Impact of High Prices Of Raw Rubbers On The Rubber Manufacturing Industry.

Paper presented by Shri D.S. Kulkarni on the occasion of the Symposium of the Indian Rubber Industries Association held on 7th August, 1965.

Introduction:

The rubber industry in India which was practically non existent and economically insignificant until the last world war, has, with-in the short span of a quarter of a century, come to occupy an important position in the national economy of the counrty. The industry made rapid strides during and after the war years and despite the many handicaps, technical and material, it was able to meet the exacting and difficult standards for essential and strategic rubber goods, and the tempo of development has continued all throughout - thanks to the rapid expansion of the economy under the impetus of five year plans. Manufacturing almost every con-ceivable item from the giant earth moving tyres to tiny balloons, the industry is consuming today close to 100,000 tons of rubbers giving direct employment to about 75,000 people. With an annual turnover of about 120 crores, the manufacturing operations of the industry are concentrated in some 750 units ranging from vast industrial complexes like the automabile tyres and tubes to one man unit for moulded rubber products. This phenomenal progress of the industry in India is a proud record of achievement of a dynamic industry, and a tribute to the spirit of free enterprise operating under democratic planning. Although there has been a growing re-alisation of the vital importance of rubber as a strategic mater-ial in peace and war, and of the need for a balanced development of the same, as not only desirable but essential, to the progress and prosperity of the nation, the mounting cost of production in the context of the rising spiral of prices of industrial raw materials to which rubber industry is no exception, the industry of late has been working with considerable strain and its competitive character in the international market is adversely affected causing grave concern and anxiety both to the industry and the Government.

Prices reflect the cost of manufacture. Hence our analysis should commence with the general comparison of prices and the impact of changes in the prices of major raw materials that constitute the bulk of manufacturing costs on the rubber manufacturing industry in this country. I have for the purpose of this discussion taken the basic raw material - the Rubber - Natural, Synthetic and

processed fabrics to about 90% in the case of foam rubber. It would however be necessary to decide before we proceed further, as to what is the basic price of which the comperison is made while evaluating the impact of prices on the manufacturing costs. For this purpose, I propose to review the prices of raw rubber prevailing in 1950 and compare them with those prevailing in 1965 i.e. a period of fifteen years during which the industry has taken firm roots in the economic soil of the country. This comparison shall necessarily have to be made on the basis of the international price for a similar product as also on the basis of the changes in the indigenous price of the said product. This period of fifttten years is again divided into three periods of five years each, 1950 to 1954, 1955 to 1959 and 1960 to 1964 for the sake of convenience.

Prices:

Given below in Table 1, are the prices for natural, synthetic and reclaim rubbers in Indian and international market during the period under review.

T A B L E 1

Prices of Indian & Imported Rubber in Rs.per kg.from 1950 to 1965

Year	Natural		Synthetic		Reclaim	
	Indian F.O.R. Bombay	Imported (C.I.F. including duty)	Indian F.O.R. Bombay	Imported (C.I.F. including duty)	Indian F.O.R. Bombay	Imported (C.I.F. including duty)
1950	2.06	3.69	-	1.98	-	0.94
1954	3.10	2.28	-	2.39	-	1.10
1955	3.37	3.91	-	2.39	-	1.12
1959	3.48	3.64	-	2.50	-	1.19
1960	3.48	3.87	-	2.50	-	1.21
1964	3.60	2.84	4.05	2.90	1.55	1.47
1965	3.60	3.24	4.05	3.15	1.55	1.58

I must explain here that the prices given are for RMA-1 in respect of natural rubber, Indian and imported and that for synthetic they are for the General purpose synthetic rubber, though, I know that Special purpose synthetic rubbers like the butyl, nitrile the chloroprene type are also imported during this period as also natural rubber in grades other than RMA-1. This is obviously done

on the cost of the rubber industry, due consideration has been given to the weighted averages of various types of rubbers processed by the industry. It is evident from the above figures that natural rubber prices in the indigenous market have gone up from Rs.2.06 per kg. in 1950 to Rs. 3.60 per kg. in 1965 and that the imported prices have declined from Rs.3.69 per kg. in 1950 to Rs.3.24 per kg. in 1965. Until about 1957 there was no import duty on rubber and this was introduced in May 1957 with an initial duty of 5%. The duty was stepped up to 10% in March 1961, and 22% in April 1963. Adding to this the regulatory import of 10% introduced in February 1965, the present duty on rubber is 32%. Likewise a 30 p. cess per kg. payable by the manufacturer was introduced from April 1961, prior to which the cess was only 13 p. and this was incorporated in the maximum control rates fixed by the Government. The prices shown in Table 1 include the cess in force from time to time as also the import duty in force during the period reviewed.

It is also evident that the indigenous synthetic rubber came on the Indian scene by about the middle of 1963 with an introductory price of Rs.4.45 per kg. F.O.R. Bombay which is now reduced to Rs. 4.05. The imported synthetic rubber price have comparatively remained steady from about 1954, and the figure of Rs. 2.90 per kg. in 1964 includes a duty of 22% and for 1965, a duty of 32%. The reclaim rubber prices have also remained more or less steady in the international market, and the 1964 price of Rs.1.47 per kg. includes a duty of 22% and the 1965 figure a duty of 32%. As against this the Indian price of Rs. 1.55 is higher by 8 p. per kg. in 1964 where as for 1965, the Indian price is cheaper by 3 p. per kg.

Consumption Patterns:

The consumption figures for natural, synthetic and reclaim rubber are given in Talbe II.

T A B L E II.

Consumption of Rubber In Long Tons

Period	Year	Natural	Synthetic	Reclaim	Total
1	1950	17,735	1	-	17,736
	1954	25,487	19	2,230	27,736
11	1955	27,543	106	2,502	30,151
	1959	38,663	4,340	4,451	47,454
111	1960	45,215	6,457	5,321	56,993
	1964	60,076	14,062	9,006	83,144
Estimates:-1965		70,000	20,000	10,000	100,000

While it is evident from the above figures that natural rubber consumption has gone up by about 295 percent in the 15 year period its percentage to the overall has dropped to 70%. Where as synthetic and reclaim have increased their percentage to the overall amost from a nil to 20 and 10 with a consumption figure of about 20,000 and 10,000 tons respectively.

The above figures of consumption shall have to be ~~given~~ again divided into Indian and imported in order to obtain their respective contribution to the overall value, for, the prices of these materials have displayed wide variation in the Indian and international markets.

The figures of consumption of natural, synthetic and reclaim with breakdown figures for Indian and Imported as also their respective value are given in the Table 111.

T A B L E 111

Consumption Of Rubber In Long Tons from -1950 - 1964.

	Natual			Synthetic			Reclaim		
Yr.	Indian	Imported	Total	Indian	Imported	Total	Indian	Imported	Total
1950	15,600	2,150	17,750	-	1	1	-	-	-
1954	21,500	4,000	25,500	-	20	20	-	2,230	2,230
1955	22,500	5,000	27,500	-	100	100	-	2,500	2,500
1959	23,400	15,300	38,700	-	4,400	4,400	-	4,450	4,450
1960	24,800	20,500	45,300	-	6,500	6,500	-	5,330	5,330
1964	42,700	17,300	60,000	10,500	3,500	14,000	5,600	3,400	9,000

Value of Rubber Consumed in Rs.Lakhs From 1950-1964

1950	321	79	400	-	-	-	-	-	-
1954	666	91	757	-	.48	.48	-	25	25
1955	758	195	953	-	2.4	2.4	-	28	28
1959	814	556	1,370	-	110	110	-	53	53
1960	863	793	1,656	-	162	162	-	64	64
1964	1,537	558	2,095	425	101	526	87	50	137

After obtaining the price variations in the period reviewed and the pattern of consumption in respect of natural synthetic and reclaim rubber, as also their respective value in terms of

money spent by the industry I now proceed to analyse the effect of changes in prices during the period under review on the rubber manufacturing industry. It is evident from Table III that the quantity of rubber consumed has increased as also its value on the basis of the increase in price, but this does not by itself would give us a clear picture of the impact on the production cost and for that we shall have to find out the unit polymer cost in the given period on the basis of the weighted average. While working out this weighted average due consideration is given to the grades of natural, synthetic and reclaim rubbers processed both from - indigenous and imported sources as also the individual contribution of each polymer in the total polymer cost. Table IV gives the details of these figures.

TABLE IV

Unit Polymer Cost Per Ton.

Year	Cost per ton on the basis of weighted average	Total amount spent by the Industry	Index No.	Increase in %
1950	Rs. 2,250	4.0 crores	100	-
1960	Rs. 3,020	18.0 crores	134.1	34.1
1965	Rs. 3,270	33 crores	145	45

It is obvious from the above Table that polymer cost to the rubber industry has increased by 34.1% between 1950 and 1960 and by 45% between 1950 and 1965 i.e. at an average rate of 3% per year. Although the prices of raw rubber have gone up by 46% during the period under review these figures will again have to be related to the broad sectors of the industry, for, the rubber content of the individual product varies, and therefore the impact would also vary in respect of different sections of the industry. While working out the impacts we would also have to segregate the excise duties which also vary from item to item before we can arrive at the ex-factory figure of production value. Taking into consideration all these factors the rubber industry as a whole has paid between 1960 and 1965 a little more than Rs. 3 crores on its polymer consumption by way of difference between the prices prevailing between 1960 and 1965. If this amount is related to the ex factory value of production which is calculated at about Rs. 75 crores after deducting the excise amount from the total turnover of the industry of about Rs. 120 crores (including excise duty) the net impact on the rubber - - industry is arrived at 4.5%. This by itself may not appear to be

a heavily loaded impact, but when we take into consideration this impact along with other impacts like the increases in the costs of other raw materials, depreciation, maintenance, capital costs, cost of power, wages, excise duties and taxes, etc which are rising almost from day to day, the total impact on the manufacturing cost would reach a phenomenal level taking the industry to a saturation point. We must also concede that any increase in the manufacturing cost as a result of the increase in the prices of the cost constituents would inevitably reflect in the selling price of the finished product which in turn would affect adversely the pricing policy of other interest that consume the end product of the rubber industry. In a country such as ours which is yet to develop to its full stature in economic as well as other spheres, a heavy price no doubt shall have to be paid for its development. Yet as far as the rubber industry is concerned and particularly in the case of raw rubbers we should see if there could be a plausible solution for the mounting cost of higher prices as at present obtainable in the industry.

With regard to the natural rubber industry, our average yield per acre is hardly of the order of 500 lbs. ~~per acre~~ as against about 1500 to 2000 lbs. in a country like Malaya. I think the plantation industry could certainly bring down its cost by increasing its yield per acre by resorting to modern methods of scientific techniques in rubber cultivation, and by pursuing a vigorous policy in regard to new plantation with higher yielding clonal materials. I am sure if this is done the plantation industry would be able to bring down its prices and pass on the benefit to the manufacturing industry.

With regard to our synthetic rubber plant, I learn on reliable authority that their butadiene cost even though based on alcohol which is now considered an obsolete material compared.

to Petrochemical base, compares favourably with the international per centage cost of Butadiene. However their Benzene which is converted into Styrene and which is available from the Government owned steel plants is still exhorbitently costly. Apart from this the plant has hardly worked to its full capacity and their overheads of the 30,000 ton capacity is actually spread on a much small output. The synthetic rubber complex has also a very low capital structure as a result of which the quantum of interest as well as the quantum of depreciation account for a larger proportion in the ultimate cost. Apart from this their capacity is considerably low compared to international capacities for synthetic rubber plants. Therefore their prices are considerably high compared to the international prices. The only solution I can think of is that they should reach their full licensed capacity and possibly think in terms of going into expansion plans for higher capacity for which the present climate is so very favourable in view of the acute shortage of natural rubber in the country to which could be added the critical foreign exchange position.

There is hardly anything I could suggest about the reclaim rubber industry, for, they seem to have acquitted themselves well in meeting the requirements of the industry at prices which are competitive.

All said and done, the rubber industry in this country can look forward to years of progress and prosperity, ~~for~~, in the context of the accelerated development of industrial economy of the country. I am sure in this national endeavour the manufacturers of raw materials as well as those of finised products would play an important role and see the country through in the fulfilment of the targets during the Fourth Plan period.

by

Dr. K. N. Modak,
B.Sc., Ph.D.

Introduction:

The Indian Rubber Goods Manufacturing Industry which has been making rapid strides for the past decade, as is evident from the fast increasing consumption of raw rubber, is being progressively confronted with the problem of growing burden due to increase in the prices of rubber xxxxxxxxxx made in the country, which calls for immediate attention. This high incidence of rising prices of rubber coupled with increase in the prices of compounding chemicals, and other factors such as high duties and taxes results in higher cost of production of the end rubber products and thus adversely affects the competitive capacity of Indian rubber goods in foreign markets. This is all the more serious in the present situation which has been often put bluntly as 'Export or Perish'. This increase has hit the bigger manufacturers in their cost structure and has nearly broken the backbone of smaller units whose capacity to bear such burden is always limited.

Prices of Natural Rubber :

In the present paper I am going to deal with the impact of increasing prices of rubber on the compounding cost of a medium sized factory like mine, mainly concerned with the manufacture of moulded and mechanical rubber goods.

Before I do this it will be interesting and worthwhile to note how the prices of natural rubber have risen progressively during the past 12 years, as illustrated in Table I(attached).

Before the year 1952, there was no control on rubber and the price of smoked sheet RMA 1, delivered at Factory, was about Rs.2.20 per Kg. With effect from 28th October 1952, rubber prices were brought under Government control and maximum and minimum prices of all grades were fixed.

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You will find from the Table I, that the price was Rs.3.20 per Kg. in 1952, Rs.3.60 per Kg. in 1955 and remained at this level till March, 1961. In April 1961 Government made adjustments in the price by reducing the F.O.B. prices but adding a cess duty, to be collected from the manufacturers. However, in doing so the quantum of the cess, which was 13 Paise per Kg., when collected from the planters till this time was increased to 30 Paise per Kg., when transferred to the manufacturers. As a result of this the price of RMA 1 grade became Rs.3.76 per Kg., which remained more or less constant upto the end of 1963.

In addition to this, during this period, yet another unjust imposition was made by way of differential payment by the manufacturers to the Rubber Board. This was clearly a 'one way traffic' always beneficial to the Rubber Board, as you are all aware.

At the end of 1963, prices of rubber were decontrolled by the Government and only the minimum or floor prices were fixed for all grades. This resulted in increasing the price of RMA 1 grade, between the range of Rs.3.70 and Rs.3.80 per Kg. and it remained constant upto the end of 1964. From January 1965, somehow the prices started shooting up considerably and today's quoted price of RMA 1 grade is in the vicinity of Rs.4.80 per Kg., a price even more than the price of indigenously made synthetic rubber SBR. Thus you will find , as shown in Table I, that the price increase is about 19% between 1952 and 1964 and about 50% between 1952 and the present period.

This sudden rise in the prices since January 1965 and onwards, may be attributed to the suspension of granting of import licences by the Government and also inadequate supply position of indigenous rubber and not fixing of the maximum prices which was being done so far.

Today's requirement of the rubber industry is estimated at about 100 thousand tons with Natural rubber accounting for about 70 thousand tons, synthetic 20 thousand tons and reclaim 10 thousand tons. As

45-46 thousand tons, and synthetic about 16-17 thousand tons. We may be able to cover reclaim entirely from the indigenous supply. Thus we will find that Natural rubber, to the extent of 20 thousand tons and synthetic rubber to the extent of 3 thousand tons, mostly of special purpose and Butyl variety shall have to be imported.

Compounding Cost :

I will now deal with the subject, how these increased prices have affected the compounding cost. I feel that the general compounding pattern of a moulded rubber goods manufacturing concern can be broadly divided into three categories of mix.

1) Pure Gum or unloaded mix
2) Medium loaded mix
3) Highly loaded mix

I have chosen three typical common formulae, as illustrated in Table II (attached), to represent the above three categories, using Natural rubber and Table III (attached) indicates three typical formulae using indigenous SBR Rubber.

I have also chosen the period between 1952 when the rubber price came under Government control and August, 1965. This period is further divided into 4 parts, as illustrated in Table IV(attached). Also while calculating the compounding cost I have kept the price of rubber as a variable factor and the prices of all the other compounding ingredients are kept constant. More over the compounding ingredients are chosen from the range of chemicals indigenously manufactured. In this table you will see how the compounding cost has increased progressively. From the table you will observe that the compounding cost, between 1955-1960, has increased by 2.35 % over the 1952 cost. Between 1961-1964, there is an immediate increase of 6.32% but of 9% when compared to 1952 cost. As the position stands to-day you will observe that the compounding cost has further increased by 108% and when compared to 1952 cost the increase calculates to 20.6% . In the case of Medium loaded mix, the corresponding immediate

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they are in the order of 1.8, 6.4 and 16.0. Similarly in the case of highly loaded mix the corresponding figures of immediate increase are 1.8, 4.6 and 7.2 and when compared against 1952 cost they are 1.8, 6.4 and 14.1.

In the case of SBR, the comparison is made between the price of the indigenous SBR and the price at which its imported counter-part is available today. It is seen that in the case of an unloaded mix the compounding cost is increased by 26%, in the medium loaded stock it is increased by 20% and in the highly loaded stock the increase is 5% only.

In the case of Reclaimed Rubber the increase in the compounding cost is negligible as compared to Natural Rubber and SBR.

Conclusion:

The impact of the above burden if considered individually may not apparently appear to be very heavy, but certainly when coupled with other factors like the ever increasing wage structure of the industry and the ever increasing prices of the compounding ingredients has made it difficult for the industry to bear the impact, thereby resulting in an uneconomic and high cost of production.

In view of the present critical Foreign Exchange position in the country, the import of essential raw materials, so very badly needed by the industry, has been drastically curtailed and as a result it is likely to affect the progress of the industry. In addition to this the present credit restriction imposed by the Reserve Bank coupled with diversion of funds for the import of food-grains etc. have been responsible for the upward trend in the price level, adding to the inflationary tendency in the country.

Conclusion:

In my opinion, therefore, more utilisation of Synthetic SBR and increasing the yield per acre of natural rubber by various modern techniques available to-day, would help to ease the present critical situation in due course of time. The immediate solution would be to reintroduce the maximum control rates on natural rubber.

TABLE I

INDIGENOUS NATURAL RUBBER GRADE - SMOKED SHEET RMA 1

Period	Cost per Kg. (delivered at Factory)	% increase (immediate)	% increase (over 1952 price)
1952	Rs.3.20	-	-
1955 to 1960	Rs.3.60	12.5	12.5
1961 to 1963	Rs.3.76	4.4	17.5
1964	Rs.3.80	1.0	19.00
1965 (August)	Rs.4.80	26.30	50.00

TABLE II

TYPICAL COMMON FORMULAE USED IN MECHANICAL AND MOULDED RUBBER GOODS WITH NATURAL RUBBER.

Material	PARTS BY WEIGHT IN KILOGRAM		
	Unloaded Mix	Medium Loaded Mix	Highly Loaded Mix
Smoked sheet (RMA1)	100.00	100.00	100.00
Stearic Acid	4.00	3.00	1.00
Zinc Oxide	6.00	5.00	3.00
Philblack A	-	15.00	75.00
Philblack O	-	15.00	-
China Clay	-	-	150.00
Paraffin Wax	-	-	0.30
Process oil	-	-	6.50
Anti-oxidant	1.00	1.00	0.75
Accelerators	0.50	1.45	1.10
Sulphur	3.50	2.25	3.50
	115.00	142.70	341.15

TABLE III

TYPICAL COMMON FORMULAE USED IN MECHANICAL & MOULDED RUBBER GOODS WITH SBR

PARTS BY WEIGHT IN KILOGRAM

Material	Unloaded Mix	Medium Loaded Mix	Highly Loaded Mix
S-1500	100.00	100.00	50.00
S-1958	-	-	80.00
Stearic Acid	2.50	2.00	2.00
Zinc Oxide	4.00	5.00	4.00
Philblack A	-	20.00	80.00
Philblack O	-	20.00	-
China Clay	-	30.00	-
Resin	-	-	10.00
Paraffin Wax	-	1.50	-
Process Oil	-	10.00	25.00
Anti-oxidant	1.50	1.50	1.75
Accelerators	1.35	2.05	1.20
Sulphur	2.00	2.50	2.00
	111.35	194.55	255.95

TABLE IV

% Increase in compounding cost using Natural Rubber.

Period	Cost/Kg.	UNLOADED MIX		MEDIUM LOADED MIX		HIGHLY LOADED MIX	
		%increase immediate	% increase over 1952 price	% increase immediate	% increase over 1952 price	%increase immediate	% increase over 1952 price.
1952	Rs.3.40 (U.L.*) Rs.3.25 (M.L.**) Rs.1.70 (H.L.***)	-	-	-	-	-	-
1955 to 1960	Rs.3.48 (U.L.) Rs.3.31 (M.L.) Rs.1.73 (H.L.)	2.35	2.35	1.8	1.8	1.8	1.8
1961 to 1964	Rs.3.70 (U.L.) Rs.3.47 (M.L.) Rs.1.81 (H.L.)	6.32	9.00	4.9	6.4	4.6	6.4
1965 August	Rs.4.10 (U.L.) Rs.3.79 (M. L.) Rs.1.94 (H.L.)	10.8	20.6	9.0	16.0	7.2	14.1

* U. L. - Unloaded Mix

** M. L. - Medium Loaded Mix

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Philblack O	-	15.00	-
China Clay	-	-	150.00
Paraffin Wax	-	-	0.30
Process oil	-	-	6.50
Anti-oxidant	1.00	1.00	0.75
Accelerators	0.50	1.45	1.10
Sulphur	3.50	2.25	3.50
	115.00	142.70	341.15

TYPICAL COMMON FORMULAE USED IN MECHANICAL & MOULDED RUBBER GOODS WITH SBR

PARTS BY WEIGHT IN KILOGRAM

Material	Unloaded Mix	Medium Loaded Mix	Highly Loaded Mix
S-1500	100.00	100.00	50.00
S-1958	-	-	80.00
Stearic Acid	2.50	2.00	2.00
Zinc Oxide	4.00	5.00	4.00
Philblack A	-	20.00	80.00
Philblack C	-	20.00	-
China Clay	-	30.00	-
Resin	-	-	10.00
Paraffin Wax	-	1.50	-
Process Oil	-	10.00	25.00
Anti-oxidant	1.50	1.50	1.75
Accelerators	1.35	2.05	1.20
Sulphur	2.00	2.50	2.00
	111.35	194.55	255.95

TABLE IV

% Increase in compounding cost using Natural Rubber.

Period	Cost/Kg.	UNLOADED MIX		MEDIUM LOADED MIX		HIGHLY LOADED MIX	
		%increase immediate	% increase over 1952 price	% increase immediate	% increase over 1952 price	%increase immediate	% increase over 1952 price.
1952	Rs.3.40 (U.L.*) Rs.3.25 (M.L.**) Rs.1.70 (H.L.***)	-	-	-	-	-	-
1955 to 1960	Rs.3.48 (U.L.) Rs.3.31 (M.L.) Rs.1.73 (H.L.)	2.35	2.35	1.8	1.8	1.8	1.8
1961 to 1964	Rs.3.70 (U.L.) Rs.3.47 (M.L.) Rs.1.81 (H.L.)	6.32	9.00	4.9	6.4	4.6	6.4
1965 August	Rs.4.10 (U.L.) Rs.3.79 (M. L.) Rs.1.94 (H.L.)	10.8	20.6	9.0	16.0	7.2	14.1

* U. L. - Unloaded Mix

** M. L. - Medium Loaded Mix

*** H. L. - Highly Loaded Mix