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COMPUTER PROGRAM AND
SEMICONDUCTOR CHIP PROTECTION:
CANADIAN GOVERNMENT OPTIONS

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CONSUMER AND CORPORATE AFFAIRS CANADA

September 19, 1985

PTIC Paper - September 19, 1985

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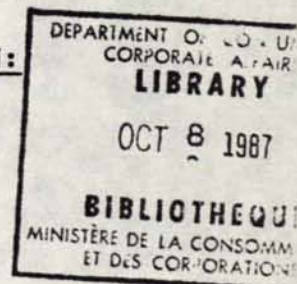
COMPUTER PROGRAM AND SEMICONDUCTOR CHIP PROTECTION:

CANADIAN GOVERNMENT OPTIONS

INTRODUCTION

The Government of Canada is presently developing proposals for legislation to protect computer programs and, in all likelihood, semiconductor chip designs as well. At this point in time, this paper can only outline the broad alternatives or options now being considered. There are two reasons why it cannot be more specific. The first reason is that policy decisions relating to issues of this nature are

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normally announced by Ministers following Cabinet approval. The present Cabinet has not yet considered the substance of copyright revision, but it hoped that this will happen in the next few weeks or months, following the release of the Report on Copyright Revision of the Parliamentary Committee on Communications and Culture. This document is expected to be tabled any day now. The second reason is much more practical. Many of the details of proposed legislation have not been finalized. The Department makes no apology for this, for the simple reason that the issues are changing and unfolding very rapidly.

This paper will outline the principal options now under consideration. However, unless specifically noted, none of the comments should be considered as necessarily reflecting official government policy at this time.

COMPUTER PROGRAMS

"A computer program is a set of statements or instructions to be used directly in a computer in order to bring about a certain result." This is the definition used in the 1980 amendment to the U.S. Copyright Act of 1976. This amendment was the first explicit legislation in the world on the copyright protection of computer programs.

Computer programs are normally created in "source code". They are expressed in alpha-numeric languages such as Fortran or Pascal and appear as words, letters and numbers. Given that copyright law has long since protected telephone directories, coded telegraph messages, racing forms, and other documents of less than Shakespearean aesthetic appeal, there has never been much serious controversy over the protection of source code. Indeed, many programmers see their work as a supremely creative and aesthetic process, akin to the writing of a book.¹

There has been some controversy, however, about how, or indeed whether, "object code" should be protected. This is the matter of crucial importance because object code - the string of "I's" and "O's" in a machine readable format - is what actually runs the computer. It is created from the source code automatically in a process called compilation. From a technical standpoint, object code is virtually a reproduction, a translation, or adaptation of source code. Courts in many jurisdictions lacking explicit computer program legislation have recognized this is one way or another. Moreover, many courts have now recognized that it is irrelevant for copyright purposes whether the program is

1. Michael S. Keplinger, Authorship in the Information Age: Protection for Computer Programs under the Berne and Universal Copyright Conventions, Copyright, March, 1985, p. 119 at 125.

stored on a disc, tape, or some species of electronic memory, normally a "ROM" (read only memory) chip.

The issue, then, appears at first glance to be extremely simple. One would seem to need only indicate explicitly that computer programs are a species of literary work, and perhaps go so far as to define them. This was the American approach in 1980, with an additional provision creating a very limited exemption from liability for the making of archival or back-up copies and for making adaptations. This rather minimalist approach was settled upon after considerable study and effort, which is principally reflected in a very important report published in 1978 by the U.S. Committee on New Technological Uses ("CONTU").² The CONTU majority report and its dissenting opinion have since become something of a bible for all parties in the great debate on computer program protection.

This debate has centred on the following issues:

1. Why should computer programs, which are arguably nothing more than a device (however complex, creative and elegant) for running a machine, be protected by copyright?
2. Final Report of the National Commission on New Technological Uses of Copyrighted Works, Library of Congress, 1978.

2. If copyright protection is contemplated, how does one comfortably fit intrinsic copyright concepts such as moral rights or a lengthy term of protection, with a phenomenon such as computer programs to which they are arguably irrelevant or inappropriate?

The debate is not over by any means. In a carefully worded and hotly debated report, the World Intellectual Property Organization on March 8 of 1985 used deliberately vague diplomatic language such as this to indicate current international thinking about these issues:

"A great number of participants stated that computer programs were works protected by copyright provided that they were original productions, constituting individual, creative expression of the set of instructions developed in them; they stated that computer programs may be assimilated to literary works. Some said that the creation of computer programs even had aesthetic aspects. During the last years, relatively few court cases had been decided and, that too, only in a few countries; some cases were still pending; however, whenever

judgements had been delivered, they, by and large, confirmed the applicability of copyright."

"A great number of participants developed arguments in favor of recognizing copyright protection of computer programs; patentability of computer programs per se had been ruled out under the law of virtually every country; other possible forms of protection under industrial property law did not grant exclusive rights to the creator of such a program; copyright, in its development, had proved to be flexible enough to extend to works of a technical nature, such as plans. They added that the protection under existing international copyright conventions would promote the production and international circulation of programs without delay, by means of extending the protection granted to national creators of computer programs to nationals of other Contracting States; copyright provided for effective protection not only against

reproduction, but also against other forms of uses such as telecommunication (e.g., broadcasting) of the program and allowed, on the other hand, free use of the methods or ideas (algorithms) embodied in the program; the Berne Convention excluded the possibility of introducing compulsory licensing in the case of protected programs. One expert said that the protection of computer programs by copyright also strengthened the protection of traditional types of works when stored in computers."

"Delegations from countries where computer programs were protected by copyright said that, in general, copyright provided an effective means of protection."

Translated into plain and very unofficial English, these statements mean roughly that:

- a) Most countries which have a software industry recognize that computer programs need protection against copying.

- b) Patent law is wholly inappropriate and in any case not available for the protection of computer programs per se.
- c) Copyright law, even without explicit provisions for computer programs, is generally protecting computer programs in the courts of most countries where litigation is taking place.
- d) Traditional copyright law, while not necessarily perfectly suited to this issue, is the best known method and is readily available, with or without detailed explicit provisions, to meet a pressing need for protection.

This is approximately the position that Consumer and Corporate Affairs is now taking. Our Minister, the Honourable Michel Côté, recently made the following general statement on copyright and computer programs to the Parliamentary Committee on Communications and Culture on May 30, 1985:

When the previous government published its White Paper on Copyright, it proposed a five-year protection term. This was based on a scheme that would have differentiated human from machine

readable programs. Reaction to these proposals was negative. Five years was seen as too short a term to encourage the software industry. And the human versus machine readable distinction was considered legally and technically unworkable. Since then, several Canadian courts, including the Québec Court of Appeal, have ruled that computer programs are protected under the current Copyright Act for the life of the author plus 50 years. This has applied to both types of programs.

Australia has passed legislation to this effect. Great Britain and Japan are planning it. And the United States has had such a law on its books for the past five years.

We have carefully re-examined the White Paper proposals on computer programs. Based on the developments mentioned, as well as technical and expert legal analysis, our position differs considerably from that stated in the White Paper. We as a government should consider the protection of computer programs in all forms essentially as literary works with the full traditional term of copyright protection." (emphasis added)

The critical word in that statement is "essentially". The Government still has the option, and indeed responsibility, to decide in what ways, if any, computer programs should be explicitly differentiated from literary works. The following are the principal options:

1. The application of moral rights to computer programs still disturbs some people. This doctrine, which must apply to literary works as a consequence of the Berne Convention, gives a creator the right to prevent their distortion or mutilation and to claim authorship. It is argued that computer programs are frequently changed by users to suit their own needs, and that this may cause difficulties with an inescapable moral rights scheme. On the other hand, it is argued that this is no different from the example of many manuals or texts in which the user makes marginal notes or additions or deletions as needed. Such activity has never given rise to a lawsuit, as far as I know, unless the user attempted to publish the result. It can also be argued that the possible right of several employees to claim authorship of or the right on integrity in a computer program presents no greater or lesser problem than the similar right of the dozens, or hundreds, of employees who contribute to newspapers, sound recordings, films, or other works involving multiple authors. However, Canada does have the option, within limits, of circumscribing in the case of computer

programs whatever moral rights provisions are ultimately passed for other literary works.

2. Another specific problem which admits of a certain scope for option in policy making concerns the concept of originality in the case of computer programs. Under Anglo-American-Canadian copyright law, a work is sufficiently original to receive copyright protection basically if it is not copied. However, the German courts seem to be establishing a higher threshold of originality for copyrighted works in general which will require some degree of relative creativity. This may result in relatively simple programs, such as those in games or household appliances, being denied copyright protection per se in Germany.

However, one can also argue that our Anglo-Canadian jurisprudence has already established certain general principles which would adequately apply to the question of originality. These include the doctrine that a work must be of some relative substance to be protected by copyright and it must reflect some substantial degree of skill, industry, or experience by an author.³

3. See Fox, Canadian Law of Copyright, p. 40ff.

Indeed, this issue shows some sign of becoming important in U.S. jurisprudence in the context of whether a relatively short and highly functional program which can only be written in limited ways and is permanently stored in the computer's R.O.M. (sometimes referred to as "microcode") is or ought to be protected by copyright.⁴

Moreover, our copyright law has never protected ideas, facts, raw data, arrangements or schemes or methods of doing particular things, or indeed sports scores per se.⁵ This principle may well, in any case, be stated explicitly in the revised act.

3. Indeed, one could attempt to define the concept of reproduction in the particular case of computer programs. The recent U.S. case of SAS Institute, Inc. v. S&H Computer Systems, Inc.,⁶ is, at the very least thought-provoking in this respect. In this instance, the defendant was found liable for copyright infringement when only 44 out of

4. There is litigation now pending in NEC Electronics, Inc. v. Intel Corp. [N.D. Cal., San Jose Div., No. C-84-20799-WAI. Motion for partial summary judgment denied on August 13, 1985.

5. See Deeks v. Wells, (1931) O.R. 818, Moreau v. St. Vincent, (1950) Ex. C.R. 198.

6. Nos. 82-3,669 and 82-3,670, U.S. District of Middle District of Tennessee, Nashville Division, March 2, 1985.

186,000 lines of source code were identical. On the facts, however, it appears that the defendant went well beyond the bounds of legitimate "reverse engineering" and, in effect, "paraphrased" the plaintiffs program. The Government's concern with this point, which also relates to that of originality, is that computer programs should only receive copyright protection if such protection does not prevent other parties from independently creating programs which can perform similar or indeed identical functions. The protection for a program should not extend beyond the actual expression of the program itself. Programs which can only be written in one way should not be protected by copyright. It may be a legitimate question whether explicit language is needed to ensure that the courts follow these principles.⁷

To date there has been no problem with copyright being used as a sword to stifle competition. Indeed, even IBM which vigorously protects its "BIOS" program cannot prevent an independently created and functionally equivalent program

7. See Apple Computer, Inc. v. Formula International
(1984) 725 F. 2nd 521.

from being marketed. It is legally and technically possible to create such a program.⁸

4. Another area which raises some questions is that of the so-called "use" right in the context of computer programs. To use a program, one must "load" it into the computer. This is arguably a reproduction, perhaps impliedly authorized by the rights owner.

However, there is concern about the now common phenomenon of networking computers. This involves the use of several terminals which can simultaneously (for all practical purposes) run from one program stored in a central memory, without even requiring temporary electronic reproduction in the remote terminal. Thus, one copy of a program, legitimately purchased, can serve several users without having to make extra and clearly illegal copies of a disc or tape. This technology is no longer expensive and is being used by small organizations.

Our copyright law has no concept of use per se. In other words, anyone can read a book, but you need authorization to reproduce it. It is argued that the use phenomenon

8. See G. Gervaise Davis III, IBM PC Software and Hardware Compatibility: [1984] 10 E.I.P.R. 273. See also R. Stern, Data General Corporation Antitrust Litigation [1981] 11 E.I.P.R. 325 and Apple Computer, Inc. v. Formula International, Inc., 725 F. 2d 621. (9th Cir. 1984).

should be controlled by contract, or tiered pricing. For example, a single non-business user of a program would pay less than a large commercial enterprise equipped with sophisticated networking facilities. Enforcement would be a matter of contract law.

5. Another issue which may merit explicit treatment is that of the right to adapt or to make derivative works, which could be defined with particular respect to computer programs. For example, it could be explicitly stated that the copyright owner has the exclusive right to make versions of a program intended for different operating systems. Many will argue, however, that this level of specificity is unnecessary.⁹

6. Another example of an issue possibly requiring explicit treatment is that of a rental right for computer programs. This is an issue which is beginning to emerge separate and apart from that of rental rights in sound and video recordings.¹⁰

The computer software sector in Canada is currently subject to a phenomenon closely akin to rental, whereby

9. See Whelan Associates Inc. v. Jaslow Dental Laboratory, Inc., (1985) 225 U.S. P. Q. 156.

10. See Howard P. Knopf, The Proposed Rental Right For Video and Sound Recordings, Consumer and Corporate Affairs Canada, 1985, p. 39 ff.

certain enterprises are making software available for "evaluation" purposes for a typical charge of \$10.00, while the actual retail cost of the software may be several hundred dollars. It is alleged that some of these enterprises are simply encouraging and facilitating the copying of programs by consumers for a tiny fraction of the actual cost of the legitimate product.

Any person competent in the basic use of computers with access to a machine with two disk drives (or in some cases only one) can usually copy this software in seconds for the cost of a blank disk (i.e. \$2.00-\$4.00). Program locks are a small deterrent but not particularly effective. "Lock breaking" programs are also now available, probably as well on an "evaluation" basis. The computer software industry may have a good case for a rental right for computer programs stored in a form readily capable of being "loaded" into a computer such as in disc, cartridge, or tape formats.

In order not to achieve unintended results, such a right would necessarily have to be drafted in such a way that it did not include programs not readily capable of being "loaded" into a computer. For example, many consumer and industrial items ranging from appliances to automobiles and computers themselves contain such programs in "read only memory" and should not be caught by such a right. It may

suffice to limit the right to programs which exist in any commercially available form apart from the devices which they have been devised to operate.

A bill to prohibit the rental of computer programs was introduced last year in the U.S. Senate by Senator Matthias (S. 3074).

7. Another issue which may require slight differentiation from treatment as a literary work is that of some sort of fair use provision allowing the making of back-up copies. Computer programs as stored on discs or tapes are very fragile and it is quite normal to make a back-up copy for safety purposes. Many software companies explicitly encourage this. However, in the absence of such a license, such an act would normally constitute an illegal reproduction. It may be useful to clarify the legality of this common practice.

8. The final issue which this paper will deal with, with respect to the copyright protection of computer programs is that of the doctrine of "exhaustion". This entails that once copies of a work have been legitimately placed on the market anywhere in the world, those copies can be imported into any other territory, such as Canada. On the other hand, import controls would allow rights owners in Canada to prevent such importation.

The White Paper on Copyright¹¹ proposed that rights owners in Canada would be able to prohibit imports of cultural works, but not of computer programs. Such a policy would be a way of giving special protection to the book publishing and recording industries due to their cultural importance. It may not be necessary for computer programs. It also may not be desirable; for example, many products ranging from cameras to cars incidentally contain computer programs and an import prohibition right could be used in such cases as a loophole to exclude grey or parallel imports.¹² If the Government decides to provide for explicit exhaustion in the case of non-cultural works such as computer programs and to allow import prohibition of "cultural" works, there may be considerable drafting difficulties in making this distinction.

Copyright Treatment of Computer Programs in other Jurisdictions

The Government will be closely studying current developments in other jurisdictions in order to arrive at an actual draft of legislation. The most notable precedents,

11. From Gutenberg to Telidon, CCAC and DOC, Ottawa, 1984, pp. 23-25.

12. See Howard Knopf. The Seiko Case: More Shades at Grey Marketing Law, 1 I.P.J. 337 (June, 1985).

for our purposes (in addition to that of the U.S.A.) will likely be Australia, England, Japan, and Germany.

Australia dealt with computer programs in its Copyright Amendment Act of 1984. This was in response to a trial court decision denying copyright in a computer program.¹³ This legislation was described by the Attorney General in an explanatory memorandum to be a "short term measure to enable a review to be conducted of the long term policy". However, Australia, like Canada, has no tradition of "sunset" legislation and it may be that this law will survive indefinitely, in effect, as the long term measure. It is also important in comparing the Australian and U.K. proposals (to be discussed below) to note that the basic Australian Copyright Act of 1968 is very similar to the U.K. Copyright Act of 1956.

The Australian amendment is fairly detailed. It goes so far as to define adaptations of computer programs, and to redefine "infringing copy" to cover copies of adaptations of works. There is a definition of "material form" to cover storage in any form from which a work or adaptation can be reproduced. There is a presumption that the making of "back-up" copies is permitted. Antipiracy offences specifi-

13. See Apple Computer Inc. v. Computer Edge, December 7, 1983.

cally cover the creation of infringing copies by telephone or radio transmission of a program. The advertising of infringing copies of computer programs is explicitly deemed to be an offence.

The current U.K. Bill 24, by contrast, is extraordinarily simple. This is a private member's bill which has government backing and is expected to pass any time now. The important part of that Bill is only a few lines long and is worth quoting in full:

1. - (1) The Copyright Act 1956 shall apply in relation to a computer program (including one made before the commencement of this Act) as it applies in relation to a literary work and shall so apply whether or not copyright would subsist in that program apart from this Act.

(2) For the purposes of the applications of the said Act of 1956 in relation to a computer program, a version of the program in which it is converted into or out of a computer language or code, or into a different computer

language or code, is an adaptation of the program.

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This approach is, perhaps, even simpler than that of the U.S.A. Computer programs are not even defined. In principle, if we were to follow this model, our legislation might not even need a specific reference to "adaptation", since that term will likely be defined in any case.

The Japanese amendment, which is rapidly proceeding, is in turn fairly complex. Highlights include:

1. The same term of protection as literary works.
2. Definition of a program.
3. Exclusion of programming language, rules and algorithms used to create the program work.
4. Employer ownership in the absence of a contrary agreement.
5. Exception to moral rights principles re right of integrity.
6. Exceptions re reproduction or adaptation made by an owner of a copy to render it usable in a computer.

7. Creation date of a program can be registered and the date will be presumed to be correct.
8. The use of an infringing copy of a program in the course of business or its reproduction for certain limited purposes shall constitute infringement only if the person is aware that the reproduction involved is an infringement when he obtains a right to use it.

Up until quite recently, the Japanese government had been split on its attitude to computer program protection. The powerful Ministry of International Trade and Industry ("MITI") had advocated a complex sui generis scheme of patent-like protection featuring a compulsory licence provision and a 15 year term of protection. Until MITI bowed to American and internal Japanese pressure by abandoning this scheme in March of 1985, the proposal was extremely controversial.

The West German government has recently amended its Copyright Act to deal with computer programs in an extremely simple way. Literary works now include "programs for data processing" and reproduction of a program for data processing or essential parts thereof shall only be permissible with the authorization of the entitled party. Computer programs seem to be excluded from Germany's otherwise broad private copying exemptions.

The issues mentioned so far and the approaches taken by other jurisdictions represent a fairly complete list of the options now under consideration by our Department. It will be useful to put these into some kind of perspective, with the caveat that this perspective should not be taken as any kind of firm policy commitment:

1. The simple approach taken by the U.S.A. seems to have worked well, at least to date. There is now a good body of high level jurisprudence in that country which has resulted in effective protection of computer programs without impeding competition. As long as this pattern continues, this appears to be a good approach.
2. The Government's consultations with the private sector in Canada also indicate that a simple approach is preferred by it.
3. In general, any legislation which is too technological-ly specific runs a risk of becoming rapidly obsolete as technology changes. Although our present Copyright Act desperately needs changing, we all must admit that it has survived surprisingly well since its conception in England in 1911 - some 75 years ago, given the astounding pace of technological change since then. This is because the law was remarkably general, even

given the state of technology at that time. It has broken down, arguably, where it was too specific, such as in references to "radio" communication which was interpreted to mean by "Hertzian Waves" and to "negatives" in dealing with photography. References to the news media were limited to "newspapers". Another example is the reference in S.19 to a compulsory mechanical royalty of two cents per playing surface. This was set at a time when nobody could have contemplated a playing surface longer than three minutes. Today's compact discs can and do store over 60 minutes of music on one surface.

4. The great modern architect Mies van der Rohe is associated with the famous phrase "Less is more". But while this is a useful concept, the Government would not want to hear another famous phrase such as "Too little, too late". The Department wants to protect computer programs "essentially" as literary works. It welcomes input into what "essentially" should mean.

SEMICONDUCTOR CHIP PROTECTION

At the outset, it must be emphasized that semiconductor chip protection is a completely different issue from that of computer program protection. Chips are tiny 3-D objects

incorporating thousands, soon to be millions of discrete electronic components. We are rapidly approaching the advent of the VLSI (very large scale integration) chip which will use features or "components" smaller than 1 millionth of an inch in measurement.¹⁴ These devices can and do "store" programs, sometimes permanently. But they are not programs themselves. Chips are hardware. Programs are software. Chips arguably need intellectual property protection because it can take several years and millions of dollars to develop them. Reverse engineering is faster and cheaper, but still quite expensive. Outright piracy through photographic copying of the layers is therefore a major temptation.

The American Legislation

On November 8, 1984 the U.S. government passed the Semiconductor Chip Protection Act of 1984 (the "S.C.P.A.").¹⁵ It consisted of a "sui generis" chapter amending their copyright law by providing a special regime

14. Such a level of resolution would allow the printing on one page of a newspaper of a map of the U.S.A. so detailed that it would outline every house on every street. An electron microscope would be needed to "see" this level of detail. See K. Julian, Defense Program Pushes Microchip Frontiers. High Technology, V. 5 No. 5, May 1985, p. 49 at p. 50.

15. Public Law 98-620.

of protection for mask works as embodied in semiconductor chips. The protection given to chips differs considerably from traditional copyright protection in the following respects.

1. The term is only 10 years.
2. There is compulsory registration for commercially exploited chips.
3. There is a provision legitimizing "reverse engineering" which arguably goes well beyond any limits of "fair use".
4. There is an apparently generous "innocent infringement" provision.
5. There is an optional notice or marking provision, with a strong incentive for its use.
6. There is a new threshold of originality concept in the legislation, which is higher than for copyright and lower than for patent protection.
7. There is an explicit "first sale" and "exhaustion" provision.
8. The legislation is "reciprocal" rather than "national treatment" in nature.

Most of the above points are arguably inconsistent with either or both of the Berne Convention and the Universal Copyright Convention - which are the principal international

instruments of copyright law. This was probably the main reason why the so-called "sui generis" approach was chosen, since it seems to permit a specialized regime resembling copyright law but not confined by the constraints of the treaties. It also reflects the thinking of the Semiconductor Industry Association of the U.S.A. ("S.I.A.") and the Electronic Industry Association of Japan. The S.I.A., especially, favours a customized regime of protection which is admittedly a "subtraction" from traditional copyright principles of protection.

The last point should be dealt with first, namely the reciprocal nature of the legislation. Normal copyright law is "national treatment" in nature. This means that country "A" automatically extends to the works of nationals of country "B" the same protection it confers on the works of its own nationals, (provided both countries belong to the same Convention). To put it roughly, this is equivalent to "Do unto others as you would have them do unto you". It is the cornerstone of both copyright treaties.

Reciprocal legislation, on the other hand, entails that country "A" protects the works of nationals of country "B" only if country "B" similarly protects the works of nationals of country "A". This may, perhaps, be described as the "Do unto others only if they do unto you" or the

"I'll scratch your back if you scratch mine" school of international intellectual property law. It is gaining considerable currency in relation to new technology and communications issues such as the public lending right and reprography and is not a trend which is welcomed by purists in these matters.¹⁶

However, the logic of this approach from the American point of view is clear. It puts immediate pressure on other countries which host any kind of indigenous semiconductor chip industry hoping to export to the U.S.A. to pass similar legislation quickly. The U.S. Act had a deadline of July 1, 1985 for other countries to petition for interim protection orders under S.914 in order to prevent chips first exploited outside the U.S. between July 1, 1983 and November 8, 1984 from becoming public domain in the U.S.A. Chips in this category are being called "transition period chips". I am pleased to report that Canada, along with Japan, Sweden, the Netherlands, the U.K. and Australia received such an order in time and at least 20 applications for registration of Canadian transition period chips were filed as a result. As discussed below, the U.K. and Australia had also sought permanent Presidential Proclamations under S.902 of the S.C.P.A. The European Economic Community also currently has a S.914 petition pending.

16. Stewart, International Copyright Law, p. 42.

The Canadian petitions were successful in this procedure mainly because Canada was able to establish that good faith efforts and reasonable progress are being made towards enacting semiconductor chip legislation consistent with that of the U.S.A.¹⁷

In passing, I wish to note that the Government has responded to an invitation to comment on the decisions involving the U.K. and Australia. The Government's main point was that it believes that the U.S. law permits another country to entitlement to a Presidential Proclamation under S.902 permanently extending the benefit of the U.S. Act provided that such country provides reasonable protection to semiconductor chips on a national treatment basis, even if that protection differs substantially from that provided in the U.S.A. The Government of Canada wishes to keep its options open.

Earlier, the Government has also commented to the U.S.A. on three issues concerning their Act and the then

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17. The text of the Canadian petitions was published in 50 Fed. Reg. 25288, 6/18/85 and 30 PTCJ 171, 189. The order was issued on June 27, 1985 effective from June 12, 1985 until June 27, 1986. The petitions were filed by the Canadian Manufacturers' Association, Electrical and Electronic Manufacturers' Association of Canada, Canadian Business Equipment Manufacturers' Association, and Canadian Advanced Technology Association. Mr. Côté's statement of June 11, 1985 in support of these petitions is attached, along with the Order.

interim regulations. These points concerned the mechanism and timing of interim applications in respect of the July 1, 1985 deadline, the requirement that in certain cases world-wide rights in chips (as opposed to U.S. rights) would have to be assigned to a U.S. company, and the nature of statements required by governments in support of interim applications. I am pleased to report that Canada's views prevailed on all three of these issues.

It is worth noting that S.914 contains a built in review mechanism to take into account international reaction to the U.S. law within 2 years. The Government is very aware of this process and will continue to monitor all developments very carefully in order to protect Canadian interests.

Canadian Government Position

Until the decision in Bayliner Marine v Doral Boats¹⁸ was rendered by the Federal Court of Canada on June 14, 1985, the Government did not even have as strong a case as that of the U.K. or Australia to argue that current Canadian copyright law would cover mask works as embodied in semiconductor chips, assuming that it would have wished to advance

18. Unreported as yet.

such a position. That judgment now appears to hold that copyright in two dimensional drawings of a utilitarian device can be infringed by the making of a three dimensional object, notwithstanding that the drawings are not directly copied. Chips are 3-D byproducts of two dimensional works or of computer stored data. In supporting the Canadian petitions, our Government did reserve its position on making such an argument at a later date.

This, of course, is the present state of the law in England culminating in their British Leyland case in the Court of Appeal last year.¹⁹ There is similar jurisprudence and statute law in Australia. Thus, the U.K. and Australia, on the basis of this law and jurisprudence, applied for a Presidential Proclamation under S.902 of the U.S. Act. This would have resulted in them receiving permanent protection under the U.S. Act on the basis that they have a law in place protecting semiconductor chips on a national treatment basis. These applications have not yet succeeded. Instead, S.914 orders were issued similar to the one Canada received except that the U.K.'s was for a longer period of time.²⁰ Australia has publicly raised "serious concern" with the terms of the S.C.P.A. relating to

19. British Leyland v. Armstrong Patents, [1984] F.S.R. 591 (C. of A.).

20. See 50 Fed. Reg. 26818, June 28, 1985.

reciprocity and is apparently still seeking a Presidential Proclamation.

The text of the decision issued by the Secretary of Commerce in relation to the U.K. and Australia does note concerns raised by the S.I.A. to the effect that they do not wish to see full copyright protection being applied to semiconductor chips. It is no secret that the British Leyland case is being appealed to the House of Lords and that there is considerable momentum in England in favour of legislative clarification of the 3-D infringement issue and possible reversal of the British Leyland decision.

The Bayliner case is being appealed as well, and it is also no secret that our Department is looking at this issue very closely. When it comes to the issues of 3-D infringement and the borderline between copyright and industrial design, our Department is carefully examining whether immediate action might become necessary to ensure that non-decorative tailpipes and similar objects are not protected for the life of the author plus fifty years. The issue involves the question of whether the making of a three dimensional object, to the extent that it is purely utilitarian in nature, should constitute infringement of copyright in a literary or artistic work such as a drawing.

Accordingly, regardless of the Bayliner case, the Government would not likely have pursued the notion that Canada's current copyright law does protect semiconductor chips because the Government would not be comfortable with the consequential results that might follow if this were the case.

Where does the Government go from here? In his speech to the Parliamentary Committee on Communications and Culture on May 30, 1985, our Minister asked the Committee to look specifically at the issue of semiconductor chip protection in the context of copyright revision. In his statement of June 11, 1985 in support of the successful S.914 petitions by the Canadian associations, Minister Côté indicated that:

- a) Our Department sees the development of a specific policy with respect to the protection of semiconductor chips as a high priority within the framework of the copyright revision process
- b) We are procuring studies, the results of which the Department intends to incorporate in a discussion paper, which will in turn form the basis of consultation with Canadian industry involved in the design, production or use of semiconductor chip products

- c) The Government hopes to be able to announce a policy on semiconductor chip protection by the first half of 1986.

Assuming that the evidence continues to warrant semiconductor chip protection in Canada, the Department hopes to seek Cabinet approval in the next few months to proceed with the task of devising and implementing explicit legislation to carry out this policy. The current thinking at CCAC is that any such legislation could be part of the revised Copyright Act and we hope that the copyright revision process will move fast enough to have this in place by November, 1987 when the interim protection mechanism is now due to expire in the U.S.A.

Another mechanism which will enable us to achieve consistency with the U.S. Act is that of adhering to an international treaty on semiconductor chip protection. The World Intellectual Property Organization (WIPO) has circulated a draft treaty and the first meeting of government experts is scheduled for late November of this year. Canada hopes to attend and participate actively. The Government has a very strong interest in the outcome of this treaty process, since it will influence our thinking on any possible legislation we may enact.

Policy Options

The following are the options presently under consideration for a possible scheme of chip legislation.

1. Parliament could simply deem mask works as embodied in semiconductor chips to be literary works (i.e. plans) or artistic works. The treaties would then apply, along with the full range of protection applicable to such works. This, in effect, would etch the British Leyland decision into our statute at least with respect to semiconductor chips. It is a simple solution - and possibly simplistic as well. But it is an option. Great care would have to be taken to ensure that no unintended results would occur with respect to non-decorative tail pipes and the like.
2. Parliament could utilize a more or less traditional copyright approach with a host of exceptions and qualifications. This was the approach of the U.S. Senate in the great chip debate.²¹ It is a complex approach but has much to recommend it from a purist viewpoint of international intellectual property law. The Senate approach did not prevail.

21. See S. 1201.

3. Parliament could create a separate class of works called "mask works" and fashion specific rights and remedies as appropriate. This was the U.S. approach, but this Government need not carbon copy the U.S. result. There are a host of options still open to us if we adopt this approach, depending, however, on how S.902 is interpreted and the international consensus which may emerge as a result of the treaty process now underway at WIPO in Geneva. Such an approach could, in principle, involve a separate piece of legislation.

These are the options that must be considered in terms of the substance of possible chip legislation:

1. Term: The American industry wants a short term of protection, and this is what they received, namely 10 years. Not so long ago, the Canadian government proposed a short term of 5 years for computer programs. This was not a popular proposal, in part because it was seen as far too short. Ten years fits with the notion that a design-type of protection suits semiconductor chips. A longer period seems appropriate only if we decide to fit chips within the existing treaty framework.

The draft E.E.C. proposal and draft WIPO treaty both call for a ten year minimum term, with a longer term

optional. There may be no great advantage in a longer term, especially if the chip industry itself does not want it. But we note that it is available.

2. Registration: The U.S. system requires registration within two years of first commercial exploitation of chips to ensure protection. Ms. Peters will be discussing this system in greater detail. Compulsory registration is, of course, an anathema under the copyright treaties. The White Paper on copyright proposed to do away with copyright registration. The PTIC disagreed with this. The PTIC is well aware of the Nielsen task force recommendation with respect to the Canadian Patent Office. With this background, it would be surprising if our Government were to be enthusiastic about a complex American-style registration scheme for chips necessarily requiring several additional specialized personnel and yet more bureaucratic machinery.

On the other hand, registration does provide some certainty in the event of litigation and it can help to disseminate knowledge. The Government will have to decide whether the benefits outweigh the costs.

3. Reverse Engineering: This is a concept near and dear to the heart of the American industry. It was very controversial for a time within that industry. Briefly, reverse

engineering involves quite literally the dissection and analysis of a chip and the incorporation of the results of this process into a new and presumably improved chip. It is not the photographic copying of a chip layer by layer to produce an identical product. The borderline is very hazy indeed. The safest statement as to what it entails is to quote the language of S.906 of the SCPA which states:

"§906. Limitation on exclusive rights: reverse engineering;

"(a) Notwithstanding the provisions of section 905, it is not an infringement of the exclusive rights of the owner of a mask work for -

"(1) a person to reproduce the mask work solely for the purpose of teaching, analyzing, or evaluating the concepts or techniques embodied in the mask work or the circuitry, logic flow, or organization of components used in the mask work; or

"(2) a person who performs the analysis or evaluation described in paragraph (1) to incorporate the results of such conduct in an original mask work which is made to be distributed."

The S.I.A. feels that this doctrine goes well beyond traditional fair use and is essential to the industry in order to maintain innovation and competition. But is it sufficiently clear that industry, practitioners, and the courts can understand it? One need not be very bold to predict that this section will generate some extremely complex and unpredictable litigation. And yet, its purpose seems highly commendable.

It is an option well worthy of very serious consideration but one which would require considerable drafting attention.

4. Notice or Marking: S.909 of the SCPA encourages the marking of a notice on the chip with the symbol *M* or M and the name or abbreviation of the name of the owner. The inducement to do this is that it constitutes prima facie evidence of notice of protection. Regulations have been passed about the detailed form of notice. The problem, arguably, is that it may be highly impractical, given the tiny size of some chips and the manner in which they are housed or packaged. It is important for chip designers to know whether a chip is proprietary or not, and if so who the alleged proprietor may be. However, compulsory notice per se is foreign to the copyright treaties and optional notice should arguably remain, in fact, optional. As chips get smaller, they become harder to mark in any meaningful way.

5. Innocent Infringement: Concern has been raised about products such as washing machines being stopped at the border entering Canada or leaving Canada to enter the U.S.A. because an importer, distributor, or manufacturer in all innocence has sourced a 98¢ chip that happens to be arguably an infringing chip. This is a valid concern. An answer with respect to exports to the U.S.A. is contained, perhaps, in S.907 of the S.C.P.A. which provides that an

innocent purchaser of an infringing semiconductor chip product essentially has no liability for the importation or distribution of that product unless and until he has notice of protection (defined as "actual knowledge or reasonable grounds to believe that a mask work is protected...")

After receiving notice, the innocent purchaser is liable only for a reasonable royalty and can resell the products containing the chips which he has already bought. How this provision relates to the notice provision mentioned earlier remains to be determined. In other words, does the marking of chips buried deep inside a washing machine or automobile dashboard in compliance with S.909 of the SCPA constitute the notice which would preclude the innocent infringement defence of S.909? One would think that the answer should be negative. Again, this is a most commendable notion, but a difficult one to draft.

6. Originality could be redefined for chips. S.902(b) of the S.C.P.A. denies protection for chips which are not "original" or which consist "of designs that are staple, commonplace, or familiar in the semiconductor industry, or variations of such designs combined in a way that, considered as a whole, is not original". This establishes a new threshold of originality and creativity arguably somewhere in between that of copyright and patent doctrines.

Such a concept is useful in order to foster ongoing innovation. It relates closely to that of the policy on reverse engineering in the S.C.P.A. However, such a concept is also almost certain to generate litigation of an extremely complex nature.

7. The final policy option for the purposes of this paper concerns the issue of "exhaustion". The concerns are virtually the same as those discussed above with respect to computer programs. The U.S. law does seem to provide for exhaustion in S.906(b) of the SCPA in the sense that anyone can import chips made by or under the authorization of the owner of the rights therein. This is in contrast to the law relating to other copyrighted works under U.S. Copyright Act.²² The language used should be carefully compared to the "first sale doctrine" as enunciated in S. 109(a) of the U.S. Copyright Act with respect to other protected works. "First sale" and "exhaustion" are not quite the same issue; however, the differences are beyond the scope of this paper.

These are some of the options the Government must consider in terms of policy, assuming it will wish to enact specific semiconductor chip legislation. I note, simply for the record, that the U.S. chip legislation is very complex.

22. See 17 U.S.C. ss. 601-603.

It is 9 pages in length, without the various regulations and guidelines which are also very lengthy. It took years to get this drafted and passed. The first legislative initiative was H.R. 14293 in 1978.

The S.C.P.A. is a marked contrast from the U.S. treatment of computer programs. Its level of detail approaches and perhaps transcends even that of the U.S. provisions for retransmission liability under their Copyright law. One may hope that there is a simpler way which will keep all parties, including the U.S. industry, reasonably happy. It is noted, for the record, that the Japanese chip legislation now in the process of passage is over 40 typewritten pages in length.

The Department has already enjoyed a fruitful relationship with the PTIC Subcommittee on Computer Related Technology. The author is pleased to be an ex-officio member of that Committee and hopes that its useful work will continue. It is interesting that the differences in view between this Committee's views on chips and that of the PTIC Council closely parallels that of the U.S. Senate and House of Representatives. It is a healthy debate.²³

23. See D.I. Wilson and J.A. LaBasse, The Semiconductor Chip Protection Act of 1984: A Preliminary Analysis, Journal of the Patent and Trademark Office Society, February 1985, V. 67, No. 2, p. 57.

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