WORLD-WI
CAPACITOR AROCLOR 1968 SALES
BY PRODUCERS IN THE VARIOUS COUNTRIES

	Country	Total Volume	Monsanto	Bayer	Prodelec	Caffaro	Kaneka
		THOUSANDS OF POUNDS					
	Domestic						
1.	U.S.A.	26,400	26,400(USA)	-	-	-	-
2.	UK	2,640	2,640(ME)	-	-	-	-
3.	Germany	2,465	-	2,355	110	-	-
4.	France	1,727	-	220	1,386	121	-
5.	Italy	3,398	320(ME) 174(USA)	1,034	1,122	748	-
6.	Japan	804	364(USA)	220	220	-	?
	EEC Now Domestic						
7.	Holland(Bayer)	396	-	396	-	-	-
8.	Belgium(Prodelec)	506	-	-	506	-	-
	EFTA						
9.	Switzerland	330	-	66	264	-	-
10.	Austria	198	-	154	44	-	-
11.	Denmark	99	11(ME)	22	66	-	-
12.	Norway	22	22(ME)	-	-	-	-
13.	Finland	176	132(ME)	-	44	-	-
14.	Sweden	737	77(ME)	-	660	-	-
15.	Portugal	-	-	-	-	-	-
	South Europe						
16.	Spain	818	231(ME) 26(USA)	-	561*	-	-
	*Manufactured in Spain by Flix, affiliate of Prodelec						
17.	Yugoslavia	484	-	264	220	-	-
18.	Israel	99	66(ME)	-	33	-	-
19.	Poland	385	330(ME)	-	55	-	-
20.	Romania	264	-	264	-	-	-
21.	Czechoslavakia	11	11(ME)	-	-	-	-
22.	Hungary	44	-	44	-	-	-
23.	Bulgaria	-	-	-	-	-	-
24.	East Germany	198	-	198	-	-	-
25.	Russia	-	-	-	-	-	-
26.	Canada	1,206	1,206(US	-	-	-	-
27.	Mexico	508	508(USA)	-	-	-	-
	South America						
28.	Argentina	280	38(USA)	88	154	-	-
29.	Brazil	650	560(USA)	70	20	-	-
	Asia-Pacific						
30.	Australia	950	950(USA)	-	-	-	-
31.	Hong Kong	45	1(USA)	44	-	-	-
32.	Taiwan(Formosa)	165	-	55	110	-	-
33.	India	509	172(ME) 7(USA)	220	110	-	-
34.	Red China	440	-	-	-	440	-
	Others	166	1(USA)	165	-	-	-
	Totals	47,120	4,012(ME) 30,235(USA) 34,247(Combined)	5,879	5,685	1,309	-

0056366

LEXOLDMON006590

WORLD-WIDE
TRANSFORMER ASKAREL - 1968 SALES
BY PRODUCERS IN THE VARIOUS COUNTRIES

	Country	Total Volume	Monsanto	Bayer	Prodelec	Caffaro	Kaneka
		THOUSANDS OF POUNDS					
	Domestic						
1.	U.S.A.	18,700	18,700 (USA)	-	-	-	-
2.	UK	752	559 (ME)				
			193 (USA)	-	-	-	-
3.	Germany	4,510	-	4,300	?	210	-
4.	France	7,662	-	?	7,330	330	-
5.	Italy	1,550	-	110	-	1,440	-
6.	Japan	200	45 (USA)	-	-	-	155
	EEC and Nondomestic						
7.	Holland	110	-	110	-	-	-
8.	Belgium	1,144	-	616	308	220	-
	EFTA						
9.	Switzerland	231	11 (ME)	55	110	55	-
10.	Austria	55	-	55	-	-	-
11.	Denmark	-	-	-	-	-	-
12.	Norway	13	13 (ME)	-	-	-	-
13.	Finland	-	-	-	-	-	-
14.	Sweden	-	-	-	-	-	-
15.	Portugal	220	-	110	110	-	-
	South Europe						
16.	Spain	2,200	500 (ME)	-	1,700*	-	-
		*Made in Spain by Flix, associate of Prodelec					
17.	Yugoslavia	176	-	-	176	-	-
18.	Israel	165	165 (ME)	-	-	-	-
	East Europe						
19.	Poland	22	-	22	-	-	-
20.	Romania	11	-	11	-	-	-
21.	Czechoslovakia	-	-	-	-	-	-
22.	Hungary	11	-	11	-	-	-
23.	Bulgaria	-	-	-	-	-	-
24.	East Germany		(Have their own chlorinated biphenyl plant)				
25.	Russia		(Have their own chlorinated biphenyl plant)				
26.	Canada	2,121	2,121 (USA)	-	-	-	-
27.	Mexico	200	200 (USA)	-	-	-	-
	South America						
28.	Argentina	2	2 (USA)	-	-	-	-
29.	Brazil	204	160 (USA)	44	-	-	-
30.	Puerto Rico	1	1 (USA)	-	-	-	-
31.	Columbia	17	17 (USA)	-	-	-	-
32.	Peru	25	25 (USA)	-	-	-	-
33.	Chile	80	80 (USA)	-	-	-	-
	Asia-Pacific						
34.	Australia	320	144 (USA)	-	176	-	-
35.	India	144	1 (USA)	88	55	-	-
36.	Red China	88	-	-	88	-	-
37.	Vietnam	3	3 (USA)	-	-	-	-
38.	Turkey	1	1 (USA)	-	-	-	-
39.	Iraq	1	1 (USA)	-	-	-	-
40.	Pakistan	67	67 (USA)	-	-	-	-
41.	South Africa	75	75 (USA)	-	-	-	-
42.	Others	1,224	264 (ME)	770	-	187	-
			3 (USA)				
	Totals	42,303	21,839 (USA)	6,302	10,053	2,442	155
			1,512 (ME)				
			23,351 (Combined)				

0056367

LEXOLDMON006591

AREAS WHERE MONSANTO, ME
SHOULD OR SHOULD NOT
CONCENTRATE MARKETING

Country	Remarks
Poland	Pursue strongly
Romania	Pursue if we can make a swap arrangement as done by Bayer.
Czechoslovakia	Pursue strongly
East Germany	Do not pursue
Russia	Evaluate potential
Spain	General Electric put Flix in business; strong transformer market. Monsanto, ME return is low. Maintain present limited capacitor market position and remain alert to developments.
Italy	Monsanto, ME return is poor. Market is relatively large. To justify strong ME pursuit would require major step like purchasing Caffaro.
Yugoslavia	Pursue strongly
Sweden	Pursue strongly
Norway	Pursue strongly
Finland	Pursue strongly
Denmark	Business indicated small
Switzerland	Competition very strong against us. Low priority.
Holland	Do not pursue
Belgium	Do not pursue
Austria	Pursue strongly

0056368

LEXOLDMON006592

Country	Remarks
Portugal	Do not pursue
Israel	Hold present business
Hungary	Evaluate potential
Bulgaria	Evaluate potential

SUMMARY

The strong areas for Monsanto, ME are:

The UK, Scandanavia and Eastern Europe. Considering local competition, Spain and Italy are worthy for maintaining business.

0056369

LEXOLDMON006593

AREAS WHERE MONSANTO U.S.A.

SHOULD CONCENTRATE MARKETING

Country	Remarks
U.S.A	Pursue Strongly
Canada	Pursue Strongly
Australia	Pursue Strongly
India	Pursue Strongly
Japan	Pursue Strongly
Mexico	Pursue Strongly
Brazil	Pursue Strongly
Argentina	Pursue if economics warrant.

We hold essentially 100 percent of the business in all of these countries, except Japan and India. Our efforts in these latter countries are just beginning. Both have good potentials, and the market magnitudes need to be confirmed.

0056370

LEXOLDMON006594

1968 WORLD SALES OF CAPACITOR AND/OCLOR
AND TRANSFORMER ASKARELS BY PRODUCERS

Manufacturers	Use	MILLIONS OF POUNDS Domestic	Export	Grand Totals
Monsanto U.S.A.	Capacitor	26.4	3.9	30.3
	Transformer	18.7	3.1	21.8
	Totals	45.1	7.0	52.1
Monsanto U.K.	Capacitor	2.6	1.4	4.0
	Transformer	0.8	0.8	1.6
	Totals	3.4	2.2	5.6
Bayer	Capacitor	2.4	3.4	5.8
	Transformer	4.3	2.0	6.3
	Totals	6.7	5.4	12.1
Prodelec	Capacitor	1.4	3.6	5.0
	Transformer	7.3	1.1	8.4
	Totals	8.7	4.7	13.4
Caffaro	Capacitor	0.8	0.5	1.3
	Transformer	1.4	1.1	2.5
	Totals	2.2	1.6	3.8
Flix	Capacitor	0.6	-	0.6
	Transformer	1.7	-	1.7
	Totals	2.3		2.3
Kanegafuchi	Capacitor	4.0 (Est)	-	4.0
	Transformer	0.2	-	0.2
	Totals	4.2		4.2
East Germany		?		?
Russia		?		?
		72.6	20.9	93.5

Monsanto has slightly over 60 percent of the total world market, but only 44 percent of the export sales which, however, represent only 23 percent of the total market.

0056371

LEXOLDMON006595

MONSANTO, ME COMPETITIVE SALES
IN THE EUROPEAN MARKET AREA ONLY,
AND EXCLUSIVE OF SALES IN THE UK,
FRANCE AND GERMANY

MILLIONS OF POUNDS

Company	Capacitor Aroclor Type Pounds	Capacitor Aroclor Type Percent of Total	Transformer Pyroclor Type Pounds	Transformer Pyroclor Type Percent of Total
Monsanto, ME	1.36	16%	0.69	11%
Bayer	2.66	31%	1.10	17%
Prodelec	3.13	36%	0.70	10%
Caffaro	0.87	10%	2.27	36%
Flix	0.56	7%	1.70	26%
Totals	8.58		6.46	

From these data it is indicated that Monsanto, ME holds a rather low percentage of sales in the European market area, and that their ROW sales (outside the European market) amount to only about 200,000 pounds of capacitor Aroclor and 260,000 pounds of transformer Pyroclor.

P. G. Benignus
April 4, 1969

/ecd

0056372

LEXOLDMON006596

U.S.A. DOMESTIC AND U.S.A. EXPORT
DIELECTRIC FLUID SALES
IN
MILLIONS OF POUNDS

	Transformer			Capacitor			Grand
Year	U.S.A.	Export	Total	U.S.A.	Export	Total	Total
1966	16.5	3.4	19.9	24.5	2.9	27.4	47.3
1967	20.0	3.1	23.1	25.7	3.4	29.1	52.2
1968	18.7	3.1	21.8	26.4	4.5	30.9	52.7
1969	20.0	3.5	23.5	27.5	4.3	31.8	55.3
1970	21.0	3.7	24.7	28.5	4.8	33.3	58.0
1971	21.6	4.1	25.7	29.8	5.0	34.8	60.5
1972	22.2	4.3	26.5	31.3	5.2	36.5	63.0
1973	23.2	4.5	27.7	32.8	5.5	38.3	66.0

P. G. Benignus
D. R. Pogue
April 2, 1969

/ecd

0056373

LEXOLDMON006597

HISTORICAL U.S.A. DOMESTIC

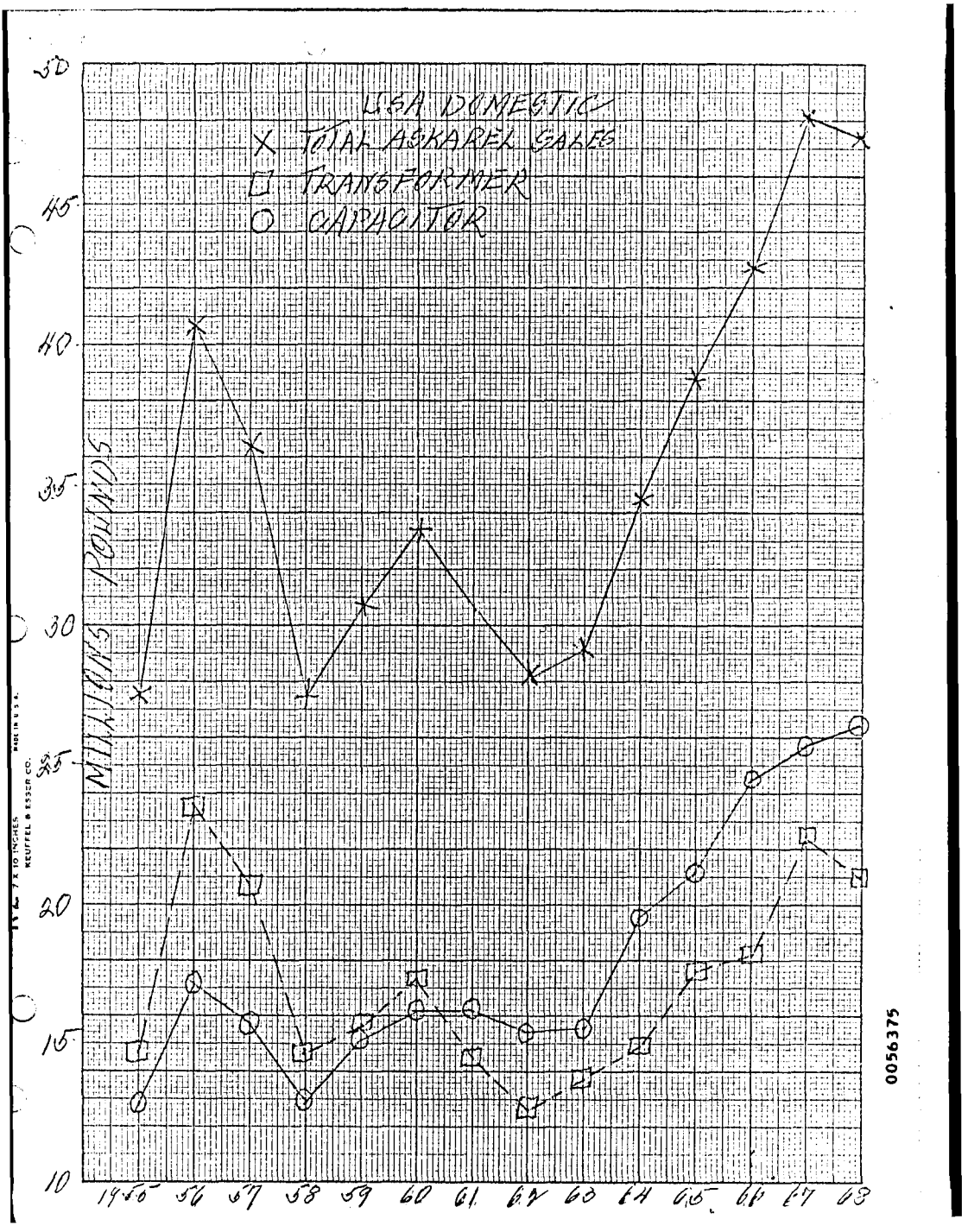
ASKAREL DIELECTRIC CONSUMPTION

IN MILLIONS OF POUNDS

Year	Transformer	Capacitor	Totals
1955	14.6	12.9	27.5
1956	23.5	17.1	40.6
1957	20.7	15.7	36.4
1958	14.6	12.9	27.5
1959	15.6	15.1	30.7
1960	17.3	16.1	33.4
1961	14.4	16.1	30.5
1962	12.8	15.4	28.2
1963	13.7	15.6	29.3
1964	14.9	19.6	34.5
1965	17.8	21.1	38.9
1966	18.2	24.5	42.7
1967	22.4	25.7	48.1
1968	21.0	26.4	47.4

0056374

LEXOLDMON006598



LEXOLDMON006599

11 NOPIX

GENERAL BUSINESS CYCLES VS ASKAREL SALES

Historically and today and no doubt in the future years Askarel sales closely follow the general business cycles of our overall economy.

I. During the 1941 to 1943 World War II years, Askarel sales advanced strongly as did our economy. Then Askarel sales went down and hit a low which came in 1945 -- the exact time of a short recession in our economy. Then Askarel sales advanced as we became involved with Korea and as our industrial economy expanded due to this involvement in Korea. Following this, our Askarel sales went down during the 1953-1954 period when there was indeed an 11 month downturn in the overall United States economy.

This brings us up to the initial date shown on this chart.

II. Then in 1955-1957 came the most vigorous post World War II up-turn in our economy and Askarel sales strongly reflected this.

III. 1958 was a weak business year and so were Askarel sales.

IV. Then business improved until 1960 and then there was the 1960-1961 nine-month set-back and Askarel sales reflected it.

V. Then since 1961 we have had nearly 100 months (8 years) of increasing expansion.

0056376

LEXOLDMON006600

1968-1969 DOMESTIC U.S.A.

CAPACITOR AROCLOR PRODUCT MIX

Capacitor Markets	Percent	Pounds of Aroclor	Finished Capacitor Dollar Value
Power Capacitors	45%	11,900,000	25 million
Ballast	28%	7,400,000	22 million
Motor run	23%	6,000,000	16 million
Induction Heating and other	4%	1,100,000	12 million
		26,400,000	

0056377

LEXOLDMON006601

1968-1969 CAPACITOR ARCTOR DISTRIBUTION

IN THE DOMESTIC U.S.A. MARKET

IN THOUSANDS OF POUND.

Manufacturer	Total Par. in 1968	Used for the Major Markets: Power Capacitors Pounds	Power Capacitors % Mkt	Motor Run Capacitors Pounds	Motor Run Capacitors % Mkt	Ballast Capacitors Pounds	Ballast Capacitors % Mkt
General Electric	9,900	4,150	34.8%	1,200	20.0%	4,390	59.0%
Westinghouse	3,850	3,500	29.4%	-	-	300	4.1%
McGraw Edison	1,418	1,300	11.0%	-	-	-	-
Sangamo	2,851	2,700	22.7%	-	-	-	-
Cornell Dubilier	1,947	250	2.1%	840	14.0%	800	11.7%
[illegible] Unimes	870	-	-	870	14.5%	-	-
[illegible]	1,020	-	-	1,020	17.0%	-	-
Sprague	1,417	-	-	1,140	19.0%	300	4.1%
Aerovox	1,362	-	-	930	15.5%	430	5.9%
Electronic Components	1,127	-	-	-	-	1,120	15.2%
	25,772	11,900	100%	6,000	100%	7,400	100%

In 1968 all capacitor makers in the U.S.A. purchased 26,400,000 pounds of [illegible]. About four percent of this was used for induction heating, DC, energy storage, and minor [illegible] in the [illegible] of our major market outlets.

0056378

LEXOLDMON006602

1968 VERSUS 1969 DOMESTIC

CAPACITOR AROCLOR SALES

IN THOUSANDS OF POUNDS

	Jan	Feb	Mar	Apr	
1968	2,729	2,651	3,060	2,552	
1969	2,195	2,193	2,577	2,167	
Difference	- 534	- 458	- 483	- 385	= -1,860,000

Four Months

	1968	1969	Diff.	
Westinghouse	1,996	987	-1,009	
McGraw Edison	752	385	- 367	
Sangamo	981	821	- 160	= -1,536,000

Sales to power capacitor makers accounts for 85 percent of our sales decrease the first four months of 1969 versus 1968.

0056379

LEXOLDMON006603

1968-1969 AROCLOR FOR POWER CAPACITORS

DOMESTIC U.S.A.

Capacitor Manufacturers	Total lbs purchased in 1968	% Used for Power Capacitors	Pounds of Aroclor used for Power Capacitors in 1968	1968-1969 Conversion to Plastic Film
McGraw Edison	1,418,000	92%	1,300,000	30%
General Electric	9,900,000	42%	4,150,000	75%
Westinghouse	3,600,000	97%	3,500,000	65%
Sangamo	2,860,000	95%	2,700,000	35%
Aerovox	1,362,000	very small	-	-
Sprague	1,417,000	very small	-	-
C-D	1,950,000	13%	250,000	-
Totals	22,507,000		11,900,000	

0056380

LEXOLDMON006604

EFFECT OF TECHNICAL CHANGES ON AROCLOR REQUIREMENTS.

	POUNDS OF AROCLOR
I. USE OF POLYPROPYLENE FILM IN POWER CAPACITORS	ANNUAL LOSS OF 5-7 MILLION POUNDS.
II WESTINGHOUSE USE OF 100% AROCLOR 1242 AND USE OF 60% AROCLOR 1254 IN TRANSFORMER ASKAREL'S	ANNUAL GAIN OF 4 MILLION POUNDS

0056381

LEXOLDMON006605

17

1968 VS 1969 DOMESTIC TRANSFORMER ASKAREL SALES

IN THOUSANDS OF POUNDS

	JAN.	FEB.	MARCH	APRIL	TOTALS
1968	2,032	1,231	1,637	1,565	6,465
1969	1,138	1,028	1,302	1,233	4,701
Difference	-894	-203	-335	-332	= -1,764

FOUR MONTHS

	1968	1969	Diff.
G.E., Rome, Georgia	741	273	-468
G.E., Pittsfield, Mass.	325	318	- 7
Westinghouse (Sharon, South Boston and Phoenix)	2,447	1,751	-696
Allis Chalmers	741	437	-304
ITE Circuit Breaker	629	534	- 95
TOTALS	4,883	3,313	-1,570

0056382

LEXOLDMON006606

DETERMINATION OF THE POPULARITY FACTOR OF ASKAREL TRANSFORMERS

Year	Lbs. Askarel per KVA	Lbs. Askarel Required $\overline{M}$	Askarel KVA $\overline{M}$	New KVA Installed $\overline{M}$	M/I
1959	5.40	13.40	2.48	73.5	3.37%
1960	5.00	17.05	3.41	58.0	5.88
1961	4.50	14.10	3.13	68.5	4.57
1962	4.30	12.60	2.93	47.5	6.17
1963	4.08	13.15	3.22	59.5	5.14
1964	3.96	14.40	3.64	62.0	5.87
1965	3.47	17.20	4.96	66.5	7.45
1966	3.20	17.50	5.47	70.5	7.77
1970	3.20	22.00	6.87	81.0	8.40

On the average, an askarel transformer in the 500-7500 KVA range manufactured in 1965 by Westinghouse used 3.47 lbs. of askarel (Inerteen) per KVA. Also, in 1965, 17.20 $\overline{M}$ lbs. of askarel blends were required for domestic askarel transformers. Thus a factor can be developed for total domestic askarel KVA manufactured in 1965.

$$\frac{17.20\ \overline{M}\ \text{lbs. askarel}}{1} \times \frac{\text{KVA}}{3.47\ \text{lbs. askarel}} =$$

$4.96\ \overline{M}$ askarel KVA added in 1965

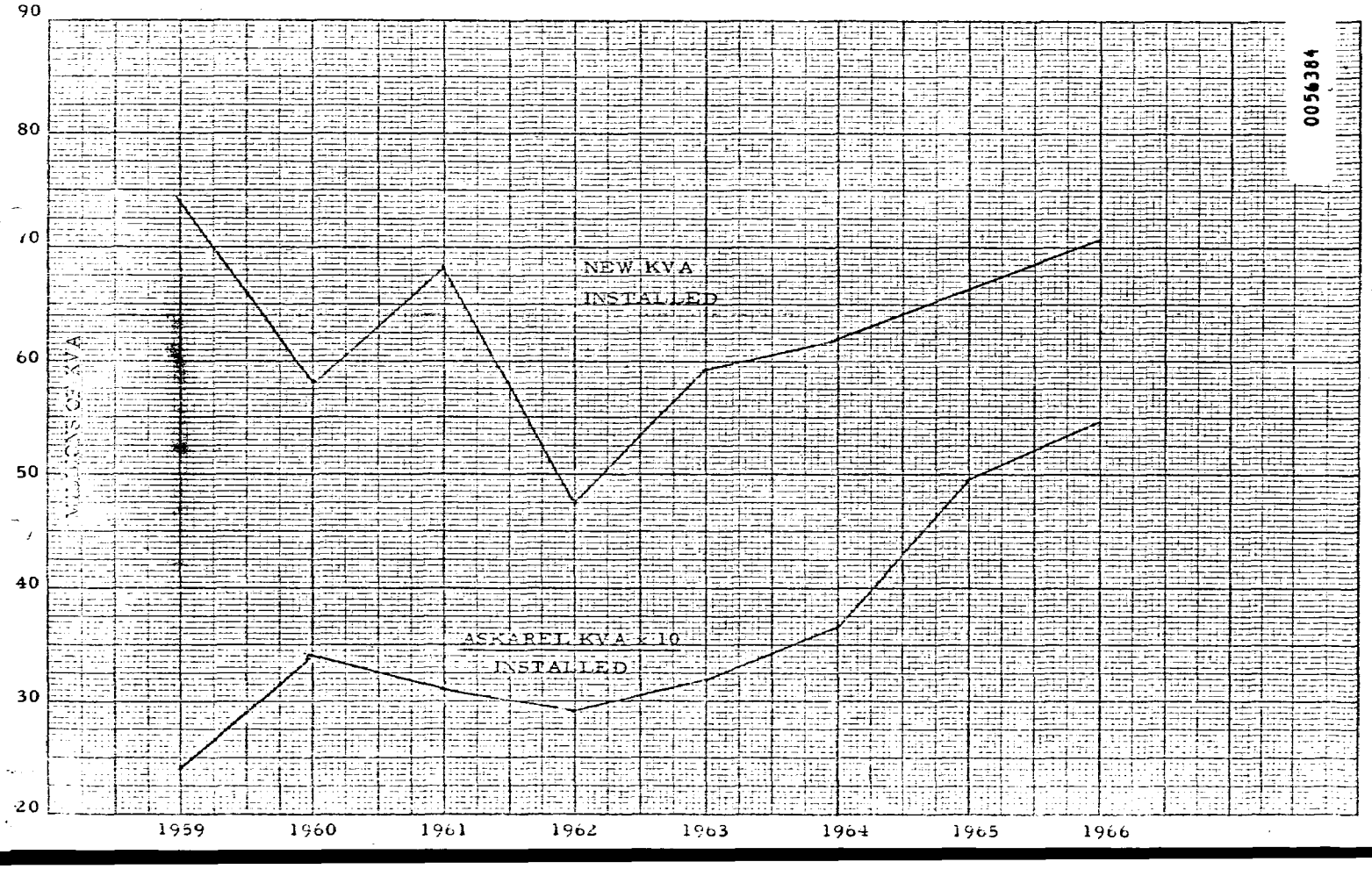
Total new transformer KVA capacity added in 1965 was $66.5\ \overline{M}$. Thus, an approximate percent relationship can be calculated for new askarel KVA compared to total new KVA additions:

$$\frac{4.96\ \overline{M}\ \text{askarel KVA}}{66.5\ \overline{M}\ \text{KVA}} \times 100 = 7.45\%$$

0056383

LEXOLDMON006607

20 X 20 TO THE INCH 46 1240
7 X 10 INCHES
KEUFFEL & ESSER CO.



LEXOLDMON006608

TRANSFORMER ASKAREL

FOR THE DOMESTIC U.S.A. MARKET

IN MILLIONS OF POUNDS

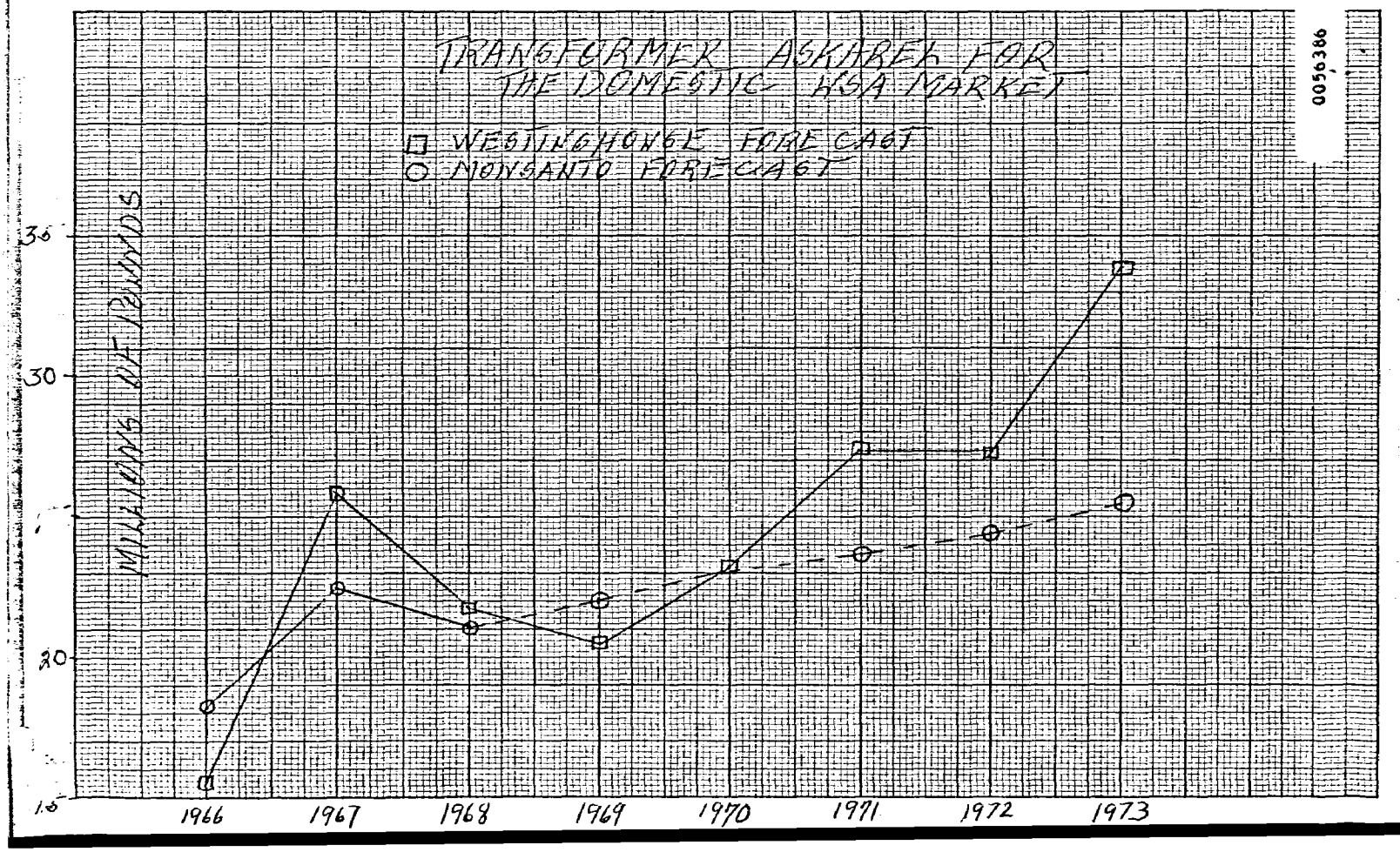
Year	Westinghouse Forecast	Monsanto Actual and Forecast	Askarel Sold and Forecast to be Sold by Monsanto
1966	15.6	18.2	16.5
1967	25.9	22.4	20.0
1968	21.8	21.0	18.7
1969	20.5	22.0	20.0
1970	23.2	23.0	21.0
1971	27.3	23.6	21.6
1972	27.3	24.2	22.2
1973	33.9	25.3	23.2

0056385

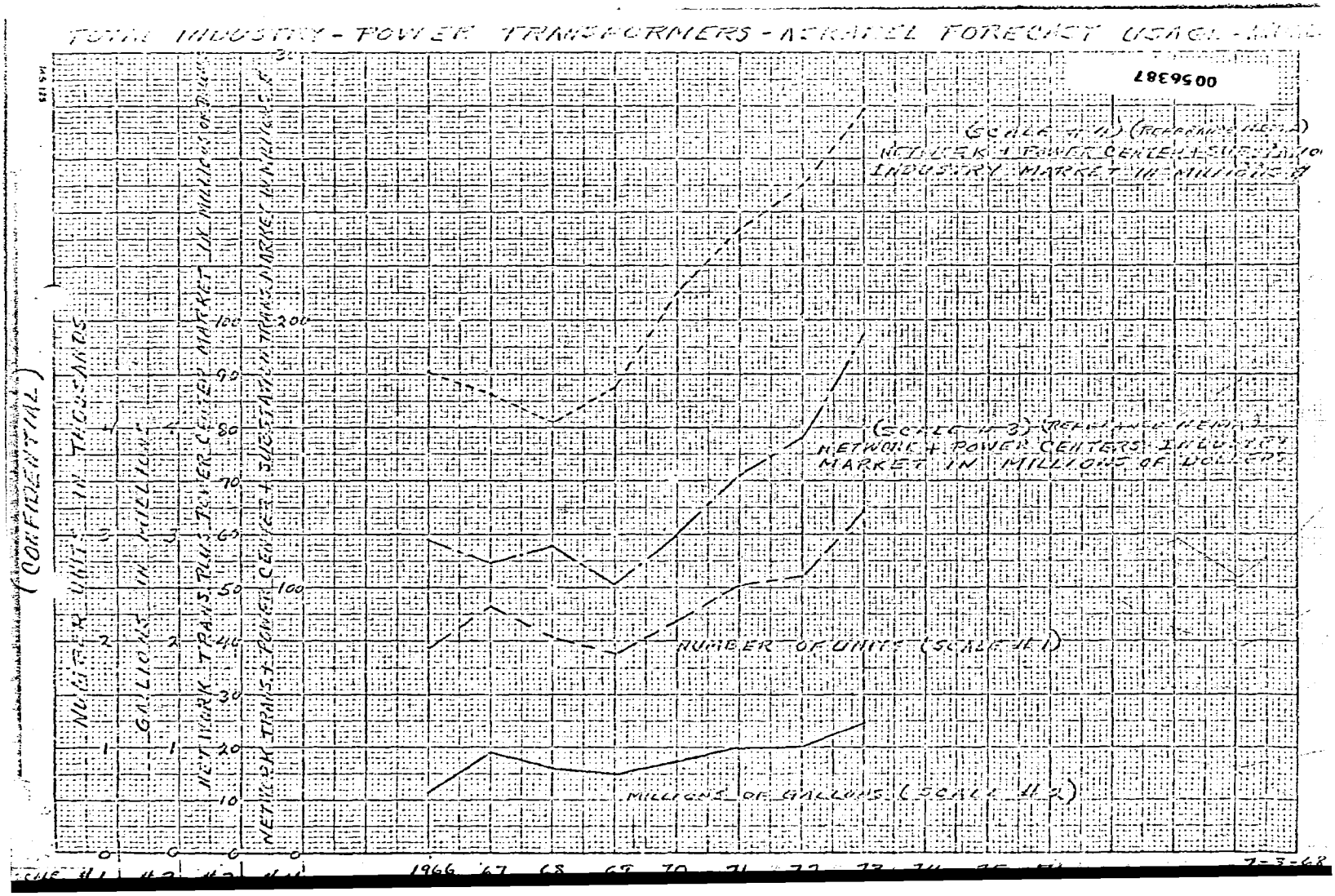
LEXOLDMON006609

K·E 20 X 20 TO THE INCH 46 1240
7 X 10 INCHES MADE IN U.S.A.
KEUFFEL & ESSER CO.

0056386



LEXOLDMON006610



LEXOLDMON006611

1969-1970 PREDICTION FOR WSA DOMESTIC TRANSFORMER AND CAPACITOR ASKAREL USE.

I. TRANSFORMER ASKAREL:

SALES MAY BE DOWN 4 TO 6 MILLION POUNDS ABOUT 2.0 MILLION OF THIS IS ATTRIBUTED TO GENERAL ELECTRIC, ROME, GA.

HOWEVER THESE PEOPLE GAVE US THEIR FORECAST SHOWING A STEADY INCREASE:

1968	3,100,000	POUNDS
1969	3,500,000	"
1970	4,000,000	"
1971	4,600,000	"

II. CAPACITOR AROCHOR:

WHILE DEMAND FOR AROCHOR CAPACITOR WILL INCREASE STEADILY OUR AROCHOR SALES COULD BE DOWN AT LEAST 1.5 MILLION POUNDS IN 1969-1970.

0056388

LEXOLDMON006612

2A

MONSANTO DOMESTIC USA CAPACITOR AND

TRANSFORMER ASKAREL SALES

MILLIONS OF POUNDS

	1968 Actual	1969 Budget	1969 Now Estimated
Capacitors	26.4	29.7	25.5
Transformers	18.7	24.5	15.5
TOTALS	45.1	54.2	41.0

This reflects a possible 1969 sales reduction of 24.3% versus the official 1969 budget and a 1969 sales 9% below 1968 sales in terms of pounds.

Pronounced technical factors influence this, but of greater impact will be the ability of our government to succeed in slowing down our over-heated economy.

0056389

LEXOLDMON006613