THE GROWTH OF THE RESIDENTIAL MARKET IN NORTH AMERICA FOR PRESSURE TREATED LUMBER & TIMBERS

by

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INTRODUCTION

In the last decade the most significant growth area for pressure treated wood products in the U.S.A. and Canada has been lumber and timbers for residential applications.

A thorough and well documented study carried out by Data Resources Inc. reviews in depth the growth of the treated lumber and timber market in the U.S.A. in the last decade compared to all other treated wood products. Salient parts of this study by DRI are referenced and commented on in this report when reviewing the U.S. markets for treated wood products.

The key factor to this growth has been the dramatic trend towards do-it-yourself construction and renovation in the last eight years.

By 1977 merchandising programs were in effect at many of the larger retail chain outlets designed to create consumer awareness in treated lumber and timbers for decks, patios, fences and other outdoor uses.

CCA (Chromated Copper Arsenate) has been the most commonly used preservative for DIY outdoor applications. In the U.S.A., AWPA figures show that by 1981, 80% of all lumber and timbers preserved were treated with CCA whereas in 1972, the CCA proportion was only 35%.

AWPA figures also show that the overall lumber and timbers share of the total market for treated wood products in the U.S.A. increased from 23.5% in 1972, to 36.9% in 1981; 64 million cu.ft. 1972=129 million cu.ft. in 1981 with an annual average growth rate since 1975 of 14.1%. For other treated products: rail ties, poles, pilings, fence posts, etc., the average growth rate per annum since 1975 was only 3.7%.

In Canada there has been a corresponding increase in the production of lumber and timbers compared to other products. However, lack of details in reporting the volumes of treated materials by preservative type to Statistics Canada, makes the total growth pattern harder to interpret.

Nevertheless, with the data available, this report will show there are strong indications that the growth trend of treated lumber and timbers in Canada since 1975, together with increased use of CCA as the principal water-borne preservative, broadly parallels the growth trends observed in the U.S.A.

In N. America from the early part of this century to about 1970, the wood preservation industry was mainly centered around the production of rail ties, utility poles, marine pilings, heavy timbers and farm fence posts.

In Canada, treated lumber and timbers for residential use was hardly a factor at all and probably accounted for less than 5% of the nation's volume of treated wood products.

Rail ties, poles, pilings and heavy timbers were treated with oilborne preservatives such as Creosote and Pentachlorophenol. Waterborne preservatives such as CCA or ACA accounted for less than 5% of the total preservatives used in Canada but from 1970 onwards, the waterborne segment of the market grew at a remarkable pace. Factors that contributed to the growth were:-

(a) Increased confidence in the service performance of CCA and ACA following more than 30 years of use in Europe
(b) Increasing cost competitiveness with oilbornes, particularly with respect to the rising cost of oil as a result of the Arab oil embargo
(c) Recognition of the suitablility of CCA for use in decks, siding, fencing, etc. where cleanliness and appearance were key factors
(d) The trend towards consumer DIY renovations and outdoor additions
(e) Last but not least, the acceptance of residential wood foundations as a suitable alternative to concrete.

Until the mid 1970s there was no established retail market for treated wood products other than farm fence posts at rural outlets. The average consumer had little if any awareness of pressure treated wood and its advantages. Furthermore, there were few if any retail outlets that stocked the product.

In 1976 the major U.S. chemical manufacturers of CCA embarked on major advertising support programs to the U.S. retail lumber dealers designed to generate consumer acceptance of CCA treated wood.

In the Southern U.S. states, CCA treated Southern Yellow Pine had already become a popular consumer item several years before the launching of these major ad programs.

However, additional consumer type advertising programs through radio, T.V., magazine, plus the distribution of numerous plans and ideas booklets to the public, undoubtedly had significant impact on increased consumer acceptance of the product. Retail distribution growth of the product occurred in other regions of the U.S., principally in the N. East, N. Central as well as Canada.

Of the total volume of lumber and timbers produced in the U.S.A. in 81, AWPA figures show that at least 80% of the total volume was treated with CCA.

FIGURE 1

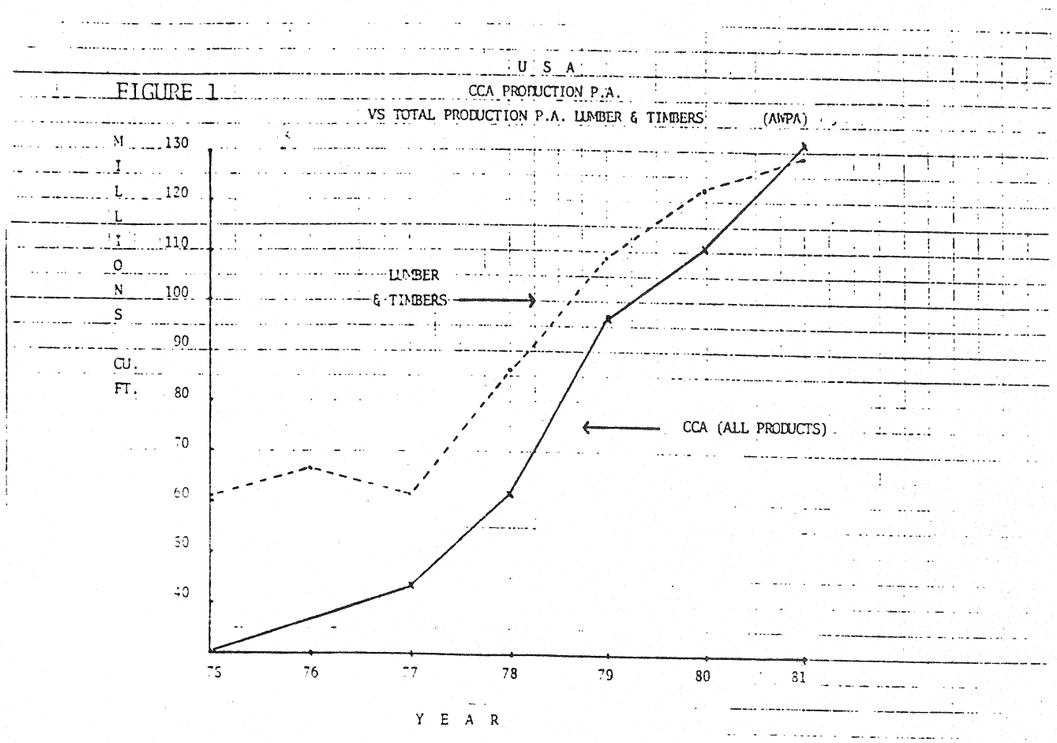


Figure 1 graphs the annual production of lumber and timbers from 1975 - 1981 in the U.S. as reported to AWPA compared to the corresponding growth in CCA treated products for the same period.

Between 1972 - 1977 the average annual production was 66.8 million cu.ft. By 1981 this had climbed to 129 million cu.ft. per annum of lumber and timbers - almost double! See Table 1.

TABLE 1 U.S.A. LUMBER & TIMBER PRODUCTION P.A. VS ALL OTHER PRODUCTS MILLIONS CU.FT. (AWPA DATA)

	1975	1976	1977	1978	1979	1980	1981
LUMBER & TIMBER	61.5	67.1	61.7	85.9	108.0	117.6	129.0
PERCENT OF TOTAL	25.2	26.1	24.7	30.3	31.0	35.5	36.9
ALL OTHERS TIES, POLES PILINGS, POSTS ETC.	182.6	190.1	188.6	197.6	242.1	213.4	220.8
PERCENT OF TOTAL	74.8	73.9	75.3	69.7	68.9	64.5	63.1
TOTAL PRODUCTION	244.1	257.2	250.3	283.3	351.0	331.0	349.8

From 1975 - 1981 the average annual growth rate for lumber and timbers in the U.S. was 14.1% but from 1977 - 1981 was 21%.

The DRI study points out that the annual volumes reported to AWPA are only based on reporting plants. The number of non-responding plants was considerable, e.g., 200 - 300, depending on year surveyed compared to 300-350 plants who did annually respond to the AWPA survey. Based on average productions p.a. of approximately .25 million cu.ft. per non-responding plant, DRI amended the yearly volumes.

In general the AWPA totals for lumber and timbers were about 30% lower than the corrected figures of DRI, e.g.,

1981 - 129 million cu.ft. of treated lumber & timbers - AWPA
172.5 " " " " " - DRI Corrected.

The total volumes of all treated products were likewise adjusted by DRI to give more realistic volumes based on total number of treating plants in the U.S.A.

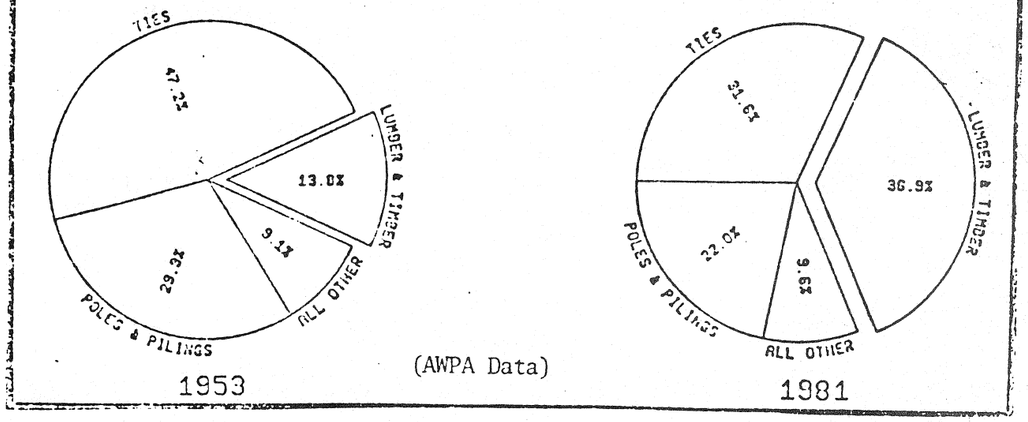
In contrast with the sudden growth in lumber and timbers in the U.S., the remainder of treated wood products, i.e., ties, poles, fence posts, etc., mostly treated with Creosote or Penta, showed comparitively little growth. See Table 1.

All other treated products recorded an average annual growth rate of only 3.7%: rail ties, poles, pilings, fence posts, etc., as a collective group.

Lumber and timbers overall share of the market compared to established commodity items such as ties, poles, fence posts, pilings, switch ties, cross-arms, climbed from 13.8% in 1953 to 36.9% in 1981 (ref. AWA treater data) thus commanding by 1981, the largest slice of the pie. See Figure 2.

U.S.A. Treated Wood Products Produced

FIGURE 2

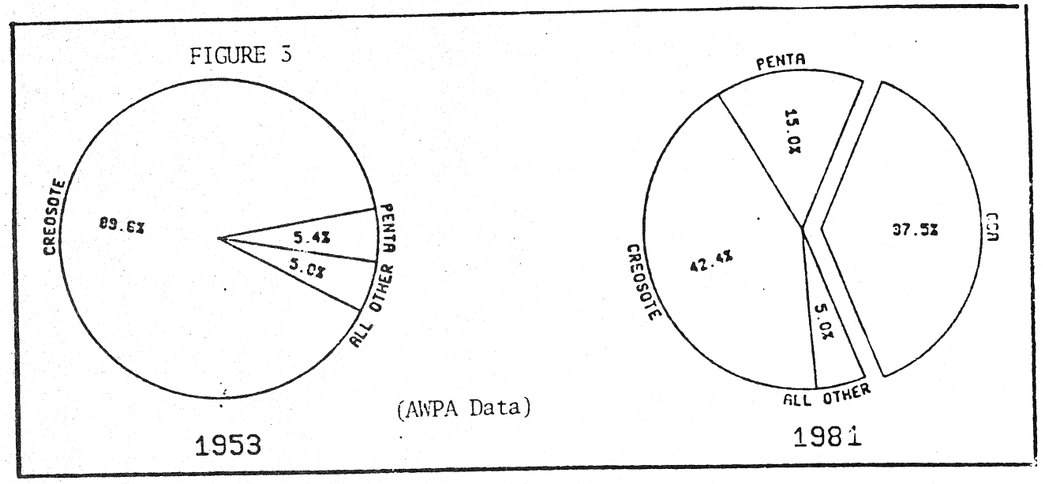


As mentioned previously the major U.S. chemical manufacturers of CCA became far more involved in 1976 in retail merchandising programs for their treaters' products. Some evidence of the success of this program is reflected in the percentages of lumber & timbers treated with CCA - 40% in 1975 to 80% in 1981.

An interesting correlation between overall growth in lumber and timber production in the U.S.A. and that of total production of products treated with CCA is shown in Figure 1. From 1977 - 1981 the average annual growth rates are strikingly similar providing a clear indication of the role that CCA played in the growth of the lumber and timber product.

Note also in Figure 3, for total wood products treated, the overall increase in the use of CCA preservatives, less than 5% in 1953 to 37% in 1981.

FIGURE 3



Part Two

CANADA
TREATED WOOD PRODUCTS

Due to our geographic proximity to the U.S.A. as well as cultural and socio-economic similarities, production and marketing patterns in Canada often closely approximate those of the U.S.A.

This is essentially evident in the field of wood preservation where the overall transportation and communication needs of the two nations have required substantial volumes of treated rail ties, utility poles, land and marine pilings, etc., most of which have been treated with Creosote and oilborne Penta.

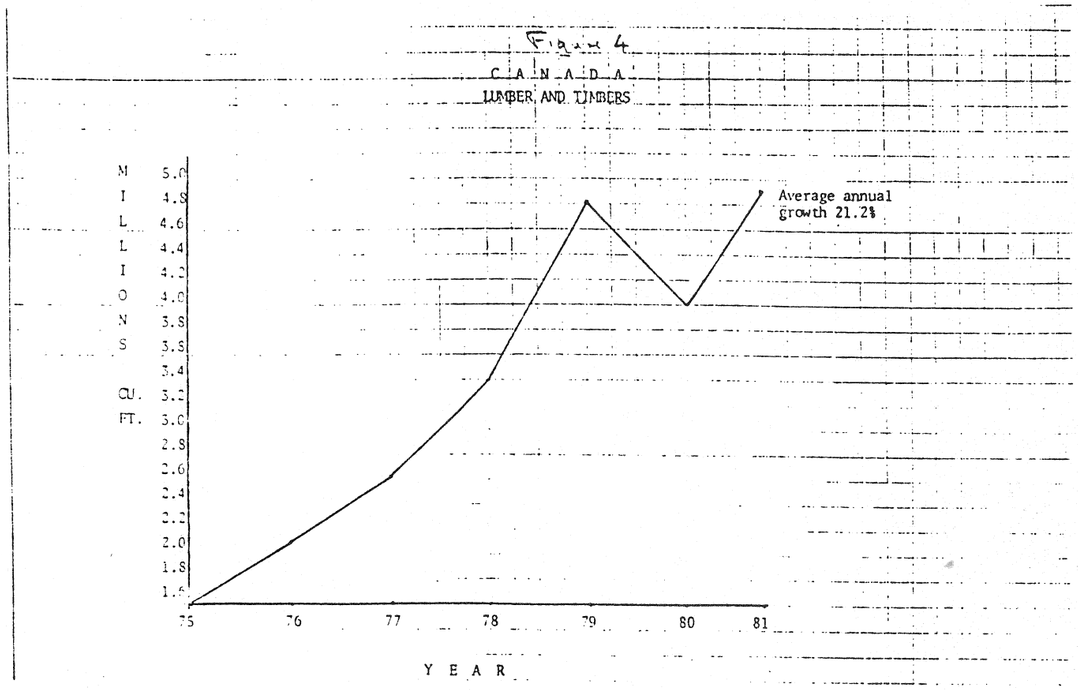
Canadian treatment standards have largely been based on those in the U.S. and many of the preservatives, except Creosote, have been manufactured in the U.S. and imported into Canada.

The two largest chemical producers in Canada of CCA have strong U.S. affiliations. It was therefore predictable that the consumer programs developed in the U.S. should also be introduced into Canada, which occurred in 1976-77.

Unlike the U.S., the Canadian wood preserving industry has no formal body such as AWPA that has ever kept consistent records of all treated wood products by volumes produced and preservative type. This is a sad comment on our wood preserving industry and is a matter that needs urgent attention. Under the shadow of possible restrictive use of preservatives and plant processes by Federal and Provincial agencies, the Canadian wood preserving industry stands naked and unprotected if it cannot justify the true economic value of its own product.

What information is available to us comes through Statistics Canada, a Dept. of the Federal Government. Through the Forintek Corp. we were able to gather some information via Stats Canada that is far from complete, is probably very much under reported, but which at least indicates some parallel trends to what has been described in the U.S.

FIG. 4



The output volumes of treated lumber & timbers for Canada for 1975 -81 are shown in Table 2 & Figure 4. In 1975 only 1.69 million cu.ft. of lumber and timbers were reportedly produced. By 1978 that figure had jumped to 3.4 million cu.ft. and by 1981 had reached 4.9 million cu.ft. with an annual average growth rate of 21.2% compared to only 5.7% for the remainder of the treated wood products: rail ties, poles, pilings, fence posts etc.

Conversely, neither of the oilborne preservatives, Creosote and Penta, which have been the traditional preservatives used for poles, pilings, etc., listed spearately by Stats Canada by Imperial gallons purchased, show an obvious growth since 1975.

TABLE 2

CANADA TREATED WOOD PRODUCTS
YEARLY OUTPUT
MILLIONS CU.FT.

(STATS CAN)

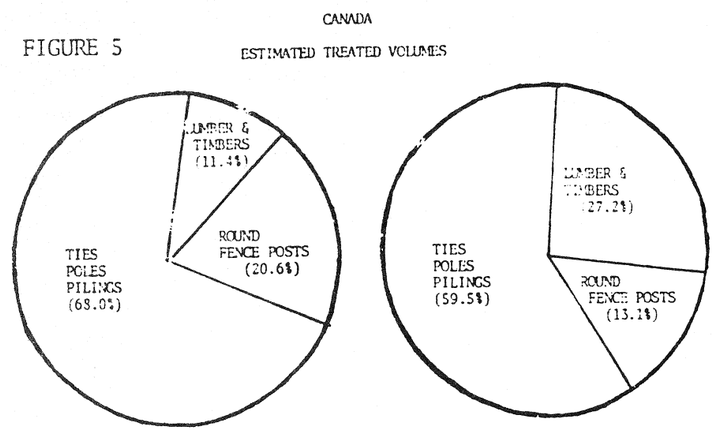
	1975	1976	1977	1978	1979	1980	1981
LUMBER & TIMBERS	1.7	2.1	2.6	3.4	4.8	4.0	4.9
PERCENT OF TOTAL	11.5	17.5	18.4	21.2	29.4	24.2	27.3
ALL OTHERS POLES, TIES, PILINGS, POSTS, ETC.	13.1	9.9	11.5	12.6	11.5	12.5	13.0
PERCENT OF TOTAL	88.5	82.5	81.5	78.8	70.5	75.7	72.6
TOTAL PRODUCTION	14.8	12.0	14.1	16.0	16.3	16.5	17.9

N.B. EX STATS CAN

Cu.ft. based on FBM values for lumber & timbers
Cu.ft. based on total no. of ties p.a. x 3 cu.ft. per tie
Cu.ft. based on total no. of fence posts p.a. x.1 cu.ft. per post
Cu.ft. based on poles & pilings on actual cu.footage given p.a.

A comparison of product distribution, 1975 and 1981 is given in Figure 5. In 1975 lumber and timbers only represented 11.4% of the total volume of treated wood compared to 27.4% in 1981.

FIGURE 5



Therefore, the Stats Canada figures show that treated lumber and timber production increased by 189% since 1975, but the actual preservative breakdown used for lumber and timbers is not given.

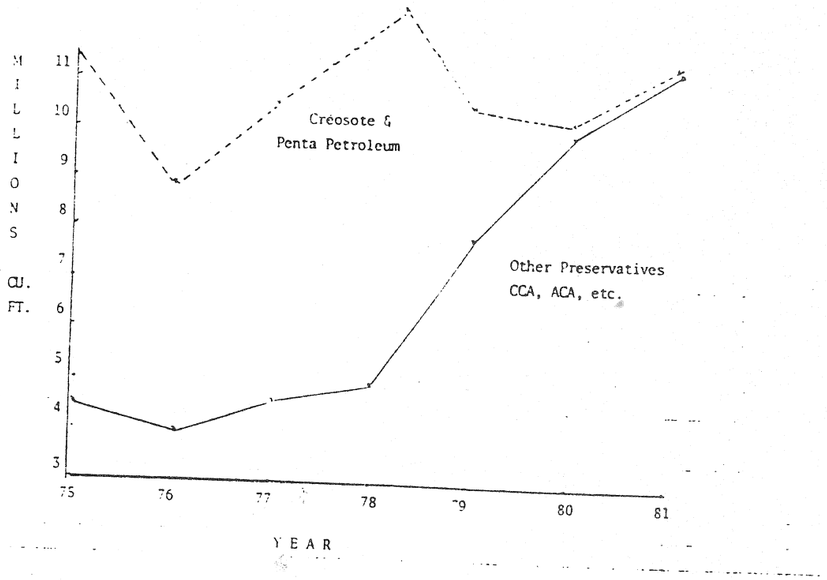
Estimates of Wood Volumes Treated by Preservative Type

Stats Canada give $s value of preservative purchased annually for Creosote, Penta Petroleum and "All Other" preservatives. By converting these $ values to lbs. and/or gallons used and estimating an average retention of .4 lbs. pcf for waterborne salts and Penta, and an average retention of 8 lbs. pcf for Creosote and Penta Petroleum, some approximate calculation of cu.ft. treated was graphed. See Figure 6. A 10% annual inflation factor was also calculated into the conversion for all classes of preservative where only $ values purchased p.a. were given by Stats Canada.

Preservative systems other than Creosote and Penta Petroleum include CCA, ACA (Ammoniacal Copper Arsenate) and Penta supplied in solid forms, i.e., pellets or brocks.

FIGURE 6

CANADA
WOOD VOLUMES TREATED BY CREOSOTE OR PENTA PETROLEUM
VS. WOOD VOLUMES TREATED BY CCA, ACA, ETC.



In Figure 6 and Table 3 for wood products treated with Creosote and Penta Petroleum vs "Other Preservatives", we see for 'Other Preservatives" an increase of from 4.5 million cu.ft. in 1975 to 10.9 million cu.ft. in 1981. Since the majority of rail ties, poles & pilings are treated with Creosote or Penta Petroleum or combinations of the two, we can at least theorize that the 266% growth in the "Other Preservatives" category does not include these basic commodities. Note the 0 growth shown for Creosote and Penta Petroleum during the same period.

TABLE 3

CANADA TREATED WOOD PRODUCTS
YEARLY OUTPUT BY PRESERVATIVE TYPE
MILLIONS CU.FT.

	1975	1976	1977	1978	1979	1980	1981
PENTA-PETROLEUM & CREOSOTE	11.2	8.4	10.5	12.5	10.8	10.2	10.9
PERCENT OF TOTAL	71.3	68.2	69.5	71.8	58.1	50.2	50.0
ALL OTHERS, CCA, ACA, PENTA	4.5	3.9	4.6	4.9	7.8	10.1	10.9
PERCENT OF TOTAL	28.7	31.8	30.5	28.2	41.9	49.8	50.0
TOTAL PRODUCTION	15.7	12.3	15.1	17.4	18.6	20.3	21.8

CU.FOOTAGE CALCULATED BY CONVERSION OF $s VALUE OF PRESERVATIVES PURCHASED

Since we have already observed that the reported figures by Statistics Canada for lumber and timbers is well below these figures, i.e., less than 1/2, one can only theorize at what would make up the remaining 50% of treated wood volume by "Other Preservative" category - most round fence post treaters, the bulk of which are in the Prairie Provinces and B.C., treat with CCA and a few with Penta supplied in solid form.

Stats Canada give yearly fence post treated production. In cu.ft. this translates to approximately 2.5 million cu.ft. of additional wood p.a. However, in an earlier study carried out by Timber Specialties based on Alberta and Saskatchewan Forestry figures, it was calculated that almost twice that volume was produced in those two provinces alone in 1980 of which 30% were dipped in Penta and oil.

Treated plywood figures are not included by Stats Canada but based upon Preserved Wood Foundations starts; approximately 1/2 million cu.ft. is treated with CCA and ACA p.a.

Finally there are about 5 treating plants in Canada producing CCA or ACA treated utility poles. Possibly these plants could account for an additional 2 & 1/2 million cu.ft. of pole material under the "Other Preservative" category.

If, in 1981, we add 2.1 million cu.ft. of fence posts and 2.5 million cu.ft. of poles and 1/2 million cu.ft. of plywood plus the already reported 4.9 million ft. of lumber and timbers, we arrrive at approximately 10.0 million cu.ft. of total treated wood that falls under the "Other Preservative" category. This comes close to the 10.9 million cu.ft. arrived at by conversion of chemical $s spent to total cubic footage - see Figure 6 and Table 3.

Comparing the total volumes of wood treated by the two methods of calculation:-

(a) Output volumes of wood products as reported to Stats Canada

and (b) Conversion of reported $ values of preservative classes to wood volumes treated, we find a close relationship from 1975 - 1979 but with some widening of totals for 1980 and 81. (Tables 2 & 3)

CCA

That CCA is the most commonly used preservative under the "Other Preservatives" category would also be borne out by Table 4 showing numbers of treating plants operating in Canada 1972 - 1983 with principal preservatives used. (courtesy Forintek)

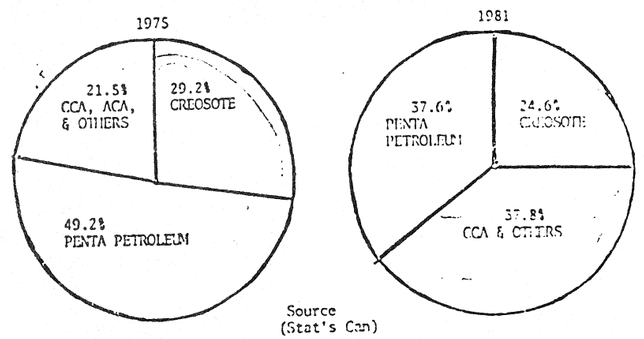
TABLE 4 NO. OF PRESSURE TREATING PLANTS IN CANADA AND MAIN PRESERVATIVE USED

	CREO & PENTA	CCA	TOTAL
1972	38	13	51
1983	23	36	59

In 1972, 13 out of 51 total treating plants used CCA. By 1983, in just 11 years, a further 8 plants were added giving a total of 59 pressure treating plants in Canada. Of this total, 36 are now using CCA as the main preservative and 23 plants continue to treat with Creosote and/or Pentachlorophenol as the principal preservative system.

Figure 7 shows the comparitive $ values of preservatives purchased 1975 and 1981. Note the increase in "Other Preservative" class, i.e., CCA, ACA, from 21.5% in 1975 to 38% in 1981.

Figure 7 CANADA PRESERVATIVES USED BY $ VALUE PURCHASED



Source (Stat's Can)

It is suggested that the two factors leading to the rapid growth of lumber and timbers treated production in Canada are:

(a) The advent of the PWF System in Canada in 1975 (only CCA or ACA preservatives used) and

(b) The developing do-it-yourself business for treated decks, fences, landscaping, etc.

From 1975 - 1980 the growth of the PWF System was rapid. COFI and CWC estimate that by 1978 about 8 - 10,000 homes a year were built utilizing this system, by far the majority of which were in Western Canada.

Taking a mid figure of 1,750 and mid figure of 9,000 housing starts p.a. on PWF, the average board footage of lumber consumed would be approximately 15.75 million p.a.

This converts to about 1 million cu.ft. of treated PWF lumber (2x4s, 2x6s, 2x8s)

Therefore of the 4.9 million cu.ft. reported for 1981 in lumber and timbers category, included is about 1 million cu.ft. of PWF lumber, i.e. 20%

The remaining 3.9 million cu.ft. would typically be 2x4s, 2x6s for decking, 4x4 fence posts, landscaping timbers and ties plus some heavy timbers and bridge decking.

Part Three — RETAIL DISTRIBUTION IN N. AMERICA OF TREATED LUMBER & TIMBERS

In the study carried out in the U.S. by Data Resources Inc. of the lumber and timber treated market, they concluded that the treated lumber industry in the U.S. is 'largely retailer oriented' with 85% of the total volume produced now passing directly through the retailer. Of the total volume of lumber and timbers produced in 1981, 60% was used for outdoor applications, e.g., decks, patios, fencing, landscaping, etc. Of the retail volumes surveyed by DRI, CCA accounted for 95% of the chemical used, with a .40 retention being by far the most commonly used.

A breakdown of the product mix is shown in Table 5.

Note the heavy use of 2x4s and 2x6s for decking.

Table 5 — U.S. 1982 USAGE OF TREATED LUMBER & TIMBERS

2" dimension	- 55%	(decking etc.)
1" boards	- 9%	(fencing)
4" & up timbers	- 26%	(fencing & landscaping)
Others, FRTW PWF, etc.	10%	

(DATA Resources)

The actual breakdown of total U.S. demand for lumber and timbers by end use was given as:-

Residential Renovations (decks, patios, fences landscaping, etc.)	49%
New Residential Construction	24%
Other uses (Farm, Govt. Spec. jobs, etc.)	27%
	100%

Treater Distribution of the Market

USA.

In terms of production distribution of lumber and timbers in the U.S., DRI concluded that the treaters ship the bulk of the treated material directly to the retailer, i.e.,

29% to the chain retailers
33% to the independent retailers } 62%
24% to the wholesalers
and the rest to contractors, farmers or government jobs - 14%

Thus, 62% of all treater shipments of lumber and timbers are direct to the retailer.

However, it should be noted that of the 24% sold to the wholesaler, the majority of this also ends up in the retailers' yards and as mentioned earlier, 85% of the national production of treated lumber and timbers is eventually sold through the retailer.

DRI survey of the U.S. retailers revealed that of those surveyed, 89% handled treated wood, with very little fluctuation between the %s for the four U.S. regions.

It is apparent then that in the U.S., the accelerated growth of lumber and timbers treated with CCA took place within a national fervor for DIY construction and with a retail distribution system well in place to handle this growth.

CANADA

Even though the data provided by Statistics Canada is questionable in terms of total yearly volumes of treated lumber and timbers, the growth trends within the last six years closely match those observed in the U.S.A.

Based on discussions with wholesalers, retailers and treater/customers, we would estimate that the yearly volumes for treated lumber and timbers reported by Statistics Canada is under reported by about 35%, at least for the period 1979 - 1981.

By 1981 I would estimate that approximately 105 million FBM of treated lumber and timbers treated with CCA alone was produced in Canada in that year.

Of this amount we would further predict that at least 80% was sold through the retail trade and was typically made up of 2" dimension for decks, patios, etc., plus PWF lumber and plywood and a growing proportion of fencing material, 4" x 4" posts and 1" boards plus a growing use of landscape ties, 4" x 6"s and slabbed peeler cores.

Consumer demand for the product is far greater in Eastern Canada especially in the more heavily populated regions of Ontario and Quebec (with the exception of PWF which is still mainly a western market).

A recent random survey by T.S. Ltd. of 56 Vancouver, B.C. based retailers showed that 49 were stocking CCA treated wood products: typically 2" dimension, 4" square posts, some 1" fencing boards and landscape ties.
See Tables 6 & 7

Table 6 RETAIL LUMBER DEALER SURVEY
VANCOUVER, AUGUST, 1983

Total Dealers Surveyed	56
Stocking Treated Wood	49 - 87% (All CCA)
Non Stocking	7 - 13%

Table 7 PRESSURE TREATED WOOD SURVEY, VANCOUVER
31 DEALERS' RESPONSE

	MFBM SOLD P.A.				
	1-10	11-20	21-50	51-100	101-1000
No. of Dealers	9	4	5	5	8
% of Dealers	29	13	16	16	26

Whereas it has been pointed out that the majority of treated lumber and timbers in the U.S.A. moves directly from the treater to the retailer, i.e., 62% of the total volumes p.a. and only 24% to the wholesaler, this is certainly not the case in Canada.

Due to Canadian geographical considerations; a vast land mass, sparsely populated with less than 10% of the treating plants that the U.S. supports, distribution of the product (often over long distances from the plant to the retailers) becomes a much greater factor.

Canadian wholesalers with central distribution yards and their own trucking fleets play an essential role in meeting the retailers' needs with full or split truckload deliveries.

The wholesaler in Canada, based on our observations, handle at least 80% of the total treaters' production for lumber and timbers, PWF lumber and plywood, as well as farm fence posts. Relatively little is sold to the retailer on a direct basis from a treater/producer. Some volume is however treated for the retailer on a TSO (Treating Service Only) basis.

Part Four FUTURE PREDICTIONS TREATED LUMBER & TIMBERS

The DRI sudy projects a continuing U.S. growth of the CCA treated lumber and timber portion of the wood preserving industry with rapid growth occuring from 1981 - 1984. They forecast a 28% increase from 1982 - 1983. Assuming the U.S. economic recovery continues they predict further increases of 17% and 10% respectively p.a. from 1983 - 1984 followed by a temporary levelling out between 1985 - 1987.

In Canada from 1975 - 1981 the average annual growth rate for treated lumber and timbers was 21.2%. Even taking the Stats Canada total of 4.9 million cu.ft. in 1981, (78.4 million FBM) a continuing growth rate of 21.2% would lead to a total of 10.5 million cu.ft. produced in 1985. (169 million FBM)

Based on our observations of the Canadian market and obvious increasing demand for lumber and timbers for the residential remodelling market, we consider this % growth has at least occurred throughout 1982 and this year.

With forecasts of a moderate economic recovery taking place in Canada as well as the U.S.A., increased housing starts and consumer spending, should result in continuation of the growth cycle not only for outdoor construction but also for increased acceptance of the PWF System throughout Canada, including the Eastern Provinces.

Canada has a population of approximately 25 million people compared to over ten times that number in the U.S.A. The U.S.A. outnumbers Canada by about 10 - 1 in treating plant locations. Housing starts in the U.S.A. are predictably about ten times greater than in Canada.

However, on a per capita basis, the average U.S. consumer used two and a half times as much treated lumber and timbers as his Canadian neighbour in 81.

Some of this major difference in per capita usage is accounted for by climatic considerations; wood rots faster in the Southern U.S. and the South accounts for 40% of the total use of treated lumber and timbers. Nevertheless, the average consumer in the NE & N. Central regions of the U.S. uses considerably more treated wood than his Canadian neighbour.

It would therefore seem a reasonable conclusion that the Canadian market has quite a way to go yet before reaching saturation. There is certainly no reason to suppose that the residential market for treated lumber and timbers would reach maturity before the U.S. market did, i.e., early 1990s.

Although CCA has been by far the most dominant preservative used for the treatment of lumber and timbers in N. America, attempts have been made by various chemical manufacturers to introduce other alternate systems. Notable amongst these are the water dispersant pentachlorophenol systems. They are considered less expensive formulations than those incorporating a total light or mineral spirit solvent system, and certainly from an appearance standpoint, look promising. However, whether they will match the long term durability of earlier Penta systems in heavier oils or of CCA, especially in ground contact situations, still remains a matter of conjecture.

Factors that could restrict the growth of the treated lumber and timber market in Canada would be:-

(a) Non-availability of treatable species, Jack Pine, HemFir, Red Pine
(b) Poor treatment practises leading to premature failure of the product and resultant negative publicity
(c) The negative impact of any environmental restrictions on the use of currently accepted preservative systems, CCA & ACA or Penta

So far, both in the U.S.A. and Canada, healthy growth of the treated lumber and timber market has occurred during back-to-back years of economic recession.

The resiliency of this portion of the wood preserving industry in economic hard times has proven to be a welcome and often unexpected bonus to retailers, wholesalers and treaters alike.

It would appear that even in years of recession, when far fewer homes are built or traded, the urge to improve the existing home by addition of a deck, new fence or some landscaping, is still as strong as ever.

Part Five

ECONOMIC VALUE OF TREATING

In order to estimate the value of pressure treatment of lumber and timbers, one has to examine the service life of untreated wood. Wood will rot faster in soil contact than it will for above ground use. The rate of decay is affected very much by the climate as well as the type of soil the wood is in contact with.

Untreated SPF, HemFir, will rot out in less than two years in ground contact on the West Coast (reference Forintek/W.F.P.L. stake test data) whereas stake test data from Forintek/E.F.P.L. indicates that untreated Spruce and Pine will last somewhat longer, i.e., four to six years in Ontario.

For untreated wood used in above ground applications Forintek/E.F.P.L. has found that in their sash unit test, Red Pine and White Pine were rotting out in less than ten years.

A patio deck outside Timber Specialties' offices in White Rock, constructed of 1" Douglas Fir untreated boards on 2 x 4 sleepers has been in place for just under ten years. Nearly all the 1 x 4 boards show substantial decay whilst at least 20% of the boards have structurally failed. Likewise, the 2 x 4 sleepers are in very poor shape.

The following cost saving comparison between treated and untreated wood is predicated on a service life for untreated wood of less than ten years. This would typically apply to a fence or deck where there is a mixture of above ground and ground contact material. Although ten years is probably a generous life expectancy for untreated wood, particularly on the West Coast and regions of Ontario, it does serve to illustrate a minimum $ saving that can be realized for pressure treated wood after ten and twenty years' service life.

EXAMPLE 1.

TREATED VS UNTREATED DECK, 1,000 FBM
SERVICE LIFE TREATED DECK: 30 YRS.
SERVICE LIFE UNTREATED DECK: 10 YRS.

		ORIGINAL COST	AFTER 10 YRS.	AFTER 20 YRS.
BOB'S	UNTREATED DECK	$375.00	$611.00	$994.00
	(10 YR. SERVICE LIFE)	-------	375.00	986.00
	CUMULATIVE TOTALS	$375.00	$986.00	$1,980.00!!
JACK'S	TREATED DECK	$550.00	.00	.00
	(30 YR. SERVICE LIFE			
	CUMULATIVE TOTALS	$550.00	$550.00	$550.00
	$ SAVINGS FOR JACK'S TREATED DECK	- $175.00	+ $436.00	+ $1,430.00

In Example 1 we can see that for 1,000FBM of untreated wood, a typical price in 1983 would be $375.00. If this were to be pressure treated we would be looking at an additional $175.00, i.e., $550. per M. The replacement cost after ten and twenty years respectively for untreated wood is based on an annual inflation factor of 5%. Therefore, in the case of Bob's untreated deck, we can see that after ten years his total bill would be $986. or after twenty years would be $1,980.00.

If the treated deck uses pressure treated material produced in accordance with CSA Standards, it should have a predicted service life in excess of thirty years. Therefore after twenty years, the investment remains at $550., with a savings after this period of $1,430.

In 1982 at least 100 million FBM of treated lumber and timbers was produced. If we look at Example 2 based on 100 million FBM per annum, we can project a $ saving of 43.6 million $s after ten years or 143 million $s after twenty years.

EXAMPLE 2.

CANADA
MILLIONS $s SAVINGS ON 100 MILLION FBM TREATED VS UNTREATED

		0	10 YEARS	20 YEARS
BOB	SPENDS UNTREATED	37.5	73.6	198.0
JACK	SPENDS TREATED	55.0	55.0	55.0
	MILLIONS $s SAVED	- 17.5	+ 43.6	+ 143.0

It should be stressed that this is a minimum $ savings based on a service life of ten years for untreated material. In actuality there would certainly be replacement of ground contact material taking place well before the end of the ten year period.

The potential savings of $143,000,000 based on one year's production should certainly be considered a worthwhile investment in our number one natural resource; a resource which is only renewable if it is used judiciously.

References:-

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5. Timber Specialties Ltd., - Survey of Vancouver Retailers and Discussions Major Canadian Wholesalers