid pass under the Immigration Act. Furthermore, section 28 provides that the duration of copyright subsisting by virtue of Part III of the Act shall continue to subsist until the expiration of 50 years after the death of the author. For these reasons, the term "author" in Part III refers only to a natural person. This may be contrasted with Part IV where the term "qualified person" is defined in section 81 as (a) a citizen of or an individual resident in Singapore or (b) a body corporate incorporated under any written law in Singapore.

36. In the result, I find that the plaintiffs have not proved that the authors of the works were citizens or residents of Australia at the material time.

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2.1.3 Whether employees of 1st Plaintiffs

37. Robinson had said in paragraph 7 of his affidavit that he, Holzapfel and Lind were employees of the 1st Plaintiffs for, respectively, more than 35 years, 10 years and 4 years. He also exhibited

business cards of the 3 of them under the 1st Plaintiffs' name. Mr Lee disputed that this constituted evidence that Holzapfel and Lind were employed at the material time but was not in a position to give evidence to the contrary. However the defendants had in their Defence, not admitted the plaintiffs' ownership to the copyright and had put them to strict proof thereof.

38. In my view, it is necessary for the plaintiffs to produce documentary evidence of employment, such as the employment contract or letter of appointment. A mere assertion by Robinson that Holzapfel and Lind were employees would not suffice to satisfy the burden of proof in the present case. This is because section 30(6) provides that for the employer to be entitled to copyright in works created by an employee, that employee must have made the work in pursuance of the terms of his employment under a contract of service or apprenticeship. There is a difference between a contract of service and a contract for service and it would be necessary for the plaintiffs to produce evidence of the nature of such employment. It is not for Robinson to determine whether their employment contract was a contract of service or for service. Further, as this fact is not admitted, the production of such documents would enable the defendants to cross-examine the witnesses on this issue or to point to anything in the documents that may be in their favour. Accordingly I find that the plaintiffs have not satisfied the burden on them to prove this fact.

2.2 Infringement

39. On the assumption that the 1st Plaintiffs own the copyright to the literary and artistic works in the documents in question, I now turn to the question of infringement. The 1st Plaintiffs alleged that the defendants infringed their copyright in their works by reproducing them in a material form in the following 3 ways:

- (a) by making unauthorised photocopies of ABD81-96;
- (b) by making unauthorised sketch copies of PSBD8, PSBD11 and PSBD13; and
- (c) by making the Defendants' machine without authorisation.

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2.2.1 Photocopies

40. The 1st Defendant denied making photocopies of ABD81-96. The plaintiffs were unable to produce any witness who could say that he had seen the 1st Defendant make the copies or in possession of such copies. All that Mr Sivakumar could do was to point to the affidavit evidence-in-chief of one Victor Goh ("Goh"), paragraph 7 of which goes as follows:

[The 1st Defendant] confided in me by telling me that he had secretly returned to the 2nd Plaintiffs' office after working hours to photocopy documents in order to design his machine and to secure customers. He said that he was collecting information progressively.

Even if this is evidence of an admission, it fails to identify the documents that the 1st Defendant had admitted photocopying. In cross-examination Goh said that the 1st Defendant did not tell him what

documents he had photocopied. He also said that when he was at the 2nd Defendants' factory, he did not see anything that could be construed as the property of the 2nd Plaintiffs.

41. To prove infringement by photocopying, the plaintiffs must prove that the 1st Defendant had made the photocopies of the documents over which copyright is claimed. Clearly there is no evidence of this before me and I must find that the plaintiffs have not proved that the defendants had photocopied ABD81-96.

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2.2.2 Sketch copies

42. The plaintiffs claim that the defendants had made sketches that are unauthorised copies of:

- (i) PSBD8 in the defendants' document ABD366-367
- (ii) PSBD11 in the defendants' document ABD375;
- (iii) PSBD11 in the defendants' document ABD376; and
- (iv) PSBD13 in the defendants' document ABD381.

I shall examine each pair of drawings in turn.

2.2.2.1 PSBD8 and ABD366-367

43. The plaintiffs' document, PSBD13, is a sketch of an element of the Plaintiffs' machine, a triangular steel plate called the pivot plate. Its function is to transfer the direction and magnitude of a force from a hydraulic jack onto the top wheel which presses on the tube to form the convolution. The sketch itself is a line representation of the side view of the pivot plate, showing essentially a triangle with rounded and bulging corners and holes at each of the 3 corners for the pins. The distances between the 3 holes are 250, 500 and 574mm. The sketch shows 2 of the 3 angles of the triangle as 34.5° and 59.5° and from this the third angle may be computed to be 86°.

44. The defendants' ABD376 is a sketch of the corresponding pivot plate in the Defendants' machine. It is also essentially a triangle with 3 holes at the corners. Two of the holes are also 250mm apart. However the differences are as follows:

- (i) the 3 corners appear different, in particular there is no bulge in the defendants' drawing;
- (ii) only one angle of the defendants' triangle is given, making the other 2 indeterminate. However this angle, 46°, corresponds to the corner in the plaintiffs' sketch which is marked as 59.5°.

Visually, because of these 2 differences, the triangles look different. I find that there is no substantial reproduction in ABD366-367 of the drawing in PBD8.

2.2.2.2 PSBD11 and ABD375

45. The plaintiffs' drawing, PSBD11, is a side view cross-section of another element of the Plaintiffs' machine, a device used to hold the bellows rings. It also contains a cross-section of the bellows rings. The defendants' ABD375 is a drawing of the corresponding device in the Defendants' machine. However it is a top view of the device. In terms of appearance, the 2 drawings are dissimilar, mainly because one is a side view cross-section and the other is a view from the top. I find that there is no substantial reproduction in ABD375 of PSBD11.

2.2.2.3 PSBD11 and ABD376

46. The defendants' document, ABD376, is a rough sketch of the same bellows rings holding device in the Defendants' machine. This time it is a side view cross-section as in the plaintiffs' PSBD11. The similarities are as follows:

- (i) both feature a 90mm square bar, the plaintiffs' is 354mm long and the defendants' is 360mm;
- (ii) both feature a 50mm diameter shaft at the end of the 90mm square bar, of length 270mm.

47. The dissimilarities are as follows:

- (i) The defendants' drawing features two triangles that are hatched adjoining the entire length of the 90mm square bar. There is no such feature in the plaintiffs' drawing;
- (ii) The defendants' drawing comprises entirely of the 90mm square bar, the 50mm shaft, the 2 hatched triangles and a 25mm-thick plate at one end. The plaintiffs' drawing has the 90mm square bar and the 50mm shaft, no triangles and the plate at the end is 20mm thick. But it also has details of other parts of the device, including the important part which shows how the bellows rings sit on it. This comprises a pair of 40mm shafts with bearings for the rings to roll over. And the cross-section of the bellows rings are drawn on the plaintiffs' drawing.

48. In view of the simplicity of the defendants' drawing, the amount of details in the plaintiffs' drawing which is left out in the defendants' drawing, and the fact that the 2 triangles in the defendants' drawing are striking features which do not appear in the plaintiffs' drawing, I find that there is no substantial reproduction in ABD376 of PSBD11.

2.2.2.4 PSBD13 and ABD381

49. The plaintiffs' drawing, PSBD13 is a drawing of an element of the Plaintiffs' machine, the bottom wheel assembly. It shows how the pair of bottom wheels is mounted on a shaft which in turn is mounted on a series of steel plates welded in a box-shaped assembly. This assembly is bolted to the

shaft of a hydraulic cylinder. The defendants' drawing, ABD381, comprises 2 parts and the similarity only concerns the drawing on the left. That is a drawing of the corresponding element of the Defendants' machine. It also shows the pair of bottom wheels mounted on a shaft which is in turn mounted on a box-like plate assembly.

50. The following are the points of similarity:

- (i) the general layout are similar, although some dimensions differ;
- (ii) both pairs of wheels are 25mm thick;
- (iii) both wheel shafts have substantially the same thickness (plaintiffs' is 66mm and defendants' is 65mm);
- (iv) plates used in both box-assemblies are 40mm thick;
- (v) the internal widths of both box assemblies are substantially the same (plaintiffs' is 156mm and defendants' is 158mm);
- (vi) the distance between the shaft and the base of the box-assembly is 230mm in both drawings.

51. The following are the points of difference:

- (i) the diameter of the plaintiffs' wheels is 250mm whereas the defendants' is 300mm;
- (ii) the gap between the wheels is 37mm in the plaintiffs' drawing and 30mm in the defendants';
- (iii) the lengths of the wheel shafts are different, 360mm in the plaintiffs' and about 250mm in the defendants';
- (iv) the defendants' drawing features slide bearings which are not found in the plaintiffs', and various other details of bushes are different;
- (v) the defendants' drawing features two bolts connecting the 2 wheels which is not featured in the plaintiffs' drawing;
- (vi) The plaintiffs' drawing shows a bolt and nut connecting the assembly to the hydraulic cylinder. No such features are in the defendants' drawing.

52. Whether one drawing amounts to a substantial reproduction of another does not depend solely on a comparison of the number of similarities and differences. It is the quality of what is copied that matters. In *Ladbroke (Football) Ltd v William Hill (Football) Ltd* [1964] WLR 273, Lord Reid said at p. 276:

Copyright gives the exclusive right to do certain things including "reproducing the work in any material form" ... and reproduction includes reproduction of a substantial part of the work ... Broadly, a reproduction means copying, and does not include cases where an author or compiler produces a substantially similar result by independent work without copying. And, if he does copy, the question

whether he has copied a substantial part depends much more on the quality than on the quantity of what he had taken.

From a cursory glance of the 2 drawings one could easily conclude that they refer to the same contraption and it is only in a detailed study that the differences are observed. This is because the striking feature of the drawings are the twin wheels, the wheel-shaft and the box-like assembly. On balance, I would find that the drawing in ABD381 is of a degree of similarity to PSBD13 as would make it a substantial reproduction thereof if ABD381 had been copied from PSBD13.

53. The remaining question is whether it was copied from PSBD13. There is no allegation that the 1st Defendant had access to PSBD13. Indeed there is no evidence as to where PSBD13 was kept within the 2nd Plaintiffs' premises, if at all it was kept there. The only mention of this document is in paragraph 25 of Robinson's supplementary affidavit where he said:

[ABD381] is a copy of the Defendants' drawing and I identify it as a Bottom Wheel Assembly. The Plaintiffs' drawing of the same can be found at [PSBD13]. The function of the Bottom Wheel is to form convolutions on the bellow tube. I note that the height measuring from ...

As was the case with regard to the issue of authorship, there was no evidence on the role that PSBD13 played in the making of the ABD381. The 1st Defendant denied having seen PSBD13 before. Even if the 1st Defendant had to copy the drawing in ABD381 from somewhere, as I shall find below, he could have done so from looking at the Plaintiffs' machine or from some other document. As there is no causal link between the 2 documents, I cannot find ABD381 to be a reproduction of PSBD13.

-

2.2.3 Defendants' machine

54. The plaintiffs claim that the Defendants' machine is a reproduction in 3-dimensions of their artistic works in the following documents: ABD89, 95 and 96, and PSBD8, 11 and 13. Before embarking on a consideration of those documents in relation to the Defendants' machine, it is necessary to set out the facts relating to its construction.

2.2.3.1 Construction of Defendants' machine

55. The 1st Defendant claimed that he designed and built the Defendants' machine with the help of one Ong Beng Sim ("Ong"), the foreman of the 2nd Defendants. Ong gave evidence that he had worked for more than 30 years in the mechanical engineering industry. He was a machinist for more than 10 years and had extensive experience as a machine fitter and in pipe fabrication and welding work. The 1st Defendant said in cross-examination that the machine at the 2nd Plaintiffs' premises was located at a place where all persons working there, whether on the shop floor or at the office upstairs (where he was) had to pass it in order to go to the toilet. To that extent he had access to the machine. But he said that he was not shown, nor had he seen, any of the drawings of the Plaintiffs' machine. He said that as a sales engineer he was not involved in the manufacture of the bellows. He gave evidence of his background: he obtained a technician's certificate from the Industrial Training Board in 1979. In 1983 he attended courses in Tool and Die Making at the

Vocational and Industrial Training Board. He had worked as a machinist in various companies. Thereafter he worked at various marine companies before enrolling at the Ngee Ann Polytechnic in 1992 for a course in Electrical Plant Maintenance. He said that as a result of his training and work experience, he was qualified to design and build machine tools.

56. Robinson gave evidence that he held a Certificate of Mechanical Engineering III from Sydney Technical College. He had experience in the field of flexible technology and in the manufacture of flexible metal expansion joints. He said that Holzapfel held a civil engineering degree and was employed by the 1st Plaintiffs as a Technical Applications Engineer for 10 years. Lind had a degree in Mechanical Engineering and was the 1st Plaintiffs' design engineer for 4 years. The 3 of them had designed and built the Plaintiffs' machine, expending approximately 1,500 hours and relying on their skill, experience and extensive research on bellows form and design criteria.

57. Having heard the oral evidence and having seen both the Plaintiffs' machine and the Defendants' machine, I find that neither the 1st Defendant nor Ong possessed the technical expertise to design and build a machine of this nature. I am satisfied that the Plaintiffs' machine merits the 1,500 hours that Robinson claimed were spent by the 3 of them in designing and building it. Robinson said that as an engineer who had been intimately involved in this area, it was apparent from the defendants' drawings and photographs of their machine that they had taken all the essential elements of the Plaintiffs' machine. I accept his evidence because from the 1st Defendants' answers in cross-examination, it was clear that he had sized the structural elements of the Defendants' machine based, not on his own calculations, but on the corresponding elements in the Plaintiffs' machine. I am satisfied that the 1st Defendant was not capable of building his machine without considerable information coming from the plaintiffs, whether by way of documents or measurements of the Plaintiffs' machine.

58. Obviously the plaintiffs cannot claim infringement of copyright over documents not proved before me. The plaintiffs' claim is based purely on the documents ABD89, 95 and 96, and PSBD8, 11 and 13. Mr Sivakumar submits that the 1st Defendant had access to these documents. I had dealt earlier with the documents PSBD8, 11 and 13 and have found that there was no evidence that the 1st Defendant had access to them nor even as to where they were kept. The plaintiffs' evidence only shows that he had access to ABD81-96. I accept the evidence in this regard and accordingly find that the 1st Defendant had access to ABD89, 95 and 96, but not to PSBD8, 11 and 13.

2.2.3.2 Was Plaintiffs' machine based on ABD89, 95 and 96?

59. I now turn to consider the nature of the 3 documents, ABD89, 95 and 96. ABD89 is a "general arrangement" drawing of the Plaintiffs' machine. It is not to scale and does not contain any dimensions. It essentially shows the locations of the various elements of the machine. Robinson said that ABD89 was part of the operating instructions for a re-rolling process and not a drawing based on which the Plaintiffs' machine was built. His evidence in cross-examination was as follows:

Q No, I'm referring to the two drawings, the two sketches, [ABD] 89 and 90.

A 89 and 90 is part of the machine of the Radcoflex RF-2 machine.

Q Are these blue print drawings?

A No.

Q They don't have dimensions in them?

A Obviously, no.

Q The person who drew these two sketches, the name is not there?

A No. It's a general arrangement drawing.

Q So you cannot build a machine based on these two sketches?

A No.

Q Therefore, the RF-2 machine could not have been built based on these two sketches, it follows.

A The machine was not built with those two drawings. If you refer to a part of the drawings---

Q Thank you.

A ----you will see that the machine was built from engineering drawings.

Accordingly I find that the Plaintiffs' machine was not built based on ABD89. I should state that ABD90 contains a drawing similar in all respects save in one detail. The plaintiffs do not appear to base their case on this document, but in any event all the considerations for ABD89 apply in relation to ABD90.

60. As for ABD95, it is a drawing entitled "Top Wheel" and shows the cross-section of a wheel 420mm in diameter and 25mm thick. It has a 60mm diameter hole in the centre and 8 smaller holes at a radius of 130mm from the centre. Robinson could not say for sure that the corresponding element on the Plaintiffs' machine, i.e. the top wheel, had the same dimensions. However he believed that it did. Robinson also was not able to assert that the top wheel of the Plaintiffs' machine was based on ABD95. Therefore I find that the plaintiffs have not proved that the top wheel on the Plaintiffs' machine was built based on that document.

61. ABD96 is a drawing entitled "Wheel Assembly" and shows the cross-section of the top wheel mounted on a shaft and the 2 bottom wheels mounted on another shaft. The components of this assembly are set out in a table in the document but the dimensions of the top and bottom wheels are not given. Robinson explained that this was an assembly drawing, i.e. one which showed how each part fitted in the assembly. The detailed dimensions of each part would be specified in other drawings. He said that he presumed that this drawing related to the Plaintiffs' machine but could not be sure because there was no indication as such on the document. He also agreed with Mr Lee that it was not possible to construct a wheel assembly based on ABD96. As Robinson could not state with certainty that the wheel assembly on the Plaintiffs' machine is based on ABD96, I also cannot find that the plaintiffs have proved this.

2.2.3.3 The law on indirect copying

62. By virtue of section 15(3) of the Act, an artistic work in 2-dimensions is deemed to be reproduced if a version of it is produced in a 3-dimensional form (subject to section 69, which is considered later in this judgment). There is no evidence that the plaintiffs' drawings were used to build the Defendants' machine. But I have found that the 1st Defendant had used information either from the plaintiffs' drawings of their machine or directly obtained from the Plaintiffs' machine. The latter situation is described as indirect copying of the drawing and I turn to examine the law in this respect.

63. Where a 3-dimensional object, "A", is copied from another 3-dimensional object which is a copy of a drawing, "A" is a reproduction of that drawing for the purposes of copyright infringement. In *King Features Syndicate Inc v O. and M. Kleeman Ltd* [1941] AC 417 the plaintiffs sued for infringement of copyright in respect of the comic strip figure "Popeye, the Sailor". The plaintiffs had licensed third parties to reproduce toys and figurines based on the "Popeye" character. The defendants had in fact negotiated with the plaintiffs for such a licence but the parties could not agree to the terms. Without authorisation of the plaintiffs, the defendants bought toys and brooches resembling the character for sale and the plaintiffs commenced the action. Because the number of drawings of "Popeye" was large, the plaintiffs restricted themselves to proving ownership of copyright in respect of only 55 drawings. The licensees' figures were made based on one or other of the drawings. The defendants' brooches were copied not from the drawings but from the licensees' figures. The defendants submitted that as their brooches were copied from the licensees' figures and not from the plaintiffs drawings, they were not reproductions of the drawings. The ratio of the decision of the House of Lords is accurately summarised in the following passage from the headnote:

Held

, that the defendants' dolls and brooches were reproductions in a material form of the plaintiffs' original artistic work and were not the less so because they were copied, not directly from any sketch of the plaintiffs, but from a reproduction in material form derived directly or indirectly from the original work
...

64. The "Popeye" case involved drawings that had eye appeal and were of a non-functional nature. The same principle applies in respect of drawings that are purely functional in nature. *L.B. (Plastics) Ltd v Swish Products Ltd* [1979] RPC 551 concerns plastic components of knock-down drawers. The plaintiffs produced such components and were the owners of the copyright in the drawings of such components. The trial court found that the defendants produced their components by using a sample of the plaintiffs' components as a model. The House of Lords affirmed the court's finding that such indirect copying amounted to production of a version of the drawings.

65. The House of Lords re-affirmed the principle of indirect copying in *British Leyland Motor Corp Ltd v Armstrong Patents Co Ltd* [1986] 2 WLR 400. In that case, the defendants made exhaust pipes by copying the shape and dimensions of pipes made by the plaintiffs, a process known as "reverse engineering". The plaintiffs brought an action for infringement of copyright in their drawings of the exhaust pipes. The House of Lords unanimously held that on the basis of the line of authorities leading up to the *Swish* case, indirect copying of a drawing relating purely to a functional design constitutes infringement of copyright in the drawing. Lord Templeman said (at p.427):

The decision of this House in *L.B. (Plastics) Ltd. v. Swish Products Ltd.* [1979] R.P.C. 551 shows clearly that as the law now stands the first argument put forward by Armstrong namely that copyright does not apply to prevent the indirect copying of drawings of functional articles cannot be sustained.

66. In all the 3 cases discussed above, the 3-dimensional objects which were copied by the

defendants were themselves copies of drawings over which copyright was established. In the present case, the plaintiffs have not proved that the drawings over which copyright is claimed were the ones used to construct the Plaintiffs' machine. Indeed Robinson had said that their machine could not have been constructed from ABD89. Although there are similarities between the Defendants' machine and the drawings in ABD89, 95 and 96, the question is whether, if the Defendants' machine had been directly copied from the Plaintiffs' machine, it would amount to indirect copying of those drawings as they were not used to construct the Plaintiffs' machine. For my part, the answer is clear. If a 3-dimensional object was not made based on a drawing, a second 3-dimensional object which was copied directly from the first cannot be an indirect copy of the drawing notwithstanding any similarity between that second object and the drawing. It would be a travesty of logic if it were otherwise.

67. Quite apart from logic, to hold otherwise would result in an unjustified extension of the principle of indirect copying. The law of copyright is intended to protect the skill and labour of the maker of the artistic work and not that of the person who undertook the engineering design constituting the technical basis for the artistic work. In the *British Leyland* case, Lord Templeman said (at p.419):

BL's engineering drawings are artistic works but they are only original in so far as they represent the skill and labour of the draughtsman. The shape, configuration, dimensions and exact measurements of the exhaust pipe were contributed by the skill and labour of the design engineer not by the draughtsman. By directly copying the exhaust pipe Armstrong make use of the work of the design engineer but do not make use of the work of the author of the drawing. BL's exhaust pipe could have been made without BL's drawing. Armstrong's exhaust pipe was made without BL's drawing. BL's object in these proceedings is not to prevent reproduction of the drawing which is protected by copyright but to prevent reproduction of the exhaust pipe which is not entitled to any protection whatsoever.

68. Indeed the House of Lords wrestled with the notion that copyright could subsist in a purely functional design but concluded that such was the state of the law. As Lord Griffiths said (at p.434):

It might at one stage in the history of artistic copyright have been possible to argue that Parliament only intended copyright to extend to paintings or drawings which could fairly be described as works of fine art; indeed, when Parliament first gave the protection of copyright to artists by the Fine Arts Copyright Act 1862 (25 & 26 Vict. c. 68) I believe that it was probably so limited. But, whatever may have been the position in the past, Parliament when it enacted the Copyright Act 1956 followed the advice of the Gregory Report (Report of the Copyright Committee (1952) (Cmd. 8662)) and conferred copyright on any drawing irrespective of artistic quality and included in the definition of drawing any diagram, map, chart or plan. Thus, Parliament made clear, to my mind beyond argument, that the draughtsman is entitled to the copyright in every original mechanical drawing that he produces and if he does so in the course of his employment the copyright is that of his employer.

69. Lord Griffiths had taken a different tack from the other 4 members of the House in this decision and said that the decision in the *Swish* case upholding the principle of indirect copying should be reversed. Although the other judges did not resort to this drastic step, they nevertheless expressed their dissatisfaction with the direction that the law had taken in respect of artistic works which were simply functional designs. This is because the protection given in respect of artistic works is to the skill of the author whereas the protection sought in the case of functional design drawings is over the

work of the designer and not that of the draughtsman who put that output on paper. The remedies for this in copyright law are quite inappropriate. As Lord Bridge of Harwich said (at p.413):

But I must add that I regard the present law as highly unsatisfactory in at least two respects. First, copyright protection for functional designs, as extended to articles of functional utility manufactured in accordance with those designs, would certainly seem to be capable of abuse as a means of obtaining many of the advantages conferred by patent monopoly while circumventing the many stringent conditions and safeguards to which patent protection is subject. Secondly, whatever protection the industrial designer may need to safeguard the product of his skills against piracy, I find it difficult to suppose that a rational legislator, devising a comprehensive code ab initio for the protection of intellectual property, would deliberately include a provision for the recovery of conversion damages in respect of industrial products which infringe the protection accorded to industrial designs. In the field of fine arts substantially the entire value of a copy accrues from the work of the original artist. This is surely the rationale of the provision for conversion damages for infringements of copyright. In the field of industrial design the designer contributes only a modest fraction of the value of the product. Thus, to award conversion damages for infringing industrial copies of a protected industrial design is irrationally generous to the designer and punitive of the infringer.

70. Lord Templeman, with whom Lord Scarman agreed, expressed the same sentiments (at p.420):

An article embodying an invention which is not patented does not enjoy the 20 years restriction on use of the invention afforded by patent law. An article embodying a design which is not registrable does not attract the 15 years restriction on reproduction afforded by design copyright. An article which is not an artistic work does not attract the life plus 50 years restriction on reproduction afforded by copyright law to artistic works. But if BL are right, an article which is not patented, not registered and is not an artistic work acquires the life plus 50 years restriction on reproduction afforded by copyright to an artistic work.

71. I therefore hold that where a 3-dimensional object is copied from another 3-dimensional object, the scope of the principle of indirect copying does not extend to drawings which were not the basis of the construction of the object copied from. In the present case, even if it can be said that the Defendants' machine is substantially similar to the drawings in question, it cannot amount to a reproduction of those drawings merely because it is copied directly from the Plaintiffs' machine.

2.3 Table of Findings

72. The tabulation below summarises the findings made in relation to the claim in copyright. As the plaintiffs have not proved at least one sub-issue in respect of each document, their claim in copyright must be dismissed.

Document/ Alleged date	Alleged Author	Alleged Author proved?	Citizenship/ Residence proved?	Employ- ment proved?	Nature of repro- duction	Repro- duction proved?	Claim Proved?
ABD81-82 (11.1991)	Holzapfel	Yes Admitted	Yes Admitted	Yes Admitted	2-D	No	No
ABD83 (31.5.1982)	Robinson &/or Lind	Yes Admitted	Yes Admitted	Yes Admitted	2-D	No	No
ABD84 (1991-1993)	Holzapfel	No	No	No	2-D	No	No
ABD85-88 (1991-1993)	Holzapfel	No	No	No	2-D	No	No
ABD89 (1991-1993)	Robinson, Lind &/or Holzapfel	Yes	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
ABD90 (1991-1993)	Robinson, Lind &/or Holzapfel	Yes	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
ABD91 (1991-1993)	Robinson, Lind &/or Holzapfel	Yes	No	No	2-D	No	No
ABD92 (1991-1993)	Robinson, Lind &/or Holzapfel	Yes	No	No	2-D	No	No

ABD93 (1991-1993)	Robinson, Lind &/or Holzapfel	Yes	No	No	2-D	No	No
ABD94 (16.3.1993)	Robinson	Yes Admitted	Yes Admitted	Yes Admitted	2-D	No	No
ABD95 (4.9.1991)	Lind	Yes	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
ABD96 (4.9.1991)	Lind	Yes	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
PSBD8 (no date)	(Not alleged)	No	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
PSBD11 (no date)	(Not alleged)	No	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No
PSBD13 (14.10.1991)	Lind	No	No	No	(i) 2-D (ii) 3-D	(i) No (ii) No	No

2.4 Section 69 defence

73. Mr Lee submitted that even if the court found that the Defendants' machine is a reproduction of the drawings over which copyright subsists and the plaintiffs prove that they own such copyright, the defendants have not infringed the copyright by operation of section 69 of the Act. In view of the findings that I have made, this defence is a minor point and I do not propose to examine it in detail. A discussion of the origin of the English equivalent of this provision, viz. section 9(8) of the English Copyright Act 1956, appears in the speech of Lord Templeman in the *British Leyland* case (at pp.424-428).

74. Section 69 provides as follows:

69. For the purposes of this Act -

(a) the making of an object of any kind that is in 3 dimensions does not infringe the copyright in an artistic work that is in 2 dimensions; and

(b) the making of an object of any kind that is in 2 dimensions does not infringe the copyright in an artistic work that is in 3 dimensions,

if the object would not appear to persons who are not experts in relation to objects of that kind to be a reproduction of the artistic work.

75. This provision has prompted comment in the *Swish* and *British Leyland* cases in relation to the manner in which evidence is to be brought. It appears to have been accepted that the trial judge would make the assessment, putting himself in the shoes of "persons who are not experts in relation to objects of that kind" and deciding whether the object appears to such persons to be a reproduction of the artistic work. Lord Wilberforce said in the *Swish* case (at p.622):

[Section 9(8)] introduces, in the context of reproduction in another dimension, a test which may be described as a test of lay recognition - one well known and applied in many different contexts in American law - for example in relation to dolls or toys made after comic strip characters, or in relation to musical reproductions. It inevitably gives rise to difficulties as to the nature of the evidence which may be received, and as to the degree of non-expertise to be attributed to the judge. The subsection applies by way, and only by way of defence, i.e. after the issue of copying has been decided, and on the assumption that it has been decided in favour of the plaintiff. It is for the defendant to make it good. In relation to the subject-matter, it was, as both sides seem to have accepted, for the judge, placing himself in his position of a non-expert in relation to extruded or moulded components (see the wording of the subsection), to decide whether the respondents' components appeared, or rather did not appear, to be reproductions of the appellants' drawings. For this purpose he must be entitled to compare the objects with the drawing, and, in my opinion, to take account of any written matter on the drawing. ... In performing this task the judge must also be credited with some ability to interpret design drawings: the subsection does not say the contrary, and without it the comparison could not be made. But the comparison to be made is, as I understand it, a visual comparison. The (non-expert) judge should not repeat the process which, as judge with the assistance of expert and other witnesses, he has gone through in deciding whether there has been copying or not.

76. In the present case, I have viewed the Defendants' machine. Comparing it with the ABD89, which is a schematic drawing of the machine, I find that there are similarities in the major features, viz. the motor, the wheel assembly, the long beam running from the base of the motor to the bottom wheel assembly, the shaft connecting the motor to the top wheel, the top wheel housing, the pneumatic jacks, and the "pendulum bar" which connects one of the jacks to the top wheel. There is also substantial similarity in the co-location of these features. I would hold that the similarities are so substantial that a non-expert of such objects would conclude that the Defendants' machine is a reproduction of ABD89. Therefore, if this defence applies - and I have found that it does not - it would fail.

77. ABD95 is an outline drawing of a wheel which the plaintiffs say is reproduced in the top wheel on the Defendants' machine. Although the drawing shows the dimensions of the wheel and its various features, there is no evidence that the top wheel on the Defendants' machine has similar dimensions or similar relative dimensions. I am of the view that in relation to a drawing of a common shape such as a wheel, in order to satisfy the test of similarity, it is not sufficient to prove that the infringing object is of a similar shape. Otherwise there would be a great number of copyright infringements. In such cases it would be necessary to show that some other unique features, such as dimensions, have been followed. Accordingly, in the present case, I find that the top wheel in the Defendants' machine would not appear to a non-expert to be a reproduction of ABD95.

78. ABD96 shows the top and bottom wheel assembly. The top wheel bears no resemblance to the corresponding feature in the Defendants' machine. As for the bottom wheel assembly, that shown in the drawing has a long shaft going through it whereas that in the Defendants' machine has a much shorter shaft which extends only just outside the wheels. In addition the thickness to diameter ratio of the wheels appear different, the wheels in the drawing appear to be thicker in relation to the diameter. I find that the bottom wheel of the Defendants' machine would not appear to a non-expert to be a reproduction of ABD96.

3. Claim under Employment Contract

79. The 2nd Plaintiffs' offer of employment to the 1st Defendant is dated 31 March 1998. He signed it on 1 April 1998 to signify his acceptance. Clause 9.0 of this letter, which constitutes a term of the employment, states as follows:

NON-DISCLOSURE OF TRADE SECRETS

You shall not, during your employment or afterwards, except as authorised by the Company or required by your duties, reveal to any person any trade secrets or confidential information concerning the business or affairs of the Company or any of its related companies or customers which may come to your acknowledge [sic] by reason of your employment and shall keep with complete secrecy all confidential information entrusted to you.

Mr Lee attempted to challenge the validity of this clause on the ground that there is no time or geographic limitation but conceded that he had no authority that such limitations are necessary in a clause such as this in order for it to be enforceable. Furthermore the 2nd Plaintiffs contend that the 1st Defendant owed them a duty of good faith and fidelity. This duty was breached when the 1st Defendant divulged trade secrets and confidential information to the 2nd Defendants.

80. The plaintiffs contend that the trade secrets and confidential information that have been divulged by the 1st Defendant to the 2nd Defendants were as follows:

- (i) the 1st Plaintiffs' literary and artistic works the subject matter of their claim in copyright;
- (ii) the names and addresses of the 2nd Plaintiffs' customers;

(iii) the usual requirements of the 2nd Plaintiffs' customers both as to quantity and quality;

(iv) the prices charged to individual customers of the 2nd Plaintiffs.

3.1 Literary and artistic works

81. I accept the plaintiffs' evidence that the 2nd Plaintiffs kept copies of the drawings of the Radcoflex RF-2 drawings in Singapore in an unlocked metal container which was clearly marked as containing confidential information and the 1st Defendant by virtue of the nature of his job had access to the drawings and other confidential information of the 2nd Plaintiffs. However the plaintiffs have only exhibited ABD81-96 and PSBD8, 11 and 13. There is no evidence of any other documents and I need only to consider these. Furthermore, the evidence does not show that PSBD8, 11 and 13 were stored in the metal container nor that they were confidential. Therefore the plaintiffs' evidence in this respect is restricted only to ABD81-96.

82. There is the question of the nature of the information. Mr Lee conceded that ABD81-83 was necessary to be disclosed to the 1st Defendant in his capacity as a sales engineer. These documents relate to the sizes of the bellows and the convolutions. However he submitted that it was not necessary to disclose to the 1st Defendant ABD84-96, which relate to the operation of the Plaintiffs' machine, as he was not involved in production. If the plaintiffs chose to disclose these documents to the 1st Defendant when there was no necessity to do so, they cannot be confidential information or trade secrets. In support of this contention he cited *Faccenda Chicken Ltd v Fowler* [1986] 1 All ER 617. In that case the English Court of Appeal held that in the absence of an express term, there was an implied term of non-disclosure of information which is of a sufficiently high degree of confidentiality as to amount to a trade secret. In considering whether any information fell within the scope of protection of this implied term, the court would consider the nature of the employment, the nature of the information and the manner in which the employer treated the information. Mr Lee submitted that the information in ABD84-96 could not be confidential information as the plaintiffs had given the 1st Defendant access to it although it was not necessary for his work. However in this case there is an express term, clause 9.0, which prohibits disclosure of confidential information. The documents concerned were stored in a location clearly marked as containing confidential information. In the circumstances I would hold that such information would fall within the scope of clause 9.0.

83. However there is no direct evidence that the 1st Defendant had actually used or made copies of ABD81-96. As explained earlier, although he must have obtained information from the plaintiffs in order to build the Defendants' machine, there is no evidence of the exact source of such information. More importantly, one possible and likely source would be the Plaintiffs' machine. Therefore I cannot infer that ABD81-96 was used. Accordingly, I am unable to find that the plaintiffs have proved their claim under this head.

3.2 Names and addresses of customers

84. The plaintiffs did not exhibit any document containing the names and addresses of customers that

they claim the 1st Defendant had divulged to the 2nd Defendants. Robinson said in cross-examination that there was a name list but failed to produce it when asked to do so. He said that there was a set of customers' business cards but he was not sure if he had given this to the 1st Defendant. No other witness gave evidence that this was given to him. The 1st Defendant denied receiving such information from Robinson or anyone else. Mr Sivakumar conceded that the plaintiffs have not proved this fact. Therefore this aspect of the claim must fail.

3.3 Customers' usual requirements

85. The same situation obtains here. Robinson said that there was a list of usual requirements of the plaintiffs' customers. But he was not the one who gave this list to the 1st Defendant. He said that his product manager, Ng, would know about this. However Ng did not say anything about this. I should add that the list was not produced. Mr Sivakumar makes the same concession that there is no evidence in respect of this breach. Accordingly this claim also fails.

3.4 Prices

86. The evidence on this is equally scarce. Again nobody gave any evidence of the existence of a list of prices and that these were given to the 1st Defendant. However I accept that, from the nature of his employment as a sales engineer, I can infer that the 1st Defendant knew the 2nd Plaintiffs' prices for their bellows. I also accept that the information on prices is confidential information. However there is no evidence of disclosure by the 1st Defendant to the 2nd Defendants. Of course the information is inside the 1st Defendants' head and he is capable of memorising it. As he is the person behind the 2nd Defendants it would be a simple matter for him to use it. However at the very least, there should be evidence that the 1st Defendant had made use of his knowledge of the 2nd Plaintiffs' prices, whether by way of undercutting his former employer or in any other manner. The plaintiffs had access to the 2nd Defendants' documents through the pre-trial discovery process and yet no evidence is adduced on how the 2nd Defendants priced their products. Indeed the 1st Defendant had given evidence that he priced his products according to what the market could bear, it being a quite imperfect market. I therefore cannot find that the 1st Defendant had disclosed the 2nd Plaintiffs' confidential information relating to prices to the 2nd Defendants.

4. Conclusion

87. I have no doubt that the 1st Defendant had made use of information from the plaintiffs in constructing the Defendants' machine. In all likelihood, he had used either the engineering drawings based on which the Plaintiffs' machine was built - and which were not exhibited by the plaintiffs - or he had somehow taken the dimensions off the Plaintiffs' machine. The difficulty faced by the plaintiffs is to prove exactly what he had used. However the plaintiffs' problem is not insurmountable. They could simply have exhibited the engineering drawings of their machine and proved that copyright subsists and that they are the owners. If the drawings do relate to their machine, and are not of a

nature as would afford the defendants a defence under section 69 of the Act, then I would have no difficulty in holding for the plaintiffs on the question of infringement by indirect copying. It baffles me that they have chosen not to exhibit and prove copyright in the engineering drawings and instead used ABD81-96. Be that as it may, I have to decide the case on the evidence before me and the plaintiffs have to live with the consequences of their decision. As for their case in breach of the employment contract, the lack of evidence was equally stark. But I suspect that their primary complaint is in relation to the copyright infringement and this part of their claim was only included for good measure.

88. I accordingly dismiss the plaintiffs' claims against the defendants in their entirety. I will hear counsel on the question of costs.

LEE SEIU KIN

JUDICIAL COMMISSIONER

SUPREME COURT

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