AGARD-AR-176

AGARD

ADVISORY GROUP FOR AEROSPACE RESEARCH & DEVELOPMENT

7 RUE ANCELLE 92200 NEUILLY SUR SEINE FRANCE

AGARD ADVISORY REPORT No. 176

NORTH ATLANTIC TREATY ORGANIZATION

DISTRIBUTION AND AVAILABILITY
ON BACK COVER

NORTH ATLANTIC TREATY ORGANIZATION

ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT

(ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD)

AGARD Advisory Report No.176

by

Ronald J.Millen
36 Gurney Court Road
St.Albans, Herts
AL1 4RL, UK

This Advisory Report was prepared at the request of the
Technical Information Panel of AGARD.

THE MISSION OF AGARD

The mission of AGARD is to bring together the leading personalities of the NATO nations in the fields of science and technology relating to aerospace for the following purposes:

- Exchanging of scientific and technical information;
- Continuously stimulating advances in the aerospace sciences relevant to strengthening the common defence posture;
- Improving the co-operation among member nations in aerospace research and development;
- Providing scientific and technical advice and assistance to the North Atlantic Military Committee in the field of aerospace research and development;
- Rendering scientific and technical assistance, as requested, to other NATO bodies and to member nations in connection with research and development problems in the aerospace field;
- Providing assistance to member nations for the purpose of increasing their scientific and technical potential;
- Recommending effective ways for the member nations to use their research and development capabilities for the common benefit of the NATO community.

The highest authority within AGARD is the National Delegates Board consisting of officially appointed senior representatives from each member nation. The mission of AGARD is carried out through the Panels which are composed of experts appointed by the National Delegates, the Consultant and Exchange Programme and the Aerospace Applications Studies Programme. The results of AGARD work are reported to the member nations and the NATO Authorities through the AGARD series of publications of which this is one.

Participation in AGARD activities is by invitation only and is normally limited to citizens of the NATO nations.

Published January 1982

ISBN 92-835-1411-4

Printed by Technical Editing and Reproduction Ltd
Harford House, 7–9 Charlotte St, London, W1P 1HD

CONTENTS

COPYRIGHT: 1971-1981

by

Ronald J Millen

SUMMARY

This publication is an update of Mr A H Holloway's 1970 work 'A Study of Copyright' (Advisory Report No 23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. As in the earlier publication, the emphasis is on photocopying in libraries and on other matters which directly affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

1. INTRODUCTION

1.1 General

This publication is written to update Mr Arthur Holloway's (1970) 'A Study of Copyright'. Much has happened in the intervening ten years - though the underlying problem remains just as confused and intractable. His work included a pilot survey on the subject and reflected the considerable interest of the day in the need for legislative reform. Barker (1970) published in the same year 'Photocopying practices in the United Kingdom' which was a significant survey based on work undertaken for the two international organizations concerned with copyright (Unesco and the United International Bureaux for the Protection of Intellectual Property (BIRPI)). The problems that were beginning to be recognized and discussed then are still substantially with us and indeed have become worse in some areas. This survey follows Mr Holloway's in concentrating on matters that directly affect information transfer rather than the more general areas such as the entertainment industry - but it is important to remember the scale of the financial loss due to 'piracy' in the form of re-publication. Book piracy alone is estimated to deprive publishers of some one billion dollars of sales each year. The first publication of Le Carre's 'Smiley's People' was a pirated paper-back version available in India two weeks before the hardback version was officially released anywhere else. And certainly the record publishers, and more recently the film and video industry, have much cause for complaint.

The copyright of most concern in this study is not commercial republication but 'one off' copying, not necessarily small-scale, on the ubiquitous copying machine. Sawyer (1979) has traced the history of what we now refer to as reprography from the early photostat machine of 1905 to the beginning of xerography in 1938. From 1950 these machines began to become publicly available - in the United Kingdom the Patent Office Library, now the Science Reference Library, was one of the first libraries to operate these machines in 1959. Like it or not, this advance in technology was to influence not just the efficiency of the librarian but his role in the publishing pattern. Doyle (1976) has described the librarian as traditionally serving as a middle-man between authors and users but, as the problems in the legislation have developed, now becoming a spokesman for the user and abandoning the arbiter role. Certainly an unhappy feud is developing and one is hardly surprised to hear in a recent dialogue at a seminar, ostensibly concerned with copyright reform proposals, an accusation of over-pricing by publishers rebuffed by an accusation of undeserved wage inflation for librarians! The rift exists, the present wedge is the copying machine but further 'new technology' is following close behind.

1.2 Coverage

I identify the following areas of change during the last ten years as being of direct relevance to information transfer:

1) the new American law, passed in 1976 and operating from the beginning of 1978, which is now moving towards its first review;

2) moves towards a revised United Kingdom law, currently the Act of 1956, following the Whitford Committee report of 1977 and the Government Consultative Paper (Green Paper) of 1981;

3) various developments in other countries such as Germany, Australia and in Scandinavia;

4) complications arising from international treaties, such as the Treaty of Rome, where the desire for 'free' movement of goods across borders may conflict with national concepts of intellectual property rights;

5) the accession of the Soviet Union to the Universal Copyright Convention in

1973; and

6) the realization that the pervasiveness and the speed of advance of new technology such as microforms, computers, video, etc., is making the creation of relevant legislation on a suitable timescale almost impossible.

To cover these areas I have found the framework used by Mr Holloway just as suitable today. I will describe the situation in the United States and the United Kingdom in some depth. I then cover a variety of countries, in alphabetical order, including the member nations of NATO. I then deal with some specific points separately - in particular: International Copyright (Section 5); Translations (Section 6); Patents (Section 7); and Software and Database Protection (Section 8). These latter would be difficult to deal with on a country by country basis, though inevitably the coverage I do achieve will be oriented towards United Kingdom practice and experience.

One aspect I have skirted round is the underlying ethical or moral argument. Differences in approach in the various countries have had a significant effect on the development of national legislation and this in turn has made harmonization by international treaty all the more difficult. Ploman (1980) writing under the title 'Copyright: intellectual property in the information age' offers an explanation and an analysis of the wider implications of copyright as an instrument for ordering the flows of information and culture within and among societies.

1.3 Further sources

One major difference between my approach and that of the 1970 publication is that, whereas Mr Holloway was substantially original in his contribution, I have necessarily been largely derivative in order to review progress over the ten year period. Thus the list of references at the end of this report is of particular importance. To give some degree of subject approach, in view of the lack of an index, the references are arranged section by section and then in alphabetic order using the Harvard system of citation. More comprehensive bibliographies exist such as Wood (1974) which covers 1954 to 1974 arranged by country and subject. McTague (1978) covers a similar period, 1955 to 1978 but concentrating on the United States. Young (1980) covers 1964 to 1980 and includes national and international aspects, as well as reprography and computer databases. One book I have found particularly valuable while compiling this report is Taylor (1980) 'Copyright for librarians' as this treats both the historical background and recent developments, as well as providing practical advice to librarians about the common or garden problems that arise in libraries.

Copyright is derived from legislation and so often legal advice needs to be sought, preferably from a specialist. I have not tried to indicate the responsible government departments country by country; in the United Kingdom the appropriate body dealing with the operation of the legislation is the Industrial Property and Copyright Department of the Department of Trade at 25 Southampton Buildings, Chancery Lane, London WC2A 1AY. At the same address (to be scrupulously precise with the postcode WC2A 1AW) the Holborn Reading Room of the Science Reference Library (previously the Patent Office Library but now a constituent part of the Reference Division of the British Library) continues to hold a good reference stock of material on intellectual property legislation. This I can vouch for as I work for the Science Reference Library, so this is an appropriate point to say that the views, and any mistakes, in this publication are my own and do not, of course, necessarily reflect the views of the British Library. A further obvious source of material or advice on aspects of copyright relating to libraries and information work is the Library Association Library (now also a part of the Reference Division of the British Library) at 7 Ridgmount Street, London WC1E 7AE. A comprehensive list of addresses of relevant organizations in the United Kingdom is given by Taylor (1980).

2. UNITED STATES OF AMERICA

2.1 Movements towards revision

Ten years ago the situation in the United States of America was that the Copyright Act of 1909 had been revised in 1947 and re-enacted as title 17 of the US Code. Statutory copyright was obtained by including in every published copy the required copyright notice. So works did not have to be registered at the Library of Congress, but without registration no action for infringement could succeed. The 1909 Act gave the copyright holder a monopoly of printing, publishing, copying, and selling the work. It made no mention of fair use or fair dealing, but various court decisions enabled this concept to be used as a defence. In 1935 a 'gentleman's agreement' was reached, by the Joint Committee on Materials for Research and the National Association of Book Publishers, which allowed libraries to make and supply to a user a single copy of a part or complete work provided that it was accompanied by a notice that the user is responsible for any infringement in the use made of the copy and that the library makes no profit from the transaction. The user had to sign a declaration that he wanted the copy for research in place of a loan of the original or making a manuscript copy. One significant difference from United Kingdom practice was the lack of obligation on the makers of the copy to charge at all, let alone to cover their costs.

During the 1960s, as copying technology improved, the position was clearly unsatisfactory and there was a series of suggestions for change. The United States

Copyright Office made a number of proposals in 1962 (Goldman 1962). In an attempt to improve on the agreement the Joint Libraries Committee on Fair Use in Photocopying investigated the copying practices in a number of large libraries. It concluded that copyright owners had little to fear and that libraries should satisfy orders for single copies without any special formalities. Verner Clapp (1963, 1968) put forward and developed the librarians claim that copying services are an essential element of their role; are necessary to their effectiveness; are in the public interest; and do not significantly damage copyright owners' rights. Lazouska (1968) gives a useful summary of US legislation to that date and of the proposals for amendment. She gives an account of the scheme, proposed by the Committee to investigate Copyright Problems affecting Communications in Science and Technology (CICP), to set up a voluntary non-profit-making clearing-house which would grant licences for the reproduction of copyright material and collect royalties for distribution. Another survey of US law in the light of the proposed revisions is Marke (1967) which includes discussion on the use of copyright material in computerised information storage and retrieval systems.

The question as to whether copying harms sales was controversial then as it is today. I indicate some of the evidence, and the sequence of the argument, in the United Kingdom section of this report as it is easiest to treat the UK and US experience together. But certainly by the late 1960s, as xerography became commonplace and relatively cheaper than earlier processes, the publishers began to express their concern firmly. Williams and Wilkins, publishers of some 37 medical journals, began a law suit in which they sued the US Government for infringement through the National Institutes of Health and the National Library of Medicine. The company claimed that they were losing subscriptions and had already been forced to cease publication of two titles. The National Library of Medicine was offering a free photocopy service. The initial decision, reached by the US Court of Claims in 1972, found that infringement had occurred. Commissioner Davis said: "Whatever may be the bounds of fair use as defined and applied by the courts, (the) defendant is clearly outside these bounds." He considered it unnecessary for the company to prove actual damages, as the fact that the copies were made, so diminishing the company's market, was sufficient. Shaw (1972) gives a detailed analysis of this report by the Commissioner.

The United States Government made a successful appeal, reached by a majority vote, and were held free of liability. Benjamin (1974) describes this reversal of the original decision. The case then went to the Supreme Court but, disappointingly for both parties, a four to four deadlock left the status quo in operation - but without establishing any valid legal precedent. In this verdict the point was made that fair use could include making a complete copy and the need to accommodate the interest of science with those of authors and publishers was mentioned. The lack of positive evidence of actual loss of earnings was considered significant. The inability of the publisher to prove damage was one of the reasons for the six year length of the case, which was anyway broadened in scope because of the its potential significance. One of the dissenting judges commented: "The court recognizes that the solution which it has undertaken to provide in this case is pre-eminently a problem for Congress which should decide how much photocopying should be allowed, what payments should be made to copyright owners, and related questions." Elsewhere the court declared that the: "choices involve social and policy factors which are far better sifted by the legislature."

2.2 The Copyright Law Revision Bill of 1976

The new legislation took effect from 1 January 1978 following the signing of the Copyright Law Revision Bill in 1976. Keplinger (1980) of the US Copyright Office has said that the 1976 Act, while not perfect, was a big advance in two ways: "First, the fundamental legal premises on which American copyright rests were brought more into line with the principles observed in other developed nations and in international circles. Second, in many areas, the new copyright law took into account the effect of technology on the creation, dissemination and use of protected works." Thus the first, and in principle the most significant, change is the provision of automatic copyright - so that the copyright stems from the creation and fixation of that work in some tangible medium without the need to publish or register. The need for the work to be human-readable has gone as: "protection subsists in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated either directly, or with the aid of a machine or device." This automatic protection is a prerequisite for compliance with the Berne Convention, but it remains the case that, to take advantage of all rights under the Act, registration is still required. From the information user's point of view the second change is of greater interest - the extent of change to the regulations affecting the use of reprography. The Act allows exceptions to the generally exclusive reproduction right under two headings: (1) 'fair use' in Section 107 and (2) reproduction by libraries and archives in Section 108.

Section 107 codifies for the first time the doctrine of fair use previously set by case law. Use of copyrighted material is permissible for such purposes as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship and research. The use must be reasonable and not harmful to the rights of the copyright owner. To determine fair use the section lays down guidelines which include:

- the purpose and character of the use, including whether it is of a commercial nature or is for non-profit educational purposes;

- the amount and substantiality of the copying in relation to the work as a whole;
- the nature of the work to be copied; and
- the effect of the use on the potential market for or value of the work.

Section 108 describes the special copying rights for libraries and archives which are available if the following criteria are met:

- the copy must not be made for either direct or indirect commercial advantage;
- the collections of the library or archive must be open to the public or to others doing research in the field covered by the collections; and
- the copy must include a notice of copyright.

If these conditions are met then internal library copying of unpublished works for preservation is permitted, as well as for security or research use in another library. For published works copying for preservation or replacement is permitted if a further copy cannot be purchased by reasonable effort. For users the qualifying library may make one copy of a periodical article or other contribution to a copyrighted collection, or a small portion of any other copyrighted work providing a prescribed notice is displayed at the order point, and on the order form, indicating that the copy is made for the purposes of private scholarship, study or research. Under the same conditions entire works may be copied if another copy cannot be obtained at a fair price. Systematic copying is generally prohibited by Section 108(g) but with the proviso that reproduction for inter-library loan purposes may continue, so long as the copying does not substitute for a subscription or purchase of the work.

Guidelines on the interpretation of the above two paragraphs of the Act have been published but they are not part of the law though they have been accepted by the House Judiciary Committee. Only the guideline relating to Section 108 will be considered here. The other two cover: (1) the educational copying from books and periodicals and (2) the educational uses of music. The guideline concerned with library copying was prepared by the National Commission on New Technological Uses of Copyrighted Works (CONTU). Their main role was to investigate and present to Congress recommendations on how to treat computer produced works, software, data bases, etc., and this I deal with later under my Section 8 covering software protection, etc. But the controversy surrounding intra-library copying led to CONTU including this as an area for investigation and report. The guideline they have produced defines the wording in the Act: "such aggregate quantities as to substitute for a subscription to or purchase of such a work" to equate to six or more copies of an article or articles published in the same periodical (periodical title that is, not periodical issue) within a period of five years prior to the request. The responsibility for keeping suitable records lies with the requesting library. The guideline is to be reviewed as part of the overall five year review mandated by the Act - the Copyright Office is charged with reporting to Congress on how Section 108 has fared in balancing the rights of creators with the needs of users of copyrighted works. Naturally Sections 107 and 108 have been the subject of intense controversy between users and producers; Tseng (1979) and Keplinger (1980) have listed some of the questions that repeatedly arise and will hopefully be clarified in the five year review:

- can fair use be applicable when copies exceed the five copies from the most recent five years given by the CONTU guideline;
- how does photocopying for reserve relate to the educational guidelines;
- are the provisions of Section 108 applicable to libraries in for-profit organizations; and
- are the provisions of Section 108 limiting, or do they exist on top of the Section 107 fair use rights.

Risher (1977) has described the first two years of CONTU's operations. The American Library Association (1975) gives a summary of the arguments for library photocopying and Stevenson (1975) and Seltzer (1978) discuss the doctrine of 'fair use'. References to the guidelines are also given in the bibliography under Section 10.

Some other miscellaneous features of the Act are worth mentioning here. Areas denied copyright include:

- devices and forms used for measuring and recording rather than conveying information;
- common or standard works consisting of information that is common property such as calendars, height and weight charts, and lists of tables taken from public documents; and
- works of the United States Government (however publications funded by the US Government from other bodies, such as the reports published through NTIS, are not free of copyright).

The basic term of copyright is increased to the life of the author plus fifty years (previously this was 56 years from publication in two terms of 28 years). The category 'work made for hire' covers work made by special order or commission. In this case the employer is the original owner of the copyright and the term set at 75 years from publication or 100 years from creation, whichever is the shorter. The various exclusive rights permitted by copyright ownership are considered completely divisible but transfers are required to be recorded in the Copyright Office. Taylor (1980) lists some points of difference between UK and US law which include the following:

a) there is no obligation on the maker of a copy to charge for it;
b) the criterion of 'public' libraries is wider in the US as industrial libraries are included so long as there is some availability to people in the field;
c) certain copying between libraries depends not, as in the UK, on obtaining

permission or not being able to trace the copyright owner, but on the work being unobtainable at a fair price;

d) extracts complete in themselves, but 'contributions to a copyrighted collection' are not regarded as a substantial part (this would apply to conference proceedings, etc.); and

e) library employees cannot be sued for acts of infringement, on their machines, of which they were unaware.

The basic treatise on the current US law is Nimmer but the American Library Association (1977) give a librarian's guide and Thatcher (1977) a publisher's guide. IEEE (1977) explains the procedures for registration. A comprehensive general account is provided by Johnston (1978). This includes several appendices that give the wording of parts of the Act and associated Copyright Office regulations.

2.3 The Copyright Clearance Center

One of the byproducts of the incoming legislation was the formation of the Copyright Clearance Center (CCC) in 1977 to provide, on a non-profit basis, publishers' permissions for copying, and to collect and distribute fees for copying beyond the Section 107 and 108 limitations. Inevitably the Center had a slow start but in 1980 the royalty collection exceeded $300,000 (compared to $243,000 in 1979 and $59,000 in 1978) and the proportion of the revenue available for redistribution, after the deduction of administrative costs, has increased from 30% in 1978 to 45% in 1980. Although the Center is proud of the fact that in 1979 the fees distributed to publishers were some five times the figure for 1978 they believe the number of copies reported (for 1979) to have been only about 6% of the total volume of serial copying and the more than 3,000 publications registered with them to be less than 10% of their self-set target. The Center's current concern is the integrity of the reporting of copying by commercial supply agencies - some 60 major commercial document supply services - and during 1981 they plan to sample users to establish whether appropriate permissions had been obtained either from the publishers or from CCC. The Center contends that the user wants the supply agency to obtain the proper permissions because the end user is responsible under the law. A recent development has been the expansion to the Netherlands in 1980. Thus US copyright owners will be receiving royalty payments for US published articles being copied there. The Center publish a handbook for users (Copyright Clearance Center 1977) that explains their procedures. The final success of their operation - financially at least - still seems to hang in the balance. Some reports during 1981 have suggested some element of publisher subsidy may be required.

2.4 Current developments

The 1976 Act has an inbuilt review after five years of operation. The Copyright Office is due to report to Congress in January 1983 and so already the publishers and users are concerned to establish their respective positions. Seven publishers (Princeton University Press, John Wiley, McGraw-Hill, Prentice-Hall, Basic Books, Holt Rinehart & Winston and Nelson-Hall supported by the Association of American Publishers (AAP) and the Author's League of America) charged a commercial copying firm (Gnomen) with violation of the copyright law. The publishers described this action as an attempt to stop what they say is a widespread practice of reproducing materials from copyrighted books and periodicals, without permission, for use in college courses. Gnomen operated in five university towns producing high volume copies of assigned reading materials, at the request of professors, for purchase by students. The case 'Basic Books v Gnomen' was settled by agreement between the parties but, as usual with an out of court settlement, the underlying issues have not been clarified. Following their success the publishers implied that other commercial copying agencies would be sued if they did not comply with the terms of the Gnomen order. Their press release indicated:

> "AAP also expects that similar infringing photocopy activities by not-for-profit institutions will voluntarily be brought within legal bounds. At the same time AAP is monitoring compliance in other contexts where there is substantial evidence that large volume illegal photocopying is being done. Of particular concern to AAP is the photocopying being done by large for-profit organizations and their in-house research libraries and information services. These commercial firms could often appear to utilize photocopying as a part of their operations to a far greater extent than the copyright law permits."

However Mary Hutchings (1980) has firmly pointed out that the settlement is more based on the economic realities facing the two parties (particularly Gnomen) than on the 1976 Act. She says that several aspects of the settlement: "impose restrictions on Gnomen which are far beyond any reasonable interpretation of the Copyright Revision Act of 1976." Gnomen were particularly involved in multiple copying and this was more or less completely restricted in the court order though Hutchings points out that in some cases multiple copying may be 'fair use'. But of more importance to the library community is that part of the order specified that all copying done on the premises would be considered done by the company - even if unsupervised by their staff. This is a condition that the publishers maintain should be imposed generally on librarians, but at present there is nothing in the 1976 Act to provide for this. Mary Hutchings stresses that settlement agreements are not declarations of law or binding precedents and suggests that:"Fear of litigation or confusion over the meaning of cases such as Gnomen should not cause librarians to restrict their activities or those of their

patrons in ways not clearly mandated by the law."

Further legal action is threatened by the AAP against various special (for-profit) libraries operating without:"due concern for the copyright principle". In particular the Association is concerned with the basic importance of obtaining a judicial interpretation of Section 108 of the 1976 Act. Charles Lieb, the Association's copyright attorney, talking in May 1981 said: "If Section 108 does not give us the rights we believe it does, we have to know what to go back to Congress to ask for." Gros (1980) has written at some length on the impact of copyright infringement and photocopying on publishing profitability in both the US and UK.

At the final Copyright Office hearing to gather information for the five year review (early in 1981) David Waite, president of the CCC, testified that analyses of photocopy transaction reports indicated non-compliance by a very large number of research-oriented industrial firms believed to be heavy photocopiers; since a handful of R and D firms do report extensive activity. At the same hearing the AAP charged that the for-profit user community generally does not report and pay for photocopying of scientific and technical journal articles and that the Special Libraries Association (SLA) had discouraged user participation in the CCC. The opposing viewpoint of the librarian was put, at this hearing, by Robert Wedgeworth, executive director of the American Library Association (ALA), who said: "only a small percentage of library photocopying falls outside the limits of fair use." He continued, to argue that librarians had again and again submitted evidence of compliance and that the copyright law achieved its purpose and should not be changed unless publishers could prove a causal relationship between photocopying practices and a decline in journal subscriptions. He suggested that the low use of the CCC was because its jurisdiction and services were limited. E K Gannett, of the IEEE, disagreed and testified that questions concerning the effects of photocopying on subscription trends are not only unanswerable but 'almost irrelevant' owing to current trends in information access and transfer. Deeply concerned about the widespread confusion over what constitutes systematic copying, Gannett asked the Registrar of Copyrights to recommend the development of guidelines by a neutral body. David Waite agreed with this saying that he believes most industrial organizations and many others will: "voluntarily comply with the permission-to-copy requirements in the new law if given an authoritative and clear interpretation." From the industrial users side came a suggestion that the law be amended to provide 'statutory relief' in those instances where a user has made reasonable efforts to obtain permission but without response from the publisher. The AAP considered this reasonable. Wedgeworth, for the librarians, finished his testimony with a call to publishers and authors to join librarians in discussions about the electronic distribution of copyrighted materials. Rather than condemming libraries, publishers and authors should: "join librarians in planning how the electronic networks can be structured to support publishing and authorship while providing users with greater access to published works through libraries and other agencies."

Certainly the current technology is so complex and varied that the 'electronic journal' and 'electronic mail' are not the only likely developments. Publication on demand - on hard copy - from large databanks is now being considered and seems practicable if the input costs can be kept low. Details of such a proposal (ADONIS) are given in Section 3 covering the UK. Apart from the CCC, other suggestions have been made in the United States for centralised schemes. An ambitious document delivery service, the Journal Article Copying System (JACS) was set up by the National Technical Information Service (NTIS) but failed to meet its expected usage levels and was terminated. The service, in its experimental phase, is described by Urbach (1977). Large scale commercial authorized copy supply agencies, such as the Institute for Scientific Information (ISI) continue to serve many needs. Proposals have been made for the establishment of a National Periodicals Center (NPC) but despite support at one time or another from librarians and publishers this project is still under debate (Sager 1979 and Savage 1979).

The many questions relating to the copyright coverage of computer software and associated matters I will deal with in Section 8. Suffice it to say here that the 1976 Act left the situation unclear while CONTU carried out its investigations. However Congress has since passed the Computer Software Copyright Act of 1980 which protects the rights of individuals and companies, who develop, sell and lease computer programs, by adding programs to the list of writings in which exclusive rights may be granted for the copyright term.

3. UNITED KINGDOM

3.1 Introduction

Copyright law in the United Kingdom dates back to 1709. Initially a form of protection for authors it followed certain common law rights dating back to the fifteenth century. The Act of Queen Anne's reign was later extended to cover other types of creative activity, such as painting, sculpture, etc., and to cover further exclusive rights, such as translating, dramatizing, etc. The principle behind creating these exclusive rights can be seen as one of natural law - of protecting 'the fruits of a man's creative labour' so far as profitable exploitation is concerned. Apart from this protection against the plagiarist the community as a whole should benefit if creativity is encouraged by reward - creativity being one of the essential elements for the

progress and well-being of the community.

3.2 Current legislation

The present 1956 Act followed the report of the Gregory Committee (1952). While the Act remains in force - and with the latest consultative paper just published in 1981 we can expect no fresh legislation for some time - there are many good guides describing its content. So I will give a brief outline below and concentrate on the aspects of the law relating to reprography. For a full account Skone James (1980) 'Copinger and Skone James on Copyright' remains the definitive work on UK copyright and is now in its 12th edition. However it is not written for the layman and the fact that the present law is confusing and lacks case law for precedent makes any account written for the legal profession difficult to grapple with. Another substantial and comprehensive work just published, titled 'The Modern Law of Copyright' (Laddie et al. 1980), includes opinion and a good commentary. Gibbs-Smith (1974) remains a brief but readable account published by the Museums Association and thus covering photography, sculpture, painting, etc., as well as dealing with the printed word. A general guide written by a solicitor to cover all aspects of copyright including industrial designs is titled 'A User's Guide to Copyright'(Flint 1979) but inevitably the treatment of specific areas, such as copyright in libraries, is brief. Certainly the best recent guide for people primarily concerned with library and information work has been provided by L J Taylor (1980) 'Copyright for Librarians'. This covers two functions as it incorporates both a very valuable primer for the librarian or library user as to what the law permits and also a thorough account of the background to the present debate on proposed copyright legislation. It includes an account of the present problems, the Whitford Report and reactions, and treatment of special areas of interest such as microforms, computers, audiovisual, etc.

The present Act is not intended to provide monopoly protection in the way that patent legislation does - the inherent idea is not protected and it is accepted that a second person may arrive at a virtually identical result independently. The Gregory Committee pointed out that the 1911 Act was not specific on this point and recommended that: "a point of such fundamental importance should be clearly stated' but no provision was made in the 1956 Act. The Whitford Report (1977) repeated this recommendation for any future legislation.

Works covered by the 1956 Act include traditional items - literary, dramatic and musical works, artistic works such as paintings, sculptures, photographs, works of architecture, etc.- as well as the new technology items such as film, sound and video recording, broadcasts, etc. The development of photo-typesetting techniques is recognized by a specific (though short term - 25 years) copyright in the typographical arrangement of published works as distinct from any copyright in their contents.

No registration formalities are required to obtain copyright - it comes into existence as soon as the work is written or created, which would include by dictation or by direct input into a computer. Works originating in most other countries are given protection in the UK following reciprocal arrangements covered by the two international copyright conventions to which the UK belongs - the Berne Convention and the Universal Copyright Convention.

The normal term of copyright is the lifetime of the author plus 50 years, although for most unpublished works the copyright is indefinite until publication and then expires after a further 50 years. In the case of photographs, recordings, films, broadcasts, etc., the copyright expires 50 years after first publication or broadcast.

The protection conferred by copyright is infringed by copying. The copying need not be exact and it may be in any material form, so that translating a novel or adapting it for stage or film would be an infringement. It is also an infringement to perform a protected work in public, to broadcast or exhibit it - these are known as restricted acts and are fully defined in the legislation.

To claim copyright in a work the author must have expended skill or labour creating it. It must be original, though it need not be novel. Literary or artistic work, in the context of the Act, does not imply a value judgement. A telephone directory is a literary work, a drawing of a machine part an artistic work, etc. Compilations derive protection following the creative work involved in producing them. Indexer (1972) discusses the specific problem of copyright in indexes.

One reason for the complexity of the Act and for the ensuing problems is that many dramatic productions involve a vast range of copyright owners simply because of the range of creative authorship required. Plot, script, design, music, etc., are all interlinked. Add to this the fact that any specific copyright is divisible, in the sense that rights for say adaptation to a dramatic work can be split from rights for say translation; and one can see the need for a great deal of effort to keep track of everything. This specialized area is beyond the scope of this publication and I intend to concentrate on copyright as it affects conventional information transfer and usage. Not that this concept of multiple copyright is irrelevant as illustrations or plates in a publication could affect its copiability in some circumstances and the additional work involved in compiling an index, anthology or encyclopedia will produce the compilation copyright mentioned above separate and distinct from the copyrights in the individual items. Special provisions are made for creations by Government employees

such that the copyright is vested in the Crown, unlike the situation in the United States where such publications are held to be free of copyright. Crown Copyright is described by Pemberton (1971).

Much of the controversy surrounding the present law arises from the exceptions made to the otherwise exclusive rights enjoyed by the copyright owner. The three most important circumstances when doing a restricted act without the authority of the copyright owner does not constitute an infringement are:

- fair dealing
- use of less than a substantial part of the work
- use for the purposes of a judicial proceeding.

The last of these needs no further clarification. Fair dealing is described in the Act thus: "No fair dealing with a literary, dramatic or musical work for the purposes of research or private study shall constitute an infringement of the copyright in the work." Taylor (1980) examines in some detail the relationship between Section 6 in the Act: 'fair dealing' and Section 7: 'special exceptions as respects libraries and archives' and concludes that the fair dealing clause is no defence for the librarian, but only for the individual. The defence of: 'not a substantial part of the work' is available to both. Section 7 allows specified categories of library (most libraries in fact other than those of potentially profit-making organizations such as commercial firms and public corporations) to make for a user no more than one article from any one periodical issue. For non-periodical publications the library has a choice. It can copy a part that is less than substantial, but only an individual can exceed this by claiming the exception for fair dealing. Alternatively the library can, under Section 7, seek the permission of the copyright owner - if he cannot be traced the library can then supply a researcher or private student a 'reasonable part' of the work. The lack of guidance, either from the Act or from case law, as to the meaning of 'substantial', 'reasonable' or of the amount permissible under 'fair dealing' has been one of the major problems. The Society of Authors and the Publishers Association (1965) published a guideline 'Photocopying and the Law' which indicated the maximum length of an extract that the two bodies regarded as not amounting to a substantial part of the work. This limit (a single extract of up to 4,000 words, or a series of extracts up to a total of 8,000 words with no single extract exceeding 3,000 words - with the overall proviso that the total amount copied should not exceed 10% of the complete work) is thus normally applied in libraries. As this exception does not come under Section 7 this guideline is usable by all libraries, not just the specified ones. A later edition of the guideline was issued by the British Copyright Council (1970) but the quantities remained unchanged.

Copying technology and the pattern of copying have changed substantially since 1965. Hardin (1977) has illustrated the potential problem facing scholarly publishing by pointing out that, in the early days of copying, the ratio of copy cost to print cost was of the order of three to one; whereas by 1977 the ratio had reversed to one to two, or perhaps one to four if double page copying was used. By extending his argument to untypical material such as standard specifications, market surveys or tabular data, one can now find ratios of one to ten and higher. Indeed in 1974 the British Standards Institution (BSI) issued a statement through the Library Association (LA) and the British Library (BL) that they were not a party to the 1965 guideline (Hope 1974). Certainly what precedents exist suggest that the courts would consider quite a small amount of a tabular or densely packed item, such as a standards specification, as a substantial amount. How much an individual could copy under the fair dealing section remains unestablished.

An important study undertaken by R E Barker at the invitation of Unesco and the United International Bureaux for the Protection of Intellectual Property (BIRPI) for their discussion by a Committee of Experts in Paris in July 1968 was later published as 'Photocopying Practices in the United Kingdom'(Barker 1970). This includes: (a) an exposition of current UK Copyright Law and interpretation; (b) an analysis of photographic reproduction practices based on a questionnaire survey of some 400 libraries; (c) considerations to be borne in mind when analysing the replies; (d) the writer's conclusions. It should be mentioned that Mr Barker, as Secretary of the Publishers Association, had been directly concerned with the drafting of the 1965 guideline. He argues that the two categories of library should be abandoned as the significant question is whether the copying is done for direct profit. He suggested that commercial copying agencies should pay a levy to a central fund to be apportioned to the copyright owners according to use as established by sample surveys. He concludes that this scheme alongside the existing guideline would provide a reasonable balance of author and user interests. The study includes a post-script describing the conclusions and recommendations of the Expert Committee.

3.3 Whitford Report and reactions

In 1974 a judicial committee was set up under the chairmanship of Mr Justice Whitford to review the law of copyright with specific attention to the current technology facilitating copying of print, sound records and tapes. Obviously the evidence submissions to the Committee provided a convenient vehicle for the concerns of the various interested parties to be set out in a systematic way. Taylor (1980) devotes a chapter to Whitford and includes detailed summaries of the evidence from the major organizations involved.

The Library Association evidence included the following:

- that the making of single extract copies from books and periodicals is essential to the purposive use of all literature;
- that the fair dealing provision should be extended to the educational use of audio-visual material;
- that legal deposit should be extended beyond the printed word to cover films and video, filmstrips and loops, sound recordings and microforms;
- that a realistic treatment of microforms as a text carrying medium, rather than a photograph, should be introduced;
- that the distinction between types of library should be abandoned;
- that wider powers were probably justified for library photocopying because of the greater control that could be applied;
- that the limits of fair dealing should be specified, and should include the permission for the library to make an extra copy for stock, or to complete a a damaged copy;
- that copyright declarations on a blanket rather than individual basis should be acceptable; and
- that the method and amount of payments should be left optional.

The Association argued that there was no evidence that journal article copying, on a single article basis, harmed sales but accepted that authors and publishers should be protected against 'unfair copying'. They stressed the need for information to be widely available and with a minimum of time and effort to seek permissions. They asked that any laws or regulations should be realistic and enforceable.

Aslib, an association of special libraries, etc., confirmed the call for the distinction between libraries to be removed. They stressed the need to avoid delays, to keep administrative procedures to a minimum, and to retain a simple - preferably low - charging structure. (Other comments reinforced those of the LA but I will not in this section repeat earlier submissions.)

The Standing Conference of National and University Libraries (SCONUL) was concerned to stress the interdependence of scholarly libraries, publishers and authors. The principles of individual responsibility and fair dealing formed the basis of its evidence. SCONUL suggested that libraries should act as agents, so eliminating some of the problems relating to for-profit or non-profit working, and that a clear definition of fair dealing was required. As might be expected SCONUL was anxious to facilitate the educational use of materials, including non-book items.

The Institute of Information Scientists (IIS) supported the LA and Aslib submissions. The Institute stressed the need for speed, particularly in the case of scientific and technical literature. It pointed out that such literature was often characterized by lack of profit to the author, reliance of the publishers on advertising revenue, its purpose to spread information quickly and the short period in print. Two particular proposals were that copies should be permissible without reference to the publisher provided they were not then sold by way of trade and that whole works should be copiable if unavailable for purchase. A novel suggestion was that a comparison with patent law suggested that the 'monopoly' of copyright should carry the obligation to make the information in the protected work available to the public!

The British Council pointed to difficulties arising in their operations abroad. The Council for Educational Technology (CET) and the Inner London Education Authority (ILEA) concentrated on problems arising generally in education and with non-book materials. All these are well covered by Taylor (1980) and I have indicated some of the source documents in Section 10. Whitford did not reproduce the evidence submitted but the organizations concerned were free to publish their own evidence, and many of them did.

The British Copyright Council (BCC) is the first of the three bodies I shall mention that put the case for the copyright owners. The BCC argued that there was evidence that photocopying impedes the full implementation of authors' rights and that the best available solution towards securing a fair share of benefits for authors, whilst not interfering with the use of modern technology, was some form of blanket licensing scheme.

The Association of Learned and Professional Society Publishers (ALPS) asked that fair dealing and the privileges of libraries should be defined more closely and that a collection scheme should be set up with compulsory registration of copying machines. The Association pointed to the need for a reasonable increase to the penalties for infringement.

The Publishers Association (PA) suggested that, apart from clarification in the wording, the current Act was satisfactory for periodicals copying (in conjunction with the general licence given by 'Photocopying and the Law'); but that schools copying should be dealt with by a blanket licensing scheme, which could then be extended on a voluntary basis to universities and industry. The Association pointed to the concern being shown abroad over widespread or systematic copying and stressed that retention of the existing restrictions was essential. Some suggestions about the provision of legal deposit copies was included - the Association considered that supplying two copies to the British Library (one for reference and one for loan) should be adequate.

The Whitford Report (1977) was finally published in March 1977. It runs to some 272 pages and is based on 106 formal meetings of the Committee and evidence from 267 individuals and organizations. Some major conclusions that the report makes are:

- that the complexity and ambiguity in the present law needs clarification;
- that 'the fact that education is a good cause is not in itself a reason for depriving copright owners of renumeration';
- that 'unless one simply accepts that it is unnecessary or impossible to control photocopying, the only possible solution lies in blanket licensing' defined as authors or publishers ceasing to be responsible for collecting their own royalties but relying on a central agency to collect at a standard rate and to distribute the revenue to individual copyright owners;
- that such a scheme or schemes should not be defined in the legislation but provision should be made to encourage their introduction by freeing from copyright, after a transitional period, items not covered by the scheme;
- that conflict may arise from the principle aim of the Rome Treaty, namely the free flow of goods over the frontiers within the Community, with the common desire of members of the two copyright conventions to accord recognition to each others' intellectual property rights;
- that a copyright tribunal should be introduced by extending the scope of the existing Performing Rights Tribunal;
- that a general 'fair dealing' right should be introduced, to cover all classes of copyrighted works, defined as that: 'which does not conflict with normal exploitation of the work or subject matter and does not unreasonably prejudice the copyright owner's legitimate interests';
- that the Paris text of the Berne Convention should be ratified;
- that private recording (both audio and video) should be covered by a levy system, similar to that in West Germany, and that educational recording should be subject to a blanket licensing scheme;
- that computer software should be treated as eligible works for protection;
- that crown copyright provisions should be ended;
- that ownership provisions for copyrights should be clarified;
- that various changes should be made to matters relating to industrial designs;
- that the right of 'droit de suite' should not be introduced to the UK.

For the purposes of this study the most significant conclusion was that to do with reprography because, once the proposed blanket licensing schemes are in operation, the report recommends that: 'the present latitude for the making of single copies by libraries under Section 7 .... should no longer apply; nor should Section 6 (fair dealing for the purposes of research or private study) permit the making, even by the student himself, of reprographic (facsimile) copies.'

Initial reactions from organizations such as the Publishers Association were favourable. Not surprisingly the library and information community were less happy. The Library Association (1977) issued an interim statement which stressed the lack of factual evidence relating to the effect of copying on publishers and hence the need for blanket licensing. The Association recommended further studies and suggested that the 'vicious circle' theory that copying reduces circulation which increases prices and so encourages further copying is, as yet, unproven for single article copying; and that any extra licence fees would largely come from fixed library budgets and hence reduce circulations anyway. SCONUL made similar comments about lack of proof and suggested that the proposed scheme would be unlikely to be of any significant help to publications already at risk of closure. The Royal Society (1978) comments included a restatement of their 'fair copying declaration' principle of access to scientific knowledge and argued that restricting fair dealing to hand or typewriter copying could damage scientific research. The Society was concerned that the practical problems and administrative costs of blanket licensing schemes had not been fully considered - particularly in the light of experience abroad. Dr R Wall (1977a and 1977b) made some detailed criticisms and proposed various alternatives - he also suggested that various misconceptions in the report might have been avoided if more direct representation of the library profession had been permitted through actual membership of the Committee. The account given by W Weston (1977) is of interest as Mr Weston was a member of the Committee and as the question of industrial designs was discussed - this includes comments made at a meeting of the Chartered Institute of Patent Agents. I have discussed designs further in Section 7 but a further comment on this aspect of Whitford is given by Solicitors Journal (1977) and a general account by Johnston (1978).

3.4 Does reprography affect journal sales?

Space precludes a thorough account here of what is becoming known as the 'reprography debate'. Taylor (1980) devotes a chapter to this topic and concludes that: "no proofs have been brought forward, on either side of the Atlantic, that single copy photocopying of journals by libraries has any direct influence on library or individual subscriptions to these journals." But he observes that the publishers remain convinced that present library practices and charges are preventing them: "realising their full sales potential."

In the United Kingdom single copy article copying followed the Royal Society (1950) 'Fair Copying Declaration',(which in turn had followed the Royal Society Scientific Information Conference of 1948), and was included as Section 7 in the 1956 Act. But as soon as xerography arrived - the Patent Office Library, now the Science

Reference Library, was one of the first UK libraries to install such a machine in 1959 - the publishers became concerned. I have already outlined, in Section 2.1, the Williams and Wilkins case. This led to no positive decision but the question of 'economic harm' was considered important. In the UK the obvious target for publishers was the National Lending Library for Science and Technology (now the Lending Division of the British Library). Garfield and Sophar (1970) suggested that the legality of the scale of copying at the NLLST could not be assumed as in many cases: "the publisher or author suffers financial loss." Urquhart, the Director of NLLST, and others (1971) replied and concluded that: " ...it is thus unrealistic to imagine that publishers suffer any significant loss due to library copying of such items" and he pointed to the type of copying done and the frequent difficulty of obtaining back issues of periodicals from publishers.

Line, the successor to Urquhart at the Lending Division, and Wood (1975) reported a series of studies and concluded that their service had little effect on the planning of library budgets, though they accepted that lack of the service might involve more copies of the popular titles being sold at the expense of low use titles. Van Tongeren (1976) replied to Line pointing out that the subsidised BLLD service could well undermine the expensive small circulation journals that are the backbone of scientific publishing. He suggested that: "Entitlement to make single copies as a matter of right should be removed from existing law." Line and Wood (1976) made a reply rebutting Van Tongeren's argument but conceding the need for more facts.

Three American studies - Fry and White (1976), Nasri (1976) and King Research (1977) - have been published in the United States. Fry and White reported that up to 1973 some 40% of academic libraries report an impact on subscriptions from borrowing practices. The report from King Research was commissioned by CONTU and formed the basis for their guidelines on reprography. Whitford was also published in 1977 and clearly assumed that copying was affecting subscription revenue though on no strong factual basis. The call for more facts went largely unanswered, because of the cost and complexity of a comprehensive survey, though Aslib (Woodward 1978) looked at the factors affecting the renewal of subscriptions in some 250 libraries. Some 15% felt that interlibrary lending had enabled them to reduce subscriptions without damaging their services. The sponsor of this study was the International Group of Scientific, Technical and Medical Publishers (STM) representing over 100 publishers.

The opening of direct discussions between STM and BLLD was reported by the Bookseller (1976) in conjunction with other developments. By 1981 detailed proposals were announced (Advanced Technology/Libraries 1981) for STM to set up an operation to help the BLLD satisfy requests for journal article copies. Called ADONIS (Article Delivery Over Network Information Service) the project would aim to scan the full text of journals for storage on an optical video disc, using digital facsimile techniques, and then print out on demand. The operation would be set up near the BLLD at Boston Spa with some of the input terminals on BLLD premises. The copies would, say STM, be made available to BLLD at some 75% of their present real cost and there would be some staff savings as well. STM hope that publishers (both consortium members and others) would supply complimentary copies for input which would then be passed to BLLD for physical loan only. BLLD is said to be 'receptive to the ideas' but it seems clear that considerable capital expenditure would be required. Meanwhile the publishers continue to press their case. From Coleman (1977), president of Plenum Publishing to Gros (1980), the concept of the current interpretation of 'fair use' and of 'private study and research' is under attack. Research need not be private but Gros suggests that: "commercial investigation and product development" are better words for much of what is now conveniently called research to gain copying rights.

3.5 Moves towards blanket licensing

As I have indicated the call from the publishers for blanket licensing goes back well before Whitford - Barker (1970) mentioned it and draft proposals for licensing in schools were being put forward in 1975 (Publishers Association 1975). From the viewpoint of authors and publishers the Whitford Report (1977) seemed encouraging but it was clear that a long delay could be expected before new legislation came into force so a move was made to organize themselves beforehand. Publishers tend to want to dominate any collecting operation, operating on the writers behalf if necessary, but the authors sought to protect their own position by setting up the Authors Lending and Copyright Society (ALCS) to act for them. In mid 1977 a joint group, consisting of both music and literary interests and covering publishers and authors, was set up with Sir John Wolfendon as the (neutral) chairman. The authors were primarily concerned with multiple copying in education and a sample survey was carried out in Scotland which indicated the amount of infringement taking place. A difference of opinion appeared in the group in that the authors were prepared to accept a sampling system (as with Public Lending Right) but the periodical publishers were anxious to record all transactions. Some suggestions have been made that the technology exists to fit 'controllers' on copying machines that would capture the required information with minimum inconvenience. The Association of Learned and Professional Society Publishers (ALPS) wanted to deal with single article copying - but this is clearly impossible without changes in the existing legislation. The Music Publishers Association (MPA) withdrew and decided to pursue litigation. Some other publishers also left and the negotiations for a schools licence broke down because of lack of coverage by the proposed licence and the natural lack of inclination for the users to change their present procedures.

A further committee - the de Freitas Committee - has since been set up to investigate the organization required to issue the blanket licenses. One further development from the publishers has been the issue of a further guideline 'Photocopying from Periodicals' by the Periodical Publishers Association (1980). Apart from asking for a copyright statement to be added, if necessary, to all copies this code of practice accepts the present interpretation of the law in a broad rather than restrictive way.

3.6 Green Paper and comments

The Green Paper on Copyright was finally published in July 1981. This is the Government consultative document to comment on the proposals of the judicial enquiry made by the Whitford Committee. The Bookseller (1981) made the best of it with the title: 'Redeemable features' but clearly many were unhappy that four years on from the major review of Whitford: 'we are given a skimpy document which makes few decisions and throws many of the issues back for further public debate.' Taylor (1981), writing in the Library Association Record, describes his impression of a: 'pragmatic, gradualistic approach, very much a political document, informed principally by a need to keep down public expenditure and tackle problems only when they become instantly pressing.'

Some of the recommendations that are directly relevant here are:

- no levy on audio/video equipment/tapes (ironically for the copyright owners the main justification for not recommending the levy is the high rate that would be required to recompense them for 'lost revenue');
- no significant changes to legal deposit provisions (ie Whitford's proposal to include Manchester University's John Rylands Library, of providing some fiscal relief to depositors, and of including deposit of sound and visual recordings is not pursued);
- no suggestion of a general 'fair dealing' exemption to cover all types of copyrighted material;
- no suggestion to do away with crown copyright; and
- no suggestion that fair dealing should exclude single article copying by reprography.

All these go against the proposals made in the Whitford Report and thus represent a retention of the status quo. In general the Whitford proposals would have strengthened the position of the copyright owner. On the other hand the Green Paper announces an intention to tighten existing rules and to ensure that the amended law will: 'ensure that the exceptions (Sections 6 and 7 in the Act) are not used for the purposes of research carried out for the business ends of a commercial organization.' Good news for the publishers but it does seem that the introduction of collective licensing schemes will be made difficult in many sectors because of the retention of the exceptions. For the librarian the possibility of having to establish the end use of information is far from attractive - and very much out of character with their present role in information transfer.

So the debate will inevitably continue but, at the present rate of progress, the final legislation is not likely to overcome the lack of a fundamental reappraisal of the principles and of the rapid rate of advance of the new technology.

4. OTHER COUNTRIES

4.1 Introduction

In this section I cover briefly the NATO countries, plus a few other countries of particular interest. Many countries have made some changes, or at least are considering changes, since Mr Holloway's earlier account of 1970. In particular the Soviet Union has joined the Universal Copyright Convention, Australia has made some changes following the Franki Report and China, settling down after the cultural revolution, is showing interest in the international conventions. For further detail on a summary basis the World Intellectual Property Organization (1979) publication 'Copyright Law Survey' is ideal. This covers most countries - all that are parties to either of the international conventions. Arranged alphabetically, in a loose-leaf format with supplements, it gives summaries of the laws with wording largely based on the legislation itself. The other substantial definitive work on this topic is the Unesco (1956) publication 'Copyright Laws and Treaties of the World'. In Section 5 I cover the effects of the international conventions as well as mentioning the Treaty of Rome.

4.2 Australia

The existing legislation is the Copyright Act, 1968, amended to 1980. Lahore (1976) discusses the Australian High Court decision in the case of Moorhouse and another v. University of New South Wales. The accusation was one of lack of supervision of photocopying by students at the University. The judge was satisfied that the University had been negligent, but the lack of a warning notice on the machine made this no test case for the more subtle aspects of the law.

In June the same year a committee was appointed under Mr Justice Franki to examine the question of the reprographic reproduction of works protected by copyright in Australia. The committee, consisting of four lawyers, reported in October 1976.

Comments and a description of the report are given by Fabinyi (1977), Horton (1977) and Pearce (1977). Taylor (1980) also gives a summary of the recommendations. He points out the specific problems that arise in Australia - a country of large distances and much imported literature - and feels this may have contributed: "...to the overall impression given by the Franki Report that the user is by far the most important of the two parties to be considered."

The existing Australian legislation is substantially the same as the United Kingdom 1956 Act but, during 1980, amendments were passed that incorporated several of the recommendations of the Franki Report. These include that: providing certain notices are displayed and other conditions met a library is not responsible for a user's action if he is in breach of the law; a definition is given of 'reasonable portion' in the context of fair dealing; the introduction of new rules for multiple copying in libraries in educational institutions; and greater freedom to copy for inter-library loans, subject to the requesting library filing declarations to be made available for inspection by the copyright owners. The text of the notice is of interest:

> A copyright owner is entitled to take legal action against a person who infringes his copyright. Unless otherwise permitted by the Copyright Act 1968, unauthorized copying of a work in which copyright subsists may infringe the copyright in that work.
>
> Where making a copy of a work is a fair dealing under Section 40 of the Copyright Act 1968, making that copy is not an infringement of the copyright in the work.
>
> It is fair dealing to make a copy, for the purposes of research or study, of one or more articles on the same subject matter in a periodical publication or, in the case of any other work, of a reasonable portion of the work. In the case of a published work that is of not less than ten pages and is not an artistic work, 10% of the total number of pages, or one chapter, is a reasonable portion.
>
> More extensive copying may constitute fair dealing for the purposes of research or study. To determine whether it does, it is necessary to have regard to the criteria set out in subsection 40(2) of the Copyright Act 1968.

Clearly there is an increase in latitude from UK practice here as more than one article from the same issue may be allowed and there is no qualification of research and study by 'private'.

The Copyright Agency Ltd (CAL), set up to distribute royalties which may reach A$2 million a year, has a lengthy period of development ahead. Most of the 'contributors' will be the various state education departments not easily able to pass costs on or to rapidly find extra money. The scale of fees is to be fixed by court decisions in test cases. (Not relevant to copyright, but very relevant to the financial position of Australian publishers, is the imposition of a 2½% sales tax on books and other printed materials from January 1982.)

(Conventions: Berne and UCC.)

4.3 Belgium

In Belgium the Law on Copyright, 1886, as amended to 1958, makes the copyright of authors virtually absolute - so that in practice a great deal of illegal copying takes place. Eeckman (1976) sets out the current situation in the context of other European countries and Van Leeuw (1976) reports on specific recommendations to deal with reprography. The term of copyright is normally 50 years from the death of the author plus an extension for periods of war. A special law of 1921 introduced a 'droit de suite' provision - this is discussed under France in Section 4.7.

(Conventions: Berne and UCC)

4.4 Canada

A report to the Minister of Consumer and Corporate Affairs by Keyes and Brunet (1977) set out for public discussion the proposals made to revise the existing copyright law, which is the Act Respecting Copyright, 1921. Comments on the proposals are made by Stubbs (1978) convener of the Canadian Library Association Copyright Committee. Some three years later Stubbs (1981) was using as the title of his contribution: 'Moth-eaten copyright law will be revised, someday.' The existing law provides for a term of 50 years from the death of the author and certain fair dealing is permitted. (Conventions: Berne and UCC)

4.5 China

Since the adherence of the Soviet Union to the Universal Copyright Convention in 1973 the People's Republic of China becomes the one major exception to the general acceptance of reciprocal rights through convention agreements. The Cultural Revolution spelt the end of the application of previous Chinese law on this subject but since 1976 attempts have started to create new copyright law. A measure of copyright protection has already been established in reciprocal economic agreements with the United States of America. As a move towards the international conventions China has already acceded to the Convention Establishing the World Intellectual Property Organization. Further details are given by Gotze (1980).

4.6 Denmark

Weincke (1977) describes current legislation and comments on possible changes. Reproduction of works for private use is allowed - this implies single copies of books, periodical articles, and transfer of records to tape. Private use appears to apply to use by industrial firms and other corporate bodies. In 1980 it was reported that nearly £1 million would be paid by the Danish Ministry of Education to copyright owners as compensation for illegal copying by schools between 1966 and 1980. A collecting office, 'Copy-Dan', will undertake the distribution and receive further payments on a continuing basis from the Ministry. Current legislation is the Act on Copyright in Literary and Artistic Works, 1961 (and a parallel Act on Rights in Photographic Pictures, 1961). The usual term of protection is 50 years from the death of the author. (Conventions: Berne and UCC)

4.7 France

Taylor (1980) has pointed out that though the French legislation (the Law on Literary and Artistic Property, 1957) restricts the making of copies, without permission, to private use, a recent case involving the Centre National de Recherche Scientifique suggests that collective use may be permitted if for the purposes of research. An odd complication of the situation in France is that, separate from copyright law, a tax is applied to reprographic equipment and to books, though some educational and scientific books are exempt. The proceeds pass to the Centre National des Lettres and are used for the general improvement of writing and books.

The requirement of 'legal deposit' of published items originated in France in the sixteenth century, it was not until the Act of 1666 that it was introduced to the UK, so it is of interest that an agreement in 1975 has led to audio-visual material being deposited with the Bibliotheque Nationale in Paris.

France (as well as Belgium, Germany and Italy) include in their legislation the right of 'droit de suite'. Under UK law an artist selling a picture will normally retain the copyright so will benefit by royalties from reproductions sold by the new owner(s) during the term of copyright. But if the work itself is sold, possibly at a far greater price than before, the artist gains nothing from the 'added value'. In France however the authors of 'graphic and plastic' works have the right to share in the proceeds of the sale of their work by public auction or through a dealer. The levy is 3% and is only applicable to sales above a qualifying minimum. The right is not transferable in the way that most copyrights are. The Whitford Committee (1977) considered the introduction of this right to the United Kingdom - it is provided for in the Berne Convention but is optional to each country and in fact only a small minority apply it - but recommended against it. In particular they pointed out the expense of collection and that world-wide the total amount collected in 1972 was only £100,000.

The usual term of protection is 50 years from the death of the author plus an extension for periods of war. (Conventions: Berne and UCC)

4.8 German Democratic Republic

The current legislation is the Copyright Act, 1965. Reproduction serving personal or professional interest is generally permitted and short articles already published can be incorporated into a scientific work. There is a legal licensing arrangement to enable documentation services to republish items of a scientific nature. Further details are given by Hubner (1979). The usual term of copyright is 50 years from the death of the author. (Conventions: Berne and UCC)

4.9 Germany (Federal Republic of)

The current legislation is the Copyright Act, 1965. Fair dealing is permitted for strictly personal use but copying for, say, the internal use of a firm would fall within a blanket licence agreement between the Federation of German Industry and the Exchange Association of the German Book Trade. The collecting society, WISSENSCHAFT, has a variety of methods for collecting fees, ranging from a fee paid stamp to be attached to the individual copy to an annual agreed fee to cover an entire agency or organization. The amount left after administrative costs have been deducted is divided into two equal parts - one part is paid to authors' associations for general welfare purposes and the other part distributed to publishers on the basis of the likely level of copying related to each publisher. Dietz (1978) suggests that the amount collected bears no relation to the amount of copying done by industry. Demands for revision from the publishers (including stricter limits on copying for private use and a book trade monopoly of copying of periodicals) are reported by Sinogowitz (1980) and Menzinger (1980).

Provision is made for 'droit de suite' (described under 4.7) and the levy is 5%. The usual term of copyright is 70 years from the death of the author. This is some 20 years more than is the normal practice. (Conventions: Berne and UCC)

4.10 Greece

The present legislation is the Law on Literary Property, 1920. There is no specific fair dealing clause as such, though material from periodicals or newspapers may be republished, in the original or in translation, in another periodical or newspaper unless a special prohibition appears on the work and provided the republication states the source and name of author. The term of protection is 50 years from the death of the author. (Conventions: Berne and UCC)

4.11 Iceland

Current legislation is the Copyright Act, 1972. As might be expected, from the recent date of the Act and the situation of Iceland as a small but well developed country, the fair dealing provisions are comprehensive and include, for example, the making of copies in braille and the public performance of published literary or musical works for educational, charitable and non-commercial purposes. So far as reprography is concerned the making of not more than three copies of a work for private use and the making of copies by specified official libraries or scientific and research institutes for their own use are both permitted. The usual term of protection is 50 years from the death of the author. (Conventions: Berne and UCC)

4.12 India

Current legislation is the Copyright Act, 1957. Closely following current UK legislation many of the uses permitted without payment are similar. Reproduction for legal proceedings and for the purposes of research or private study are permitted. There is a register of copyrights maintained at the Copyright Office, though no formalities are required as such. A Copyright Board deals with disputes and may also grant compulsory licenses in certain cases. A full account of the historical background to the legislation, including some case law, is given by Khosla (1977). The usual term of protection is 50 years from the date of the author's death. (Conventions: Berne & UCC)

4.13 Italy

Current legislation is the Law for the Protection of Copyright, 1941. The right of 'droit de suite' is provided with a levy of 2% to 10% of the increase in value. A full description of this right is given in Section 4.7. The copying of works for the personal use of readers or for the services of a library is permitted. Also, within limits, copying for educational purposes is permitted. Amicarelli (1977) gives an account of the present law and indicates the need for revision. The usual term of copyright is 50 years from the death of the author plus an extension for periods of war. (Conventions: Berne and UCC)

4.14 Japan

Current legislation is the Copyright Law, 1970. Fair dealing is permitted for the purposes of private study and research, including copying in a library for the librarian to supply copies for research. But there are some restrictions and a detailed account is given by Utida (1970). The usual term of protection is 50 years from the death of the author. (Conventions: Berne and UCC)

4.15 Luxembourg

Current legislation is the Copyright Law, 1972. As with Belgium there is no provision for fair dealing in the way of research or study. Provision is made for the right of 'droit de suite' and the levy is 3%. (See Section 4.7 for a note on this right.) The usual term of copyright is 50 years from the death of the author. (Conventions: Berne and UCC)

4.16 Netherlands

Current legislation is the Law concerning the New Regulation of Copyright, 1912. An amendment in 1972 created, as from the beginning of 1973, a fair dealing provision that allows a person to make or order from a library copies copies for his personal study or use. The amount of the item copied is restricted but includes a 'small portion' of a book, a periodical article, or the whole of an out-of-print work. Copying in the public services is subject to more or less the same restrictions as to quantity but payment is prescribed under a blanket licensing scheme via a collecting society, 'Reprorecht'. The fees vary and the rate for schools is only one quarter that for libraries. Industrial and commercial enterprises can, for scientific material at least, join the above licensing scheme so long as the copies made are not passed outside their organization. The United States collecting society - the Copyright Clearance Center - set up a branch in 1980 in the Netherlands to collect for American publishers the fees for copying done in the Netherlands. The usual term of protection is 50 years from the death of the author. (Conventions: Berne and UCC)

4.17 Norway

Current legislation is the Act relating to Property Rights in Literary, Scientific or Artistic Works, 1961 (and a parallel Act on Rights in Photographic Pictures, 1960). Apart from the usual categories such as scientific, literary and artistic works, which have the general term of copyright of 50 years from the death of the author, a further category of works, such as formularies, catalogues, tables and similar compilations of information, exists with a general term of protection of only ten years from publication. Fair dealing is generally allowed to the extent indicated under Iceland (4.11 above), but only a single copy is allowed for private use. (Conventions: Berne and UCC)

4.18 Portugal

Current legislation is the Copyright Code, 1966. Fair dealing is allowed in that public entities, libraries, etc., can copy works for their own use or for the private use of the persons so requesting. Provision is made for the right of 'droit de suite' with a levy of 10%, or 20% on high-priced items. The usual term of protection is 50 years from the death of the author. Rebello (1980) gives a review of the current situation. (Conventions: Berne and UCC)

4.19 Soviet Union

Current legislation dates from 1961, with amendments to cover the accession to the Universal Copyright Convention. The relevant parts of the: 'Fundamentals of Civil Legislation of the Union of Soviet Socialist Republics and the Union Republics' are reprinted, in English, in Boguslavsky (1979). Reproduction for personal use is permitted, as is: 'reproduction for scientific, educational and instructional purposes on a non-profit basis', without need for consent or royalty payment. The usual term of protection is 25 years from the death of the author.

The Soviet Union became a party to the Universal Copyright Convention in 1973. Accounts of visits to the All-Union Soviet Copyright Agency (VAAP), set up to handle all international publishing agreements between the Soviet Union and the West, are given by Koutchoumow (1974) and Lottman (1975). One major Western fear expressed, for example by Schwartz (1975), over the accession of the Soviet Union to the Convention was that the Soviets (already able to make a compulsory acquisition of an author's copyright under existing internal legislation) would be able to suppress or otherwise censor the publications abroad of the works of internal dissidents. Indeed the United States Act of 1976 specifically has a clause to allow copyright protection in the US to continue for an author who has had expropriation of his copyright in his own country. Newcity (1978) covers this in some detail but concludes that this initial fear has little basis - if only because a case against a Western publisher would risk bad publicity when the: "Soviets have a wide variety of methods to punish dissident writers without having to rely on Western courts."

Of more direct interest is the effect of the accession on the publication of Western scientific and technical journals in the Soviet Union. Before the accession, Newcity (1978) writes that some 674 Western titles were being sold by Soviet publishers (20 titles after translation - the rest by photo-offset printing) at a subscription price well below the Western rate. The Soviet authorities had some 919 subscriptions placed for the 270 American published titles involved. From these they then reproduced some 111,000 subscriptions for sale within the Eastern bloc nations and for internal use. (It must be said that the traffic was not entirely one way as, at the same time, some 150 Soviet journals were being translated cover-to-cover and sold by American publishers.) By the end of 1974 the Soviet practice had ceased though they were making strenuous efforts to continue the re-publications on some sort of royalty basis. In general Western publishers were dissatisfied with the amounts offered. Certain journals were simply ordered in larger quantities and presumably used to form the basis of a more widespread photocopying service, relying on the fair dealing provision allowed by the Soviet legislation; Newcity (1978) quotes the number of subscriptions for Chemical Abstracts increasing from 2 in 1973 to over 50 in 1974, and for the Journal of Biological Chemistry from 6 to 40 in the same period. The republication programme may not have been efficient but clearly one component of the Soviet reluctance to increase the number of subscriptions is their wish to avoid allocating 'hard' currency for this purpose. Nurnberg (1975) writing in the 'Author' indicates how Western writers can make the best of the present situation.

4.20 Sweden

Current legislation is the Law on Copyright in Literary and Artistic Works, 1960 (and the parallel Law on Rights in Photographic Pictures, 1960). A fair dealing provision allows archives or libraries to copy for the purpose of their activities and copying for personal use is permitted. Libraries do not pay royalties but instead inform the 'Swedish Fund for Authors' of copies made and books lent. Through the fund the State pays money - a combination of public lending right and copyright royalty. The Whitford Committee (1977) describe an agreement between the Swedish Government and representatives of publishers and authors, concluded in 1973, which allows for a payment by the Government to a publishers' and authors' organization called 'BONUS' to compensate for copying in schools. In 1968 some 150 million copies were made - over

60% from textbooks and only 14% from periodicals and newspapers.

The usual term of copyright is 50 years from the death of the author, though tables and compilations have the ten year term described under Norway (Section 4.17). Unusually photographs are divided into two categories: those of artistic or scientific nature follow the 50 year rule; whereas the rest are only protected for 25 years from the the date of production. There is considerable variation from country to country over the length of this term but it is common to have a fixed term from publication or production date rather than from the death of the author or creator - in the United Kingdom the term for photographs is 50 years from publication. The 'Copyright Law Survey' from the World Intellectual Property Organization (1979) is a useful source of reference for these details. (Conventions: Berne and UCC)

4.21 Turkey

Current legislation is the Law on Artistic and Intellectual Works, 1951. Provision is made for 'droit de suite' with a levy of up to 10%. (A note on this right is given under 4.7.) Various forms of fair dealing are permitted but, apart from copying for personal use, no exemption is made for research, etc. The usual term of protection is 50 years from the death of the author. (Conventions: Berne only)

5. INTERNATIONAL COPYRIGHT

5.1 The Conventions

There is no such concept as an 'International Copyright' but worldwide protection can in effect be obtained through the national laws of countries participating in international copyright treaties or conventions. There are two main conventions: (1) The Berne Convention of 1886 with five revisions - Paris, 1896 - Berlin, 1908 - Rome, 1928 - Brussels, 1948 - Paris, 1971 - and sponsored by the World Intellectual Property Organization; and (2) The Universal Copyright Convention of 1952 with one revision - Paris, 1971 - and sponsored by Unesco. The Berne Convention requires that protection is extended without formalities to works by nationals of any country so long as publication takes place in a country that belongs to the Berne Union. The Universal Copyright Convention requires that a protected work must have been written by a national of a participating country or must have been published for the first time in a participating country. This convention requires less 'protection' than the Berne Convention, for example, the minimum length of protection is set at author's life plus 25 years. The minimum protection for photographs and works of applied art is 10 years. It limits the formalities which any country may demand for protection to a notice of copyright on each published copy, consisting of a specific copyright symbol with a year date of first publication and the name of the copyright owner. The UCC was largely established in the early 1950s because attempts to revise the United States Copyright Law to meet the high standards of the Berne Convention had failed. In particular the formalities concerned with mandatory registration, rather than automatic protection as in most other countries, were not acceptable. The Soviet Union also is, at present, restricted to participation only in the UCC because of a term of protection of only 25 years. Further discussion of this is given by Boguslavsky (1979). The US 1976 Act moved the country much closer to the possibility of joining the Berne Convention - copyright is now automatically obtained without formality.

The other major convention group consists of the Pan-American Conventions but these are not discussed here. A general view from the publishers regarding the present situation in international copyright is given by Barker (1976) in a paper given at the International Publishers Associations Congress in Japan.

5.2 The Conventions and Fair Dealing

Although the prime intention of the conventions is to protect the rights of authors and creators, they do make certain provisions to allow exceptions for 'fair dealing'.

Article 9(1) of the Paris text of the Berne Convention provides that authors shall have the exclusive right of authorising the reroduction of their protected works in any manner or form. Article 9(2) however allows countries to permit the reproduction of works in certain special cases, provided that the reproduction does not conflict with the normal exploitation of the work and does not unreasonably prejudice the legitimate interests of the author. The intention of this provision is that there should be no compulsory licenses in fields in which works are normally exploited; and, if national laws permit copying on any scale without permission in other fields, they should ensure that the author is reasonably renumerated.

The Universal Copyright Convention provides in Article IV(1) that the protection of the author's economic interests should include the exclusive right to authorise reproduction by any means. Article IV(2), however, allows states to make exceptions which do not conflict with the 'spirit and provisions' of the Convention and offer a reasonable degree of protection.

How far national legislation and accepted practices honour the convention is a

matter of opinion and contention. Dietz (1978) commenting on the general use of reprography in the EEC countries describes the situation as an: "infringement of 9(2) of the Berne Convention under which normal exploitation of the work may not be prejudiced by exceptions to the copyright protection." Gotzen (1978) also deals with reprography in terms of the Berne Convention.

5.3 Worldwide information?

1980 saw the publication of the report of the Independent Commission on International Development Issues (otherwise known as the 'Brandt Report' or 'North - South: a programme for survival'). It would be simplistic to suggest that the role of copyright has great significance in the context of the major areas of difficulty but nevertheless the flow of technology to the less developed countries is influenced by the legislation. Concern has been expressed that the arrival of the 'new technology' will remove one of the remaining assets of these countries - a supply of cheap labour. It is to be hoped that information at least will flow freely away from the developed centres of industrial concentration in the 'North' and full advantage taken of improvements in transmission techniques, etc. The ability of networks to provide decentralised information means that the potential exists for providing equal availability of information over vast areas. On a smaller scale Euronet is already attempting to make its user costs independent of distance.

Already the ways in which developing countries gain access to the developed world's wealth of educational, scientific and cultural materials have created significant problems for international copyright. The demands of the developing countries led to the 1971 revisions of both the Berne Convention and the UCC to try to meet the needs of these nations by providing for the exercise of compulsory licensing to permit the translation and reproduction of protected works for educational purposes. Unesco has set up the International Copyright Information Centre to inform developing countries and other nations of the availability of protected works and to help bring together users and copyright owners - this is described by Dock (1975) and Alam (1979). It is also important that automated information systems are accessible to the less developed countries. An early review of the benefits of reprography to a developing country is given by Offenbacher (1971) and Line (1977) describes international lending and photocopying from the viewpoint of the British Library Lending Division.

5.4 The Treaty of Rome

The elimination of customs duties between member states is one of the main objectives of the Treaty of Rome; but, beyond this, wording such as: "The elimination as between member states of quantitative restrictions on the import and export of goods and all measures having equivalent effects" has an impact on the publishing trade. Books are 'goods' and a ruling by the Commission in 1977 confirmed that the traditional methods of marketing based on exclusive copyright licenses defining certain areas are not now available. Mallows (1981) describes the 1977 case which concerned Hemingway's 'The Old Man and the Sea'. Jonathan Cape sublicensed Penguin Books to publish a paperback edition in a territory which included all Common Market countries other than the United Kingdom and Ireland. The Commission objected to this territorial restriction.

The above ruling is of major significance to the book trade but of more relevance to this report are the comments of Dietz (1978) and the problems of Euronet. Dietz (1978) provides a comparison of copyright procedures in all the Common Market countries with a view to future harmonization of legislation. He generally considers that, so far as reprography is concerned, infringement is taken for granted in all the countries. He concludes by pointing to the German and Dutch systems as being the best models, though with additional restrictions applied to copying. He rejects France and Belgium as being too restrictive, in principle at least, and rejects the United Kingdom, Denmark and Italy as being too lax in terms of exceptions.

The setting up of Euronet as the European competitor to the American based networks has focussed attention on the cross-border problems of information systems. One logical development to be explored was the provision of some form of document delivery system to back up the on-line availability of bibliographic services, especially as most of the EEC countries do not have the equivalent of the British Library Lending Division. An investigation of this project was carried out by the Franklin Institute (Gillespie et al. 1978) and various problems were identified. Gillespie suggested that the best solution was the: "Negotiation of licence agreements direct with the copyright owners" as the most advisable permanent procedure. In November 1979 an EEC Workshop on Document Delivery was held in Luxembourg. Virtually the whole session was spent on the copyright issue and, to judge by reports, no real progress made. There seems to have some misconception about the acceptability of the Whitford proposals to British librarians. The discussion inevitably tended to move the publishers and librarians present into two opposing groups. Further details of on-demand publishing are given in Section 3.4 above.

6. TRANSLATIONS

Translation is one of the infringing acts in most legislation but it would normally be considered fair dealing to make a single copy of a work in another language. Commonsense dictates that, as reading and understanding a document are not infringing

acts, it is reasonable to seek to put an unknown language into a form suitable for comprehension. Translation is expensive and hence the possibility of spreading the cost by selling further copies often appears attractive. Mr Holloway (1970) was anxious that the tracing of copyright owners - sometimes the publisher and sometimes the author - should be as easy as possible to encourage cost sharing on a reasonable scale. The International Copyright Information Centre (1979) issues a model contract for the publication of translations and I have mentioned above in Section 5.3 the revision of the Conventions to allow, in some cases, compulsory licenses for translations for educational purposes. The question of ownership of rights may well arise with translations. If the translator is employed for that purpose the copyright will almost certainly be with his employers, but in the case of commissioned works or free-lance work it is important that the contractual details are settled - particularly if there is any prospect of further republication.

One area where advance over 1971 to 1981 has been somewhat disappointing is that of machine translation. Even with the powerful incentive of the vast translations workload of the EEC, the practical potential of operational systems is small. The problems of distinguishing 'there is a nasty jam in that jar' from 'there is a nasty jam in that machine' remain and 'confiture' will not always serve. But at least machine aided translation, as a method of increasing the productivity of human translators, seems to be working well and with the main thrust of current computer development being with small decentralised systems the computer should become a very valuable tool in this area. Possibly the time is not far away when a specialist in a subject area, without linguistic expertise, will be able to make a competent translation with only machine aid. The details of available translations are now often being made available as on-line data bases. Providing copyright clearance has been obtained this should help overcome some of the problems created by the language barriers.

Translation in the more general case, to cover the computer usage of programs, is dealt with in Section 8.

7. PATENTS AND INDUSTRIAL DESIGNS

7.1 Copyright in Patent Specifications

Patent specifications are a very particular type of document. The patent itself represents a monopoly right of exploitation granted by the state as a form of mutual bargain between individual and state. In return for the monopoly right, which is in itself an encouragement to invention, the inventor makes a full disclosure of his invention and, after expiry of the monopoly term, anyone may use the idea. It has thus become accepted that the description (i.e. the specification) should be treated as effectively free of copyright. At the Science Reference Library in London some 340,000 copies of patents were made in 1980/81 from a library stock of over 20 million specifications. Technically copyright in United Kingdom patent specifications vests in the Crown but there is normally no bar on their use - they are effectively published on demand by the Patent Office so the problem of obtaining out-of-print items does not arise. (The Whitford Committee proposed that all existing Crown copyright provisions be brought to an end but this was not endorsed by the Green Paper on Copyright.)

7.2 Industrial Designs

The following section is entirely devoted to United Kingdom practice. This is an area of copyright law of little direct interest to information workers in general, but the pervading effects of design registration justify the space here.

To recap on the principles: copyright protects artistic works against copying but no monopoly is conferred and infringement only takes place if the work is copied; whereas patents protect inventions and confer monopolies which protect all possible forms of article incorporating the invention - even if completely independently derived. 'Intellectual Property' covers copyright and patents as well as the domain between, in the form of designs. In the United Kingdom items which have a novelty in features of shape which are not: "dictated solely by the function which the article to be made in that shape has to perform" may be registered under the Registered Designs Act, 1949. This Act confers a monopoly protection for 15 years. There is no provision under the current Patents Act, 1977, for a 'petty patent' as found in some countries and the Green Paper on Copyright has endorsed this policy.

However an anomaly has arisen for the purely functional items that are unregistrable under the Designs Act. The Copyright Act, 1956, protects three-dimensional copies of two-dimensional works, so any machine part that is derived from an engineering drawing may have protection, under the Copyright Act for life plus 50 years - considerably longer than the term for registered designs. The area where this has most impact, and court cases are under way at the moment, is in spare parts production for the motor industry.

The recommendations of the Whitford Committee (1977), which was far from unanimous on this point, suggested incorporating protection of the aesthetic elements under the general law of copyright, without any formality of registration or deposit, and with a term of 25 years. Their views on dealing with the strictly functional items varied from no protection at all to protection for 25 years as above. Discussion by patent

agents on these recommendations is given by Weston (1977) and a general account of design protection by Johnston (1978).

The Green Paper on Copyright confirmed the Whitford proposals so far as the aesthetic elements are concerned but supported the minority party of the Committee that the purely functional should not be protected against copying; and that unless it attracts patent protection it should not be protected at all. The Green Paper justifies this by pointing to the lack of similar protection in other, competing, countries and points to the need for an industrial society to be active and competitive. The term of 25 years for aesthetic items was accepted and Whitford's proposal to repeal the Designs Act was put to one side - on the grounds that further investigation is necessary and that such a registration scheme may anyway be required as part of a unified approach to the problem by the European Economic Community.

7.3 Drawings associated with Patent Specifications

Derived protection of three-dimensional objects because of original drawings has potential effect on the term of a patent. Following the Patents Act, 1977, the term of protection was extended to 20 years - still much less than the copyright protection term of life plus 50 years. Many drawings related to patents are schematic, but it is quite possible that the product developed from an invention may be a recognizable copy of the drawings with the specification or of other existing drawings related to the invention. It has been suggested that the use of copyright in this way has the effect of resurrecting the patent monopoly even though the invention should be in the public domain.

The Green Paper accepts that this is not a satisfactory situation and states that legislation will be considered to ensure that: "the manufacturer of a product, the copyright in which is derived from drawings associated with the invention in a published patent application or patent, shall, when the patent has expired, lapsed or been revoked, or the application has been withdrawn, be treated as if he were the holder of a licence granted by the copyright owner." (Whitford Committee 1977, p60-61.)

8. SOFTWARE PROTECTION

8.1 General

Although dealing with reprography in an equitable way is proving difficult it is arguable that grafting software protection onto copyright legislation is likely to be a problem of a different order of magnitude. We can cope with the concepts of the printed page, and the copying of it, with no great difficulty despite the two extremes of say a novel by a famous author and a telephone directory; because the pattern of use is substantially similar. Ostensibly a computer program, in the form of a printed listing, is the same; a created work in a tangible form. But when applied to a computer the complexity increases because the program controls the machine and, perhaps in conjunction with other input data, actually does something - such as to create output. Hence we are concerned with protection in three (frequently blurred) areas:

- the computer program;
- the input data; and
- the output.

Nimtz (1979) provides a general overview of the development of software protection law and it is relevant to examine other forms of protection outside copyright law. Kuhn (1978) refers to the use of copyrights, patents and trade secrets as the three main legal procedures. Niblett (1980), writing as both a barrister and a professor of computer science, mentions additionally trade marks and the present generally preferred procedure - contract law. Both refer briefly to theft but, under UK law at least, theft must be of a tangible object so memorising a program and using it is not stealing. Niblett (1980) includes a useful comparison chart of the various methods. He points out the shortcomings of trying to gain patent protection: it is relatively expensive especially if wide coverage is sought; it is limited to a 20 year term; it requires full disclosure at the outset; and in general national patent legislation does not encourage program protection. Avoiding the use of patents might allow a competitor to patent a similar program, but at least an existing user would be able to continue use though not to exploit it further.

The law of confidence or 'trade secrets' can be useful in providing some protection to ideas or concepts that are too broad for copyright protection. The UK law provides a civil remedy for the unauthorised disclosure or use of information when an obligation of confidence has been expressly or implicitly imposed. Turner (1962) and Law Commission (1974) provide information on this method of protection in the UK.

Trademarks do not have a great deal of relevance but do at least have an unlimited lifetime. Contracts are, in the eyes of the industry, still one of the best means of protection particularly for large commercial software packages with a maintenance element. Niblett (1980) includes an example of an ICL Program Product Licence. Copying for back-up storage is normally permitted and payment can be negotiated as say a lump sum, instalments, or usage based as a form of royalty.

Nevertheless copyright remains an attractive method of obtaining software

protection. It has immediate effect worldwide; it is cheap; and it provides reasonable damages in the event of infringement. Various problems do arise - in particular the need to be sure that national legislation does cover programs in machine readable form, but also to establish what the infringing acts are in the context of computer usage. You may not copy a cookery book, but you can work the recipes without thought of royalty to the author. In general terms a program is a similar set of instructions; but using it to work the computer may well involve internal 'translation or copying' of some form or other. Current copyright legislation was not drafted to envisage a literary work being used to control a machine. And having used the machine how far should the author of the original program expect any rights in the output?

A description of the position in the UK is given by Perry (1981) as a paper presented to the Chartered Institute of Patent Agents. The extent of the problem in terms of infringement can only be estimated. Surveys in the UK suggest there may be three to five copies made illegally for every legal copy - so far as microcomputers are concerned anyway; and in the USA estimates suggest perhaps $12 million to $36 million out of a total market of $200 million. Technical methods of preventing copying seem unlikely to succeed because it must be possible to make back up copies and because much of the abuse is with the home computer market where technical prevention measures are considered a good challenge to the amateur. Sadly the consequences of massive piracy or misuse will include a reduction in the range of software available, increases in prices and lack of further product development.

8.2 The National Commission on New Technological Uses of Copyrighted Works (CONTU)

In the United States Section 117 of the current Act of 1976 in effect carried through all provisions and previous rights relevant to software from the previous legislation of 1909. This was an interim measure to allow the National Commission on New Technological Uses of Copyrighted Works (CONTU) to make its investigations and report. Discussion before the Act had suggested a fear that the blanket imposition of existing copyright concepts to the then emerging fields of information retrieval, networking and machine translation would stifle or impede research. Authors and publishers tended to the opposing view so it was decided to defer any immediate decision pending an investigation. Weil (1975) describes this development.

Two sub-committee reports appeared in 1977, one covering data bases and the other programs. The final report, (National Commission on New Technological Uses of Copyrighted Works 1978), appeared one year later. The Commission was seeking to adopt recommendations that would: "encourage the development and dissemination of useful stores of information and to make this information readily available to the public." The specific recommendation was that the law should be amended:

1) to make it explicit that computer programs, to the extent that they embody an author's original creation, are proper subject matter of copyright;
2) to apply to all computer uses of copyrighted programs by the deletion of the current section 117; and
3) to assure that rightful possessors of copies of computer programs can use or adapt these copies for their own use.

One significant dissenter from the corporate view was the novelist John Hersey who was a member of the Commission. His views (Hersey 1978) concentrated on the philosophical aspects of broadening the scope of copyright protection to machine programs that communicate only with machines and he suggested that the protection of such programs might have an undesirable effect on the national culture. One other member supported him and Breslow (1977) adds additional weight to this point of view.

The need for clarification became clear when in 1980 a United States District Court ruled that a computer program incorporated into a 'read only memory'(ROM) was not covered by copyright. The decision implied that any software in a form that cannot be seen and read by the human eye is not copyright protected, and was based on common law and the Act of 1909. The 1976 Act was held not to apply since it makes exceptions for automatic information systems, but the judges took the view that, in any case, the Act's protection would not cover programs in which the instructions are incorporated into the mechanical device they control. The inherent stages of programming provide a major complicating feature - estimates suggest that the cost in man-hours of a complete program can be divided into three roughly equal parts: (a) the conceptual or systems analysis; (b) the coding, which takes place at several levels and may be partly done by machine - and which may not be directly human understandable; and (c) the 'debugging' to test the complete program and remove the errors. Many complex programs are in turn built on a modular basis which further complicates the copyright issues involved. Iskrant (1970) has written on the multiple forms that programs take during use and Stern (1981) indicates that the situation regarding ROMs is still far from clear in the USA.

The necessary law to implement the CONTU recommendations was passed in 1980. Lawlor (1979) has argued that in some respects the previous law was to be weakened but at least the vital need for back-up copies of magnetically stored material was recognized. Such copies must be destroyed if: "continued possession of the program should cease to be rightful." The law also establishes that any copies or adaptations required as an essential step in utilizing the machine are allowed as CONTU were anxious to establish that a legitimate possessor of a copy of the program should be able to fully use it for the intended purpose. The work does not have to be registered at the United

States Copyright Office to be protected; it is protected once it is: "any tangible medium of expression." Programs have, in fact, been accepted by the US Copyright Office since 1964. Keplinger (1980) indicates that practice in other countries is as follows: France, Brazil and Poland all directly exclude programs from patent protection, but the position is not fully decided in Germany. Austria, France, Germany, Japan, and Italy all seem to have confirmed copyright as the appropriate means of protection though there is still a marked lack of judicial decisions. Further information can be found for: Australia in Catterns (1973) and Lahore (1978); Belgium in Buch (1976); Federal Republic of Germany in Kolle (1973 & 1976) and Ulmer (1971); Italy in Galtieri (1972); and Japan in Doi (1973).

8.3 United Kingdom position

In the United Kingdom the Whitford Committee (1977) examined the situation. The existing legislation - the Act of 1956 based on the Gregory Committee report - had not taken account of the problem, as it hardly existed then. The Banks Committee, which led to the Patents Act, 1977, reported in 1970 that computer programs should not be patentable and this policy has been confirmed by the 1977 Act and by both the European and Community Patent Conventions. Whitford recommended:

1) that all computer programs and other items of computer software should be treated as works and that there should be no need to prove a program eye-readable or directly understandable;

2) that the existing restricted acts were adequate, e.g. translation, copying, reproduction, etc., but that: "the storage of computer programs, or of any other copyright material, in a computer store should be a restricted act.";

3) that the protection term should be the usual life plus 50 years - (some authorities had suggested a shorter term would be appropriate);

4) that the output should be the copyright of the person(s) who devised the instructions and originated the data used to control and condition the computer to produce the required result - if necessary as a form of joint ownership;

5) that unauthorised 'use' of computer programs to control or condition the operation of computers should be an infringement (this was taken as a majority decision to make protection as certain as possible); and

6) that a voluntary register of computer programs should be established.

Taylor (1980) mentions two responses to this section of the Whitford Report. The University of London Library Resources Co-ordinating Committee complimented the Committee on its handling of the problem but wanted to extend the protection to the principle of a program. However this comes back to the definition of copyright and how far it can be extended to cover ideas. The Royal Society was less impressed and considered the computer should be regarded as a mere tool: "in much the same way as a slide rule" and they disagreed with the recommendation that copyright protection be extended to computer programs or the input of data such as statistical data or maps.

One matter of concern to many people was the suggestion that the writer of the original program should be part copyright owner of the final output of any use of that program. In some cases this might be appropriate but, especially where the program is sold outright as a package or used solely to manipulate the local data, normally this would be inconvenient or even unacceptable. The United Kingdom Green Paper on Copyright (1981) recognized this and recommended that a different approach was adopted. Whitford saw the computer as a tool in itself, whereas the Green Paper takes the programmed computer as an entity and suggests that the person responsible for operating it and running the data will create the work - thus the rules of creation by employees become relevant and, normally, the copyright would be with the employer which seems very reasonable. The Green Paper also suggested that Whitford was too restrictive in terms of the copyright owners powers to control the program use; and suggested that all that was required was control of the initial loading, unless greater control was sought through some form of contractual arrangement

The question of ownership is of interest because CONTU were specifically asked to investigate the direct computer authorship of works. Risset (1979) covers this in detail. CONTU recommended that by applying conventional copyright principles a human author could always be found, perhaps as a combination of a programmer, the program user and the person who reviewed the output. CONTU admitted that developments in artificial intelligence might finally require a re-appraisal. Certainly the possibilities inherent in machine translation and expert systems - especially those of a concensus variety where essentially the decision making ability of an extensive body of people is being distilled - mean the time may not be so far off. Computer composition of music is an interesting example of the possibilities, though current success must depend on individual taste, but usually some degree of input and selection of output is applied by the operator.

The Green Paper met with a mixed reception. One barrister, who specializes in this area of the law, commented that: "this is the first time I've seen any thoughtful views coming out on the interaction of copyright with computer programs." Whereas a data base producer spoke of a: "total lack of appreciation of the problems of handling

data in machine readable form."

I shall move onto the data base aspects in Section 8.4 below but, before leaving program protection, it is worth mentioning that microcircuit chips - their topography or patterns - require protection. Edwards (1979) describes the need to ensure that photographic masks and imprinted patterns are fully protected as 'pictorial, graphic or sculptured work' so far as United States legislation is concerned.

8.4 Data base protection

The UK Green Paper on Copyright suggests that the display of works extracted from computer storage on a visual display unit (VDU) is analogous to opening a book at a particular page, and therefore not an infringement. Whereas a hard copy print out may apparently constitute an infringement. In practice it is clear that the large on-line data bases, through the 'host systems' which provide the service to users, are relying primarily on contract law, in the form of licenses, to ensure control and an adequate financial return on their products. CONTU also suggested that when a conventional copyrighted work is input into a computer-based information system it should continue to enjoy the same protection. Information could be retrieved from the data base and used - a citation, a chemical formula, an expression - but the user could not retrieve a substantial part of the date base without infringing the copyright. Thus practical use on a large scale must be by permission or licensing agreement. The major fear, with some justification, of the producers is that, having based their charges on a connect time basis, the users will arrange, with the aid of intelligent terminals and the like, to off-load substantial and relevant parts of the data base for later multiple searches. Obviously, with the development of communicating word processors and the convergence of all this equipment so that word processors can act as terminals or hold data bases, this is a use that will be required - more and more users will wish to retain the information in machine readable form and link it with local information, etc. Holmes (1980) covers this question of the re-use of machine readable data and Neal (1980) considers the general aspects of protection of data bases. The question of charges is a crucial aspect affecting the development of these systems.

Charges are in important factor while we are in the present dynamic phase of expansion of on-line information services that are still, to a large extent, based on existing printed publications. If use of the automated form destroys the viability of the printed services the lost revenue must somehow be recouped. So the use of local records based on cheap capture from an external data base, though quite logical, must be properly paid for. In some cases charges may be waived, e.g. the British Library does not normally charge for the copying and re-use of BLAISE bibliographic records for local use, so long as they are not then used for some charged use. Trubkin (1979) discusses the idea of fair use versus exclusive rights for the copyright owner. Squires (1976) looks at the whole question of copyright and compilations in the context of computers.

Input has also posed problems but, on both sides of the Atlantic, it seems clear that copyright material would need permission to load, unless fair dealing could be claimed; and in that case the reasons for loading and ultimate use would be relevant. The loading of title/author information taken direct from periodicals would appear reasonable, whereas the same information taken from a copyrighted indexing journal would not. Whatever job is in hand the advantages of having available suitable data in machine readable form are manifest, but recent developments in the technology, impressive and valuable as they are, are unlikely to reach their full potential until the copyright-of-input problems are cleared up and suitable charging agreed.

A further problem with on-line data bases is their use across national boundaries. Bloom (1977) describes some of the legal problems relating to EURONET and I have already touched on this briefly in Section 5.4 above. Fortunately the automated systems do have the potential of 'in-built' recording of transactions to an extent that would be administratively prohibitive with conventional systems, so there does seem to be no practical problem in negotiating adequate royalty payments. Gibbs (1980) describes document ordering through Lockheed's DIALOG and SDC's ORBIT services - any copyright fees are paid as a surcharge.

In the United Kingdom the use of the viewdata service, PRESTEL, is of interest. Initially this appears to have been envisaged very much as a VDU based service, but it is now available with printers for hard copy and adaptors are sold that enable the service to be interfaced with microcomputers. This allows for its use for off-loading telesoftware as well as straightforward data capture for local use - as well as use for electronic mail or teletex. The copyright problems in dealing with such a proliferation of use, particularly as information is input by a large number of 'information providers', are considerable.

8.5 Computers and International Copyright

As always it is the national legislation that is of prime importance but internationally there is a move to seek some degree of harmonization as with the eligibility of programs for patentability. Pagenberg (1974) discusses early developments. A series of model provisions (World Intellectual Property Organization 1978) were drafted and are discussed by Perry (1979) and Niblett (1980). In December 1980 a Committee of Governmental Experts on Copyright Problems Arising from the Use of Computers for Access to or

the Creation of Works was convened jointly by Unesco and the World Intellectual Property Organization (WIPO) in Paris. Some 34 countries took part and a further 13 international organizations attended with observer status. The Committee agreed that the owner of copyright in works produced by computers can only be the person or persons who produce the creative element. However the drafting of any detailed recommendations was remitted back to Unesco and WIPO. It is hoped that their draft will be considered by a Second Committee of Governmental Experts to be convened in 1982. The monthly publication from WIPO 'Copyright' has reported this meeting (Committee of Governmental Experts.... 1981) and generally covers changes in legislation and other news from member countries as well as matters relating to the conventions. A detailed account of the present situation as regards computer software protection in relation to the two conventions is given by Kinderman (1981). He concludes that machine readable programs should not be regarded as excluded from the copyright conventions.

8.6 Audio and Video Recording

This topic fits conveniently in Section 8 as the tapes and other media of recording are commonly referred to as the 'software'. As yet they have had little impact in the area of information transfer except in education. Nevertheless the potential is there, and the technology of the video disc will bring the convergence of 'entertainment' and 'serious' nearer. I am still very much a believer in the book, more or less as we know it today, but it is clear that the continuing reduction in the real cost of computing power, coupled with the pervasiveness of television and the potential of viewdata and telesoftware, will mean a radical change to our pattern of behaviour during the next decade. Conventional television requires a passive viewer and is transitory (many would say ephemeral), but full application of the new technology implies an interactive and user-controllable system, in the home or the work-place, that caters for information, education and entertainment. So it is as well to examine the first moves towards defining the boundaries of copyright in this area.

In America Universal City Studios has taken to court the Sony Corporation of America to obtain a ruling on the copyright consequences of the home uses of video recording to record broadcast copyrighted television programming. The court initially found that such use was not an infringement of copyright. The principal issue was fair use in terms of Section 107 of the 1976 Act; harm to the plaintiffs; the nature of the copying and the material; the purpose of the use; and the substantiality of the copying. Reiner (1979) analyses the fair dealing aspects - the court said that non-commercial, in-the-home use of copyrighted works was consistent with the First Amendment policy on public access to information. The decision was limited to off-air taping of free broadcast material where no contractual relationship exists between copyright owner and user but Keplinger (1980) suggests there may be wider implications, such as the use of software with home computers under the fair dealing umbrella. One important feature of the case is that it has now been in progress some five years - so that arguments about the effect of the recording on the market for the plaintiffs products might be substantially stronger now because of the development of the massive sale of pre-recorded tapes. Stevenson (1981) reviews the case and compares it with the situation in the United Kingdom. He suggests that the private individual might be in breach of the law, but it is unlikely, judging by recent cases, that a charge of 'authorization' against the company selling the recorders would be upheld. However by October 1981 the case had reached a Federal Court of Appeals in California with a ruling that companies which make and sell home video recorders in America are liable for damages if the machines are used to record copyright television programmes, even if only for private use. The court ruled that copying televised broadcasts of copyright materials by owners of video recorders in their own homes for private non-commercial use constituted infringement and unfair use. The case has been sent back to a US District Court which is to consider damages and an injunction against the defendants. But, touching as this does on one of the thorniest issues facing the entertainment and consumer electronics industries, the case is likely to go to the US Supreme Court for a final ruling.

I shall not try to include the implications of copyright law to record and video tape collections and picture or audio-visual collections in libraries. Miller (1978) describes the licensing of libraries in the United States to videotape films. Crabbe (1976) discusses the effect of copyright on the audio-visual library in the United Kingdom.

In the United Kingdom the Whitford Committee (1977) were concerned with the extent and growth of infringing recording in private such that copyright owners were unable to exercise their rights. The Committee recommended a levy system, similar to that in Germany, to apply to the sale of all equipment of a type suitable for private recording. A statutory tribunal would be given jurisdiction over the rate of the levy, its application, and the distribution of the proceeds between collecting societies representing different categories of copyright owner. One present problem area is the educational, often non-profitmaking, use of recording. The Whitford Committee suggested that an annual licence fee, additional to the levy, to give blanket recording rights would be appropriate. Only in the case of true commercial exploitation of the recordings would conventional single licences be negotiated. As yet video recording is in its infancy and the tape cost is high - so much of the use is simply aimed at 'time-shifting' programmes to watch when convenient. However this is an area of new technology of vital concern to the copyright owner as a full length feature film can be copied for about one quarter of the sale price of a video version, whereas no one would copy a paperback novel in its entirety simply to save money! The Green Paper, published in 1981, suggests

present usage does not involve extensive copying other than off-air, because of the limitations of the equipment available. On the other hand one can see the number of users increasing very rapidly and it seems likely that linking two machines together for copying could well become common. So far as audio recording is concerned one can already obtain machines with double cassette mechanisms which are clearly being sold on the basis of facilitating tape-to-tape copying.

The Green Paper on Copyright (1981) provides more discussion on tape copying and gives figures relating to audio recording which suggest that a levy of £1.40 on a tape cassette (which would more than double its present cost) would be needed to retrieve the £50 million that the industry estimate is lost due to infringing recording losing them sales. However this figure cannot be precisely quantified and in fact the Green Paper concludes that there is a lack of convincing evidence that the levy would be an acceptable solution and so they recommend further debate - even then: "at the end of the day it may have to be accepted that there is in fact no acceptable solution." This conclusion, which was admitted to be partially reached because of the need to avoid recommendations which might be inflationary in the present economic situation in the United Kingdom, has been extensively criticized and it is clear that the audio and video industry will continue pressing for some return from this potential source of royalty from copyright works. Ficsor (1981) comments on the home use defence for copying; he points to the 1965 Stockholm Revision (of the Berne Convention) Conference where, in the preliminary stage, a Committee of Governmental Experts drafted: " it shall be a matter for legislation in the countries of the Union .... to permit the reproduction of works for private use ... " in conjunction with other recommendations. In fact this wording was dropped at the Diplomatic Conference proper, though by the Paris Act of 1971 a general statement: " ... reproduction of ... works in certain special cases, provided that such reproduction does not conflict with a normal exploitation of the work and does not necessarily prejudice the legitimate interests of the author." had been incorporated. Ficsor argues that it was the right decision to preclude an automatic right of home-copying as the development of such extensive home use of recording equipment as a mass phenomenon could hardly have been foreseen and: "does conflict with normal exploitation." He writes from Hungary where legislation is proposed to apply a levy on recording media such as tapes and cassettes; this is following the lead of Germany, where a levy is currently applied to the purchase of equipment and may be extended to tapes, and Austria, where a levy is currently applied to tapes and cassettes.

9. CONCLUSION

I have tried to indicate the main developments during the last ten years, largely by tracing progress in the United States of America and the United Kingdom. In many ways the situation is no clearer now than in 1970 - even the US law, approaching a mandatory review, does not seem to have been accepted as a final solution. The timescale of changes to UK legislation is uncertain but likely to be prolonged - no official time-limit has been set for the receipt of comments on the Government Green Paper on Copyright, but it seems at least a full year will be allowed for submissions. Harmonization of EEC law seems a worthwhile project but the one aspect currently under review - term of protection - is likely to drag on as most of the member countries already have the same term and Germany, which allows 70 years from the death of the author, is unwilling to change. Davies (1981) discusses the scope for harmonization and it does seem that the changes in patent law within the Community during the last decade have pointed the path forward. In the United Kingdom the publishers seem entrenched though the Green Paper, criticized by both copyright owners and users of copyrighted materials, has shown signs of encouraging librarians and publishers to meet to clarify what the common ground is and what remains to be debated. A recent legal development available to copyright owners in the UK is the 'Anton Pillar' order which allows the legal representatives of the plaintiff, after obtaining a court order, to make an un-announced search of the defendant's premises - in cases where the court considers there is a real likelihood of incriminating documents existing, and being destroyed before the case is heard. More than 100 such orders have been applied in the UK but usually in connection with record or tape 'piracy'.

There does seem to be some hope of improvement in the situation for the publishers. The growth of the use of the new technology in the home is one current problem and Ficsor (1981) has suggested that any prohibition or attempt to monitor would constitute an intolerable intrusion into the privacy of the home. So if 'fair use' is ruled out as a defence then some form of blanket levy on equipment and/or tapes seems to be the only solution - and as we have seen is already in use in some countries in Europe (Section 8.6). The use of on-line information systems allows a diversification of product for the publishers plus the ability to retrieve records of usage cheaply and accurately, though trends towards data capture for continued local searching or incorporation into in-house data bases must be charged on an adequate basis.

The main arguments against blanket licensing for reprography would seem to be that the popular and well used, and hence already fully viable, journals would be supported at the cost of the more specialized, low use, titles. This is because libraries, largely working on fixed budgets, would tend to rely more and more on obtaining copies as required from systematic centralized copying operations, such as the British Library Lending Division, and would pay for this by cancelling subscriptions for low use material. The proposals for ADONIS (described in Section 3.4) are a major step forward for the publishers showing that they are prepared to consider 'publication on demand',

taking into account the developing technology, rather than sit back and observe the need being met by libraries and then expect to add a further levy on top of the already considerable xerox cost. Developments in video disc technology - a spin-off from the consumer market though current projections of use for home entertainment do not seem very encouraging - coupled with the trend towards decentralization of computing power may lead to a new pattern of publication: video discs sold as complete 'back runs' of data bases with up-dating, carried out via tape supplement or dial-up data capture, held in the local computer memory. This would help to overcome the limitations that lack of capacity of the communications networks might otherwise slow development of centralized systems based on dial-up facilities; and at the same time provide a new market for publishers analagous to the present one-off sale of items. A general account of the potential effects of printing on demand is given by Freedman (1978).

The ADONIS project is also of importance because, although currently based on a mechanization of an existing system, it could lead to a radical change to the concept of the scientific or technical periodical. At present a simple analysis shows two distinct uses: 1) current awareness where the whole journal, obtained specifically on the basis of its overall coverage in relation to the interests of the reader, is scanned regularly; and 2) retrospective searching where almost certainly a preliminary search will have been made using printed or on-line bibliographic tools followed by a collecting of copies of the relevant source documents from different periodicals. Such copies may come from an outside source, from his local library service or even from his own collection of back-run material; so that in effect a new work of compilation, based on the particular profile of the user's interest, is constructed. The logical development of ADONIS, once indexing, searching and ordering are all available on-line, would be to enable users to construct, order and receive such compilations rapidly - say in the time currently needed to receive the result from an on-line search where the citations are printed off-line. Indeed in urgent cases the full articles could be transmitted over the communications network to suitable digital facsimile machines, or even possibly to standard terminals equipped with printers able to cope with high resolution graphics, as there would be no need for two way facsimile transmission. By the time that the hardware of the system is fully in operation it is possible that optical character recognition techniques will have improved to allow machine readable coding of the text already stored as a digital scanning - this would then allow text transmission to any conventional terminal, though not of course any accompanying graphics.

Such a development would enable the publishers to reconsider the format of the journal for current awareness. Cheaper paper and greater use of the synoptic format would be acceptable because of the easy availability of the back-up material - indeed, with thoughts of the 'un-photocopiable journal' in mind, use could be made of limited-life ink to stress the ephemeral nature of this phase of the publication. Some would argue that usage would leapfrog this step to rely entirely on user-profiled selection - the user would regularly scan on his VDU current abstracts selected by his interest profile, choose and select the full papers required and so receive a fully tailored package that might or might not be similar in content to a published title, though one would expect it to be about the same size. These could be distributed electronically, but I still see a good future for the printed word, if only because of the load carrying limitations of the networks. Certainly a shift to local printing at the work-place will become commonplace and some form of easy recycling of the paper or other print carrying medium may well be developed. Lea (1979) discusses alternative methods of journal publishing and Katzenberger (1978) looks at the copyright problems from the viewpoint of editors of scientific journals. All this should be satisfactory to the publisher, so far as negotiating satisfactory returns is concerned, and to the user, in terms of facilitating research. True user satisfaction will also depend on the improvement of VDU terminals from their present rather crude state of development; the use of simple voice commands, audio responses, colour and control techniques other than a typewriter keyboard - some of these are already being developed from games or military applications - should improve the man-machine interaction considerably.

But what of the authors? It is all too easy to see only the views of the publishers, particularly when writing in the United Kingdom where copyright has developed alongside printing, not as an author's right per se. So far as fully creative, in the cultural sense, works are concerned it is far from clear how changes in the copyright system, or its implementation, would help any struggling writer before he has made his mark; whereas the best-selling writer, with a package of rights for sale to film, television, etc., may have more concern over national taxation legislation than copyright laws. Many countries already seek to encourage the developing writer by other means: literary competitions; grants; commercial sponsorship for the arts; 'writers-in-residence'; and even of course the complete state support established in communist societies.

Where authorship of scientific and technical works is concerned there is a greater need for a re-appraisal of the basic concept of authorship because of the impact of the new technology. Initially copyright developed in relation to the need for printing monopolies, and it was not until the time of the French Revolution that the idea of an author's right 'the most sacred of properties' became established 'on the natural order flowing solely from the fact of intellectual creation'. It seems likely, therefore, that the applications of the new technology to publishers can be coped with, but I am less sure that the basic concept can cope with changes to the pattern of creativity. The 'electronic journals' now being explored in several countries have as much to do with innovation in authorship as changes in distribution method. The facility of simultaneous review of text by a group of (perhaps geographically distant) co-authors, the

facility of rapid complex text changes, the facility of preview to a wider group for preview and further proposals for change, the easy assimilation, on a modular basis, of earlier work, and so on, will make the concept of individual authorship harder to define. As the Green Paper has it: "It must of course be recognised that in practice a single individual may constitute two or more of these three persons." when dealing with computer usage. Copyright does not aim to protect ideas, so if the fixing of ideas in a tangible form is made a simple, quick, and group activity then the concept of individual author's rights will be hard pressed to cope. We can but wait and see how quickly and extensively the electronic journal develops. Visscher (1977) writes of the impediments to scientific communication in the context of reprography. McElroy (1980) writes of the use of photocopies affecting scholarly communication by depriving authors of potentially valuable contacts, as found when direct requests for off-prints are made. The electronic journal, coupled with electronic mail, may well provide the reverse - too many contacts!

Finally I shall return to my comments in Section 5.3 about 'worldwide information'. The Brandt Report referred to the 'interlocked welfare of nations' and it is clear that the way copyright is applied is one small, but important, factor in the moves towards transforming world society into one more compatible with its longer term interests of harmony and progress. Two thirds of the world is not yet industrialized, but the economic well-being of all nations now requires healthy markets worldwide. The Developed Countries account for some 96% of the world's spending on research and development and the Brandt Report stressed that the efforts of the developing countries towards greater technological self-reliance need to be fully supported through international co-operation:'the acquisition of technology is crucial not only to growth, but to the capacity to grow.'

So far the thrust of pressure from the Less Developed Countries has been towards the need for works for education, for example, the need for compulsory licenses to oblige authors to release their rights for educational purposes in the developing countries subject to payment of reasonable fees. The Paris Revisions of 1971 to the Berne and Universal Copyright Conventions provide the basis for the granting of compulsory licences to translate or reproduce works published in developed countries for use in developing countries when a voluntary licence cannot be obtained. The aim is to cover the needs of teaching, study and research in all fields of education - a sort of global fair use clause - and I suggest there may well develop over the next few years a a call to cover the specific needs of technology transfer in a similar way. Hopefully the cynical view held in some quarters, and mentioned by Malhotra (1980), that: "the United States and Soviet Union entered into the international copyright conventions, only after they had published all the important books of the world freely by their own countrymen." can be lived down by sensible development of the conventions, and by a reasonable attitude of the Developed Countries towards all the member countries. Stewart (1981) describes one view of 'International Copyright in the 1980s' and the Unesco (1981) booklet 'ABC of Copyright' provides a brief review of the current situation.

10. REFERENCES

1. INTRODUCTION

BARKER, R E 1970. Photocopying practices in the United Kingdom.

DOYLE, F R 1976. A nickel for your ---: the copyright problem. Law Libr. J., 69(2), 203-9.

HOLLOWAY, A H 1970. A study of copyright. (AGARD Advisory Report No. 23).

McTAGUE, L C 1978. Copyright bibliography: 1955-1978. (ERIC report ED-168 459).

PLOMAN, E W 1980. Copyright: intellectual property in the information age.

SAWYER, M E 1979. The photocopying machine: how did it begin? Law Libr. J., 72(1), 91-98.

TAYLOR, L J 1980. Copyright for librarians.

WOOD, K 1974. Copyright 1954-1974: a bibliography. Libr. Inf. Bull., (23), 21-38.

YOUNG, M E 1980. Copyrights, 1964-May 1980. (NTIS report PB80-810823).

2. UNITED STATES OF AMERICA

AMERICAN LIBRARY ASSOCIATION 1977. Librarian's guide to the new copyright law.

AMERICAN LIBRARY ASSOCIATION 1975. Libraries and copyright: a summary of the arguments for library photocopying.

BENJAMIN, C G 1974. A hard look at the new Williams and Wilkins decision. Publishers Weekly, 205(10), 11 March 1974, 33-34.

BUSH, G P 1979. Technology and copyright: sources and materials.

CLAPP, V W 1968. The copyright dilemma: a librarians view. Library Q., 38, 352-.

CLAPP, V W 1963. Library photocopying and copyright: recent developments. Law Libr. J., 55, 10-.

COPYRIGHT CLEARANCE CENTER 1977. Handbook for libraries and other organizational users....

GOLDMAN, A A 1962. Tentative recommendations of the Copyright Office on the revision of the copyright law. Law Libr. J., 55, 3-.

GROS, E 1980. Impact of copyright infringement and photocopying on publishing profitability.

HOOD, H A 1978. A survey and critique of the photocopying provisions of the new American Copyright Act. Int. J. Law Libr., 6(2), 159-69.

HUTCHINGS, M M 1980. Copyright interpretation 'unreasonable'. American Libraries, 11(9), 530,532.

IEEE 1978. How to apply for copyright registration. IEEE Trans. on Professional Communication. 21(2), 79-85.

JOHNSTON, D F 1978. Copyright handbook.

KEPLINGER, M S 1980. Copyright and information technology. Annual Review of Information Science and Technology. 15, 3-33.

LAZOWSKA, E S 1968. Photocopying, copyright and the librarian. American Documentation. 1968, 123-.

MARKE, J J 1967. Can copyright law respond to the new technology. Law Libr. J., 61, 387-.

NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 1979. Final report, 31 July 1978. (Pub: Library of Congress, 1979)

NIMMER, M B 1979. Nimmer on copyright.

RINGER, B 1976. Copyright in the 1980s. Information Hotline, 8(10), 28-31.

SAGER, D J 1979. A National Periodicals Center. American Libraries, 10(8), 465-466.

SAVAGE, N 1979. A National Periodicals Center. Library Journal, 104(10), 1108-1115.

SELTZER, L E 1978. Exemptions and fair use in copyright: the exclusive rights tensions in the 1976 Copyright Act.

SHAW, R R 1972. William & Wilkins v. the US: a review of the Commissioner's report. American Libraries, 3(9), 987-999.

STEVENSON, I C 1975. The doctrine of fair use as it affects libraries. Law Libr. J., 68(3), 254-273.

TAYLOR, L J 1980. Copyright for librarians.

THATCHER, S 1977. A publisher's guide to the new US copyright law. Scholarly Publishing, 8(4), 315-333.

TSENG, H P 1979. The ethical aspects of photocopying. Law Libr. J., 72(1), 86-90.

URBACH, P F 1977. Access to journal article copies through NTIS. IEEE Trans. on Professional Communications, PC20(3), 176-9.

WEIL, B H 1975. Copyright developments. Annual Review of Information Science and Technology, 10, 359-381.

WHITE, H S 1979. The copyright dilemma: proceedings of a conference at Indiana University, April 14-15, 1977. (Pub: American Library Ass.)

3. UNITED KINGDOM

ADVANCED TECHNOLOGY/LIBRARIES 1981. ADONIS project plans demand printing for STM articles. AT/L, July 1981.

BARKER, R E 1970. Photocopying practices in the United Kingdom.

BOOKSELLER 1976. Copyright in technical fields: International publishers consider their defences. Bookseller, 27 Nov 1976, 2604,2606-7.

BOOKSELLER 1981. Redeemable features: the Green Paper on Copyright. Bookseller, 25 July 1981, 267-9.

BRITISH COPYRIGHT COUNCIL 1970. Photocopying and the law. (2nd ed of previous publication by the Society of Authors and the Publishers Ass.)

COLEMAN, E 1977. The impact of copyright on the future of scholarly publishing. Aslib Proceedings, 29(7), 259-65.

FLINT, M F 1979. A user's guide to copyright.

FRY, B M 1976. Survey of publisher practices and present attitudes on authorised journal article copying and licensing. (PB 271 003).

GARFIELD, E & SOPHAR, G 1970. Is copyright infringement by non-profit organizations always permissible? Aslib Proceedings, 22(11), 570-1.

GIBBS-SMITH, C H 1974. Copyright law concerning works of art, photographs and the written and spoken word, 2nd ed. (Museums Ass. Inf. Sheet 7)

GREEN PAPER ON COPYRIGHT 1981. Reform of the law relating to copyright, designs and performers protection. (Cmnd 8302).

GREGORY COMMITTEE 1952. Report of the Copyright Committee. (Cmnd 8662).

GROS, E 1980. Copyright and the photocopying of specialist journals. European Intellectual Property Review, Sept 1980, 279.

HARDIN, G 1977. Will Xerox Kill Gutenberg? Science, 2 Dec 1977, 883.

HOPE, A 1974. Beginning of an authors revolt? New Scientist, 1 August 1974, 223.

INDEXER 1972. Copyright in indexes. Indexer, 8(2), 82-87.

JAMES, E P Skone 1980. Copinger and Skone James on copyright. 12th ed.

JOHNSTON, D 1978. Design protection.

KING RESEARCH 1977. Library photocopying in the US.

LADDIE, H et al. 1980. The modern law of copyright.

LIBRARY ASSOCIATION 1977. Report of the Whitford Committee: interim statement. Library Association Record, 79(7),351.

LINE, M B & WOOD, D N 1975. The effect of a large-scale photocopying service on journal sales. J. Docum., 31(4), 234-245.

LINE, M B & WOOD, D N 1976. Photocopying and journal sales. J. Docum., 32(3), 204-206.

NASRI, W Z 1976. Crisis in copyright.

PEMBERTON, J E 1971. Crown copyright. Library World, 71(838), 307-308.

PERIODICAL PUBLISHERS ASSOCIATION 1980. Photocopying from periodicals.

PUBLISHERS ASSOCIATION 1975. Copying in schools: PA offers draft licence. Bookseller, 25 Oct 1975 2180,2182-2187.

PUBLISHERS ASSOCIATION 1978. PA submission on Whitford Report. Bookseller, 18 Mar 78, 1896-99.

RATCLIFFE, E H 1979. Notes on copyright. Aslib Proceedings, 31(7), 334-351.

ROYAL SOCIETY 1978. Comments on the report of the Whitford Committee. (Press Release PR/4(78))

ROYAL SOCIETY: Information Services Committee 1950). Fair copying declaration. (2nd ed 1952, 3rd '57)

SOCIETY OF AUTHORS & PUBLISHERS ASSOCIATION 1965. Photocopying and the law.

SOLICITOR'S JOURNAL 1977. Designs law: Whitford Report. Solicitor's J., 9 Sept 1977, 599-600.

TAYLOR, L J 1980. Copyright for librarians.

TAYLOR, L J 1981. Copyright Green Paper tinged with yellow. Library Assoc. Rec., 83(8), 375.

TONGEREN, E Van 1976. The effect of a large-scale photocopying service on journal sales. J. Docum., 32(3), 198-204.

URQUHART, D J et al. 1971. Replies to Garfield & Sophar (1970). Aslib Proc., 23(1), 47-50.

WALL, R 1977a. Copyright and reprography: now whither Whitford? Libr. Ass. Rec.,79(8), 423-4.

WALL, R 1977b. Alternatives to Whitford. Library Association Record, 79(9), 465-6.

WESTON, W 1977. Paper delivered to the Chartered Institute of Patent Agents. CIPA, June 1977, 432-456.

WHITFORD COMMITTEE 1977. Report of the Committee to consider the law on copyright and designs. (Cmnd 6732).

WOODWARD, A M 1978. Factors affecting the renewal of periodical subscriptions. (Aslib.)

4. OTHER COUNTRIES.

UNESCO 1956. Copyright laws and treaties of the world.

WORLD INTELLECTUAL PROPERTY ORGANIZATION 1979. Copyright law survey. (WIPO Pub 603E).

4.2 AUSTRALIA

LAHORE, J 1976. Photocopying in Australian libraries. Int. J. Law. Libr., 4(1),32-37.

FABINYI, A 1977. The Franki report and reprographic reproduction. Aust.Acad.Res.Libr., 8(1),1-3.

HORTON, A 1977. After the Franki Report - What? Aust.Acad.Res.Libr., 8(1), 4-8.

PEARCE, D 1977. Libraries and copyright: great expectations. Aust.Libr.J., 26(1), 14-17.

4.3 BELGIUM

EECKMAN, P 1976. Bibliotheek en auteursrecht. Bibliotheekgids, 52(2), 119-131.

LEEW, P Van 1976. Documentalists and recent developments in copyright in Belgium. J. Micrographics, 9(6), 283-286.

4.4 CANADA

KEYES, A A & BRUNET, C 1977. Copyright in Canada.

STUBBS, B S 1978. Finding a common ground. Can.Libr.J., 36(5), 379-383.

STUBBS, B S 1981. Motheaten copyright law will be revised, someday. Can.Libr.J., 38(1), 17-.

4.5 CHINA

GOTZE,H 1980. The People's Republic of China and international copyright relations. STM Newsletter, No 56, 3-4.

4.6 DENMARK

WEINCKE, W 1977. Bibliotekerne og ophavsretten. Bogens Verden, 59(2), 60-63.

4.7 FRANCE

TAYLOR, L J 1980. Copyright for librarians.

WHITFORD COMMITTEE 1977. See: Section 3 above.

4.8 GERMAN DEMOCRATIC REPUBLIC

HUBNER, W 1979. Grundlegende Rechtsvorschriften der DDR fur die Herausgabe von Informationsmitteln. Zentbl.Biblioth., 93(5), 196-200.

4.9 GERMANY (FEDERAL REPUBLIC OF)

DIETZ, A 1978. See: Section 5 below.

MENZINGER, K 1980. Copyright and photocopying: revision debates in the FRG. IFLA J. 6(4),368-71.

SINOGOWITZ, B 1980. Das Ringen um die Reform des Kopierrechts. Bibliotheksdienst, 3 Mar 1980, 243-252.

4.12 INDIA

KHOSLA, G C 1977. Know your copyright.

4.13 ITALY

AMICARELLI, A 1977. In tema di diritto d'autore. AIB Boll., 17(2), 133-138.

4.14 JAPAN

UTIDA, S 1970. New copyright law & reprography. Dokumentesyon Kenkyu, 20(12), 367-75.(In Jap.)

4.18 PORTUGAL

REBELLO, L F 1980. Evaluation of copyright in Portugal. Rev.Int. du droit d'Auteur, 105,130-154.

4.19 SOVIET UNION

BOGUSLAVSKY, M 1979. The USSR & international copyright protection.

KOUTCHOUMOW, J A 1974. The new Soviet copyright agency is feeling its way. Publishers Weekly 24 June 1974, 40-42.

LOTTMAN, H R 1975. Inside VAAP. Publishers Weekly, 8 Sept 1975, 28-33.

SCHWARTZ, A U 1975. Publishing detente in the time of VAAP. Publishers Weekly, 3 Mar 75, 28-31.

NEWCITY, M A 1978. Copyright law in the Soviet Union.

NURNBERG, A 1975. Dealing with the Russians. The Author, 86(3), 83-86.

4.20 SWEDEN

WHITFORD COMMITTEE 1977. See: Section 3 above.

WORLD INTELLECTUAL PROPERTY ORGANIZATION 1979. Copyright law survey. (WIPO Pub 603E).

5. INTERNATIONAL COPYRIGHT

ALAM, A M N 1979. Unesco's activities to facilitate access of developing countries to protected works. Unesco Journal of Information Science, Librarianship and Archives Admin.,1(3),191-9.

BARKER, R E 1976. International copyright. Bookseller, Pt 1, 28 Aug 76,1522-26,1528 & Pt 2 4 Sept 76, 1626, 1628-30.

BOGUSLAVSKY, M 1979. See: Section 4.19 above.

DIETZ, A 1978. Copyright law in the European Community. (EUR 5850).

DOCK, M C 1975. The Unesco International Copyright Information Centre. Information: News & Sources, 7(3), 93-95.

GILLESPIE, P D et al. 1978. Problems of document delivery for the Euronet user.(Franklin Inst.)

GOTZEN, F 1978. Reprography and the Berne Convention. Copyright, 14(10), 315-332.

LINE, M B 1977. Principles of international lending and photocopying. Int.Libr.Rev.,9(3),369-79.

MALLOWS, R J 1981. Copyright in the EEC. The Author, 92(2), 49-51.

OFFENBACHER, E 1971. Reprography's contribution to information services in developing countries. In: ISLIC International Conference on Information Science, Tel Aviv, 1971. 559-565

6. TRANSLATIONS

HOLLOWAY, A H 1970. See: Section 1 above.

INTERNATIONAL COPYRIGHT INFORMATION CENTRE 1979. Model contract for the publication of a reproduction of an edition of a work; .....translation of a work.

7. PATENTS AND INDUSTRIAL DESIGNS

JOHNSTON, D 1978. Design protection.

WESTON, W 1977. See: Section 3 above.

WHITFORD COMMITTEE 1977. See: Section 3 above.

8. SOFTWARE PROTECTION

BLOOM, H 1977. Legal problems of Euronet. Computer Weekly, 12 May 1977, 12.

BRESLOW, M et al. 1977. An analysis of computer and photocopying issues.... (PB 283 416).

BUCH, P 1976. La protection juridique des Programmes d'Ordinateurs. Revue de Droit Intellectual l'Ingenieur-Conseil, 66(6), 157-186.

CATTERNS, D 1973. Computers and copyright. Australian Copyright Bull., 20 May 73, 1-3.

COMMITTEE OF GOVERNMENTAL EXPERTS ON COPYRIGHT PROBLEMS ARISING FROM THE USE OF COMPUTERS... 1981. Copyright, 17(3), 73-79.

CRABB, G 1976. Copyright in the AV library. Audiovisual librarian, 2(4),153-4,156-7.

DOI, T 1973. Legal protection of computer programs. Patents and Licensing, 3(10), 3-6.

EDWARDS, D 1979. Semiconductor designs require copyright protection. Communications and the Law, 1(2), 65-68.

FICSOR, M 1981. The home taping of protected works. Copyright, 17(2), 59-64.

GALTIERI, G 1972. The protection of computer programs in Italy. Copyright, 8(11), 227-8.

GIBBS, M M 1980. Document ordering through Lockheeds DIALOG & SDCs ORBIT. Online,4(4).

GREEN PAPER ON COPYRIGHT 1981. See: Section 3.

HERSEY, J 1978. Additional views on computer software. (ERIC report. ED 163 983.)

HOLMES, P L 1980. Re-use of machine readable data. In: 4th International Online Information Mtng.

ISKRANT, J 1970. Impact of the multiple forms of computer programs on their adequate protection by copyright. In: ASCAP Copyright Law Symp. 18.

KEPLINGER, M S 1980. See: Section 2 above.

KINDERMAN, M 1981. Computer software and copyright conventions. EIPR, 3(1), 6-12.

KOLLE, G 1976. Computer software protection. Copyright, 13(3), 70-79.

KUHN, J K R 1978. Protecting software with copyrights, patents and trade secrets. Journal of Systems Management, 29(12), 28-31.

LAHORE, J 1978. Computers and the law. Federal Law Review, 9(1), 15-37.

LAW COMMISSION 1974. Breach of confidence.

LAWLOR, R C 1979. A proposal for strong protection of programs. Jurimetrics J., 20 (Fall 79).

MILLER, J K 1978. Licenses to videotape films. Libr. Trends, 27(1), 101-105.

NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 1978. See: Section 2 above.

NEAL, P R 1980. Changing law on proprietory protection for databases. In: 4th Int.Online Inf.Mtng.

NIBLETT, B 1980. Legal protection of computer programs.

NIMTZ, R O 1979. Development of the law of software protection. J.Pat.Office Soc., 61, 3-43.

PAGENBERG, B A 1974. Patentability of computer programs. IIC, 5(1), 1-43.

PERRY, L 1979. Legal protection of computer software. EIPR, 1, 34-37.

PERRY, L 1981. Computer programs - art or science. Practical Computing, Apr 81, 104-7.

REINER,R 1979. Home video-recording: Fair use or infringement. S.California Law Rev.,52(2),573-634

RISSET, J C 1979. Copyright problems arising from the use of computers to create works. Copyright, 15(9), 232-241.

SQUIRES, J 1976. Copyright and compilations in the computer era. Bull. Copyright Soc.USA,24(1),18-46.

STERN, R H 1981. The case of the purloined object code unloading ROMs. EIPR, 3(10), 301-304.

STEVENSON, L 1981. The Betamax decision: off-air copying of films at home. EIPR, 3(9),274-79.

TRUBKIN, L 1979. The copyright quandary for data base publishers. In: 3rd Int. Online Inf.Mtng.

TURNER, A E 1962. The law of trade secrets.

ULMER, E 1971. Copyright protection of scientific works with special reference to computer programs. IIC, 2(1), 56-70.

WEIL, B H 1975. See: Section 2 above.

WHITFORD COMMITTEE 1977. See: Section 3 above.

WORLD INTELLECTUAL PROPERTY ORGANIZATION 1978. Model provisions on the protection of computer software.

9. CONCLUSION

FICSOR, M 1981. See: Section 8 above.

FREEDMAN, H B 1978. Areas of impact from printing on demand. In: ASIS Annual Meeting 1978,15,133-6.

KATZENBERGER, P 1978. Primary publications and modern information systems. In: Ist Int.Conf. of Scientific Editors, 1977, Jerusalem, 43-48.

LEA, P W 1979. Alternative methods of journal publishing. Aslib Proc., 31(1), 33-36.

McELROY, A R 1980. Photocopies versus offprints. Interlending Review, 8(4), 134-136.

MALHOTRA, A 1980. Copyright aspects of publishing in developing countries. Copyright, 16(10), 310-314.

STEWART, S 1981. International copyright in the 1980s. EIPR, Pt 1, 3(8),231-234, Pt 2,3(9), 262-267.

UNESCO 1981. The ABC of copyright.

VISSCHER, M B 1977. Copyright and other impediments to scientific communication. IEEE Trans. on Professional Communication, PC20(3),149-151.

REPORT DOCUMENTATION PAGE

1. Recipient's Reference	2. Originator's Reference	3. Further Reference	4. Security Classification of Document
	AGARD-AR-176	ISBN 92-835-1411-4	UNCLASSIFIED

5. Originator Advisory Group for Aerospace Research and Development
North Atlantic Treaty Organization
7 rue Ancelle, 92200 Neuilly sur Seine, France

6. Title

COPYRIGHT: 1971–1981

7. Presented at

8. Author(s)/Editor(s)	9. Date
Ronald J.Millen	January 1982

10. Author's/Editor's Address	11. Pages
36 Gurney Court Road St.Albans, Herts AL1 4RL, UK	36

12. Distribution Statement This document is distributed in accordance with AGARD policies and regulations, which are outlined on the Outside Back Covers of all AGARD publications.

13. Keywords/Descriptors

Copyrights
Security
Information systems
Computers
Photocopying

14. Abstract

This publication is an update of Mr A.H.Holloway's 1970 work 'A Study of Copyright' (Advisory Report No.23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. The emphasis is on photocopying in libraries and on other matters which directly affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

This Advisory Report was prepared at the request of the Technical Information Panel of AGARD.

AGARD Advisory Report No.176
Advisory Group for Aerospace Research and Development, NATO
COPYRIGHT: 1971–1981
by Ronald J.Millen
Published January 1982
36 pages

This publication is an update of Mr A.H.Holloway's 1970 work 'A Study of Copyright' (Advisory Report No.23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. The emphasis is on photocopying in libraries and on other matters which directly

P.T.O.

AGARD-AR-176

Copyrights
Security
Information systems
Computers
Photocopying

AGARD Advisory Report No.176
Advisory Group for Aerospace Research and Development, NATO
COPYRIGHT: 1971–1981
by Ronald J.Millen
Published January 1982
36 pages

This publication is an update of Mr A.H.Holloway's 1970 work 'A Study of Copyright' (Advisory Report No.23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. The emphasis is on photocopying in libraries and on other matters which directly

P.T.O.

AGARD-AR-176

Copyrights
Security
Information systems
Computers
Photocopying

AGARD Advisory Report No.176
Advisory Group for Aerospace Research and Development, NATO
COPYRIGHT: 1971–1981
by Ronald J.Millen
Published January 1982
36 pages

This publication is an update of Mr A.H.Holloway's 1970 work 'A Study of Copyright' (Advisory Report No.23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. The emphasis is on photocopying in libraries and on other matters which directly

P.T.O.

AGARD-AR-176

Copyrights
Security
Information systems
Computers
Photocopying

AGARD Advisory Report No.176
Advisory Group for Aerospace Research and Development, NATO
COPYRIGHT: 1971–1981
by Ronald J.Mileln
Published January 1982
36 pages

This publication is an update of Mr A.H.Holloway's 1970 work 'A Study of Copyright' (Advisory Report No.23). It describes developments since that date, concentrating on the situation in the United States of America and the United Kingdom, but including comments on the position in the NATO member nations and several other countries. The emphasis is on photocopying in libraries and on other matters which directly

P.T.O.

AGARD-AR-176

Copyrights
Security
Information systems
Computers
Photocopying

affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

This Advisory Report was prepared at the request of the Technical Information Panel of AGARD.

ISBN 92-835-1411-4

affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

This Advisory Report was prepared at the request of the Technical Information Panel of AGARD.

ISBN 92-835-1411-4

affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

This Advisory Report was prepared at the request of the Technical Information Panel of AGARD.

ISBN 92-835-1411-4

affect information transfer, such as software and database protection. Some of the current international developments are mentioned, including the effects of the EEC and the accession of the Soviet Union to the Universal Copyright Convention.

This Advisory Report was prepared at the request of the Technical Information Panel of AGARD.

ISBN 92-835-1411-4

AGARD
NATO OTAN
7 RUE ANCELLE · 92200 NEUILLY-SUR-SEINE
FRANCE
Telephone 745.08.10 · Telex 610176

DISTRIBUTION OF UNCLASSIFIED AGARD PUBLICATIONS

AGARD does NOT hold stocks of AGARD publications at the above address for general distribution. Initial distribution of AGARD publications is made to AGARD Member Nations through the following National Distribution Centres. Further copies are sometimes available from these Centres, but if not may be purchased in Microfiche or Photocopy form from the Purchase Agencies listed below.

NATIONAL DISTRIBUTION CENTRES

BELGIUM
Coordonnateur AGARD – VSL
Etat-Major de la Force Aérienne
Quartier Reine Elisabeth
Rue d'Evere, 1140 Bruxelles

CANADA
Defence Science Information Services
Department of National Defence
Ottawa, Ontario K1A OK2

DENMARK
Danish Defence Research Board
Østerbrogades Kaserne
Copenhagen Ø

FRANCE
O.N.E.R.A. (Direction)
29 Avenue de la Division Leclerc
92320 Châtillon sous Bagneux

GERMANY
Fachinformationszentrum Energie,
Physik, Mathematik GmbH
Kernforschungszentrum
D-7514 Eggenstein-Leopoldshafen 2

GREECE
Hellenic Air Force General Staff
Research and Development Directorate
Holargos, Athens

ICELAND
Director of Aviation
c/o Flugrad
Reykjavik

ITALY
Aeronautica Militare
Ufficio del Delegato Nazionale all'AGARD
3, Piazzale Adenauer
Roma/EUR

LUXEMBOURG
See Belgium

NETHERLANDS
Netherlands Delegation to AGARD
National Aerospace Laboratory, NLR
P.O. Box 126
2600 A.C. Delft

NORWAY
Norwegian Defence Research Establishment
Main Library
P.O. Box 25
N-2007 Kjeller

PORTUGAL
Direcção do Serviço de Material
da Forca Aerea
Rua da Escola Politécnica 42
Lisboa
Attn: AGARD National Delegate

TURKEY
Department of Research and Development (ARGE)
Ministry of National Defence, Ankara

UNITED KINGDOM
Defence Research Information Centre
Station Square House
St. Mary Cray
Orpington, Kent BR5 3RE

UNITED STATES
National Aeronautics and Space Administration (NASA)
Langley Field, Virginia 23365
Attn: Report Distribution and Storage Unit

THE UNITED STATES NATIONAL DISTRIBUTION CENTRE (NASA) DOES NOT HOLD STOCKS OF AGARD PUBLICATIONS, AND APPLICATIONS FOR COPIES SHOULD BE MADE DIRECT TO THE NATIONAL TECHNICAL INFORMATION SERVICE (NTIS) AT THE ADDRESS BELOW.

PURCHASE AGENCIES

Microfiche or Photocopy
National Technical
Information Service (NTIS)
5285 Port Royal Road
Springfield
Virginia 22161, USA

Microfiche
Space Documentation Service
European Space Agency
10, rue Mário Nikis
75015 Paris, France

Microfiche
Technology Reports
Centre (DTI)
Station Square House
St. Mary Cray
Orpington, Kent BR5 3RF
England

Requests for microfiche or photocopies of AGARD documents should include the AGARD serial number, title, author or editor, and publication date. Requests to NTIS should include the NASA accession report number. Full bibliographical references and abstracts of AGARD publications are given in the following journals:

Scientific and Technical Aerospace Reports (STAR)
published by NASA Scientific and Technical
Information Facility
Post Office Box 8757
Baltimore/Washington International Airport
Maryland 21240, USA

Government Reports Announcements (GRA)
published by the National Technical
Information Services, Springfield
Virginia 22161, USA

Printed by Technical Editing and Reproduction Ltd
Harford House, 7–9 Charlotte St, London W1P 1HD

ISBN 92-835-1411-4