March 26, 1945

Mr. J. R. Hobbins, President
Anaconda Copper Mining Company
[redacted]
New York 4, New York

Dear Mr. Hobbins:

Attached is a report prepared by Mr. F. H. Harless giving the highlights of the meeting of the Lead Pigment Manufacturers Advisory Committee which was called by the W.P.B. and held in Washington on March 15th.

Representatives of the W.P.B. presented figures showing that the consumption of lead would exceed production throughout this year and heavy inroads would be made into the stock pile. The Army and Navy suggested the production of dry white lead be discontinued January 1st, 1945 in order to save the 5,000 or 6,000 tons of lead used each quarter for that purpose, under the present Order M-384. However, the lead committee of the W.P.B. explained that white lead was essential to the war effort, and limited production was permitted for the first quarter.

It was indicated that V-day in Europe would not relieve the pressure on producers of dry white lead because any lead not needed for war would be diverted into the manufacture of batteries for civilian use.

Producers of dry white lead were asked to give their stock positions on both lead-in-oil and dry lead. This information is summarized in the following table:

Producer	Stock L-in-O	Stock Dry Lead	Dry Lead In Process
Anaconda	110 Tons	800 Tons	0
Eagle Picher	170	215	1,000 Tons
Easton	75	250	0
Fuller	0	0	1,800
McGregor	70	0	0
National	1,200	800	8,000
Sherwin-Williams	0	170	175
	1,625 Tons	2,235 Tons	10,975 Tons

This table shows that some 13,000 tons of dry white lead is held by manufacturers in finished stocks and in process. When the question arose as to whether this tonnage should be saved as a backlog or used up, National Lead (which reported about 2/3 of the total) took the lead in arguing that some methods of production required large in

process tonnages. It was decided to leave this matter alone, and it was also decided to keep the stocks held by consumers frozen, since the W.P.B. representatives felt that if any agitation was made to release these stocks, the lead committee might rule that the production of dry white lead would not be necessary.

Apparently Order M-384 will be revised before April 1st, but this revision will have little or no effect on dry white lead. Second quarter production will undoubtedly be on the same basis as for the first quarter but no official announcement has yet been made.

We hope that Mr. Harless' report will be of interest to you.

Very truly yours,

GEJ/fs
cc: Mr.R.E.Dwyer
Mr.F.Leist

Enc.

INTERNATIONAL SMELTING AND REFINING COMPANY

East Chicago, Indiana

Pigment Division

March 23, 1945

Mr. G. E. Johnson,
Plant Manager,
East Chicago Office.

Dear Mr. Johnson:

On March 15th I attended a meeting of the Lead Pigment Manufacturers Industry Advisory Committee which was called by WPB. The meeting was held in room 4346, Social Security Building, Washington, D. C.

The presiding officer was Charles H. Love of the Protective Coating Section, Chemical Bureau, WPB. He was assisted by Mr. Benjamin M. Belcher, Head of the Protective Coating Section of WPB. Acting in an advisory capacity was Mr. Al Goetz of the Eagle Picher Lead Company who is a dollar-per-year man and who divided his time between Eagle Picher and WPB. There was also one other representative of WPB present.

Those present and the companies they represent are listed below:

Cooledge	-	Sherwin-Williams
Hayt	-	Eagle-Picher
Hurless	-	International
Knight	-	Eustom Lead
McCarthy	-	National Lead
McGregor	-	McGregor Lead
Sprague	-	Eustom Lead
Wildner	-	National
Wilke	-	Hammond Lead

Mr. Felix Vormser, Secretary of the Lead Industries Association was endeavoring to register when I arrived. He was not permitted to register since he was not a member of the committee. The matter was taken up with Mr. Josiah G. Fort, head of the WPB Industry Advisory Committees who ruled that Mr. Vormser would not be permitted to attend the meeting.

The unnamed representative of WPB indicated that during the first quarter the overall consumption of pig lead would be 257,000 tons. It would be about the same in the second quarter. At the end of the first quarter total stocks in this country should be down to about 66,000 tons. They were endeavoring to get production to balance consumption but it was indicated that it would be necessary to go into the stock pile in March and April to the extent of about 25,000 tons. Total stocks in this country may go down to 25,000 tons by the end of April. It was requested

that this information be kept strictly confidential.

The representatives of the army and navy had taken the position that all production of dry white lead should be discontinued. The requirements committee of WPB was inclined to go along. However, the lead committee of WPB explained that white lead production was essential to the war effort to a considerable degree. The lead committee of WPB agreed to allow production in the first quarter to the extent of 15% of the pig lead consumed in the first half of 1944, or roughly a 30% overall quota. It was estimated that 29,000 tons would cover the total requirements under order M-384 for all types of lead pigments but this was cut to 26,000 tons. Permitted production of dry white lead for the second quarter had not been discussed at the time the meeting was held but it was hoped that the industry would be allowed to go along on the present basis. It was plainly indicated that there would be no increase in production permitted.

Mr. Love then asked the representatives of all producers to disclose their stock position on both lead-in-oil and dry lead. A summary for all producers is given in the following table:

Producer	Stock Lead-in-Oil	Stock Dry Lead	In Process Dry Lead
Anaconda	110 Tons	800 Tons	0 Tons
Eagle Picher	170	215	1,000
Euston	75	250	0
Fuller	0	0	1,800
McGregor	70	0	0
National	1,200	800	8,000
Sherwin-Williams	0	170	175
	1,625 Tons	2,235 Tons	10,975 Tons

Mr. Belcher asked that the representative of each producer indicate the amount of the pig lead quota that would be used in manufacturing dry white lead in the second quarter if the present arrangement was discontinued. Everyone present objected to having his figures disclosed. Mr. Love said that this would be discussed individually and that all had furnished the information except International. We had not furnished this information because the request had been a verbal one from Mr. Goetz who is in the employ of the Eagle Picher Lead Company and it was not a formal request from WPB. It was decided that the figures that had been furnished would be close enough to serve the purpose for which they were wanted. Apparently the amount was 5,000 tons in terms of metal or about 6,000 tons in terms of dry white lead.

The group was then polled individually to find out what the operating plans were for the second quarter if the present regulation remained unchanged. Eagle and McGregor indicated they would operate.

National said that they would not operate five plants but would make their 30% quota. Eustom will operate during the second quarter but will spread out production. They did not know whether or not they would operate in the third quarter. Fuller would operate during the second quarter. I indicated that we would operate in June in the second quarter and plan on operating in July of the third quarter, making a 60-day continuous operation.

It was then pointed out by the representatives of WPB that there was a backlog of about 12,000 tons of dry lead in the hands of producers and in process. On the present basis this would be about a six months' supply. The question was whether to save this backlog for contingencies or to permit it to be used up. Wildner of National pointed out that a certain amount would always be in process, depending upon the method of production used, unless a plant was completely shut down and cleaned out. If the plants were shut down, then the manpower situation would be aggravated as the labor could not be retained. Since National has most of the dry lead in process, it was mainly their argument and it was decided to leave the matter alone.

The next question was whether or not the stocks of dry white lead in the hands of the consumers, and which were considered to be rather extensive, should remain frozen. It was stated that the reason they were frozen in the first place was because it was thought that no more white lead would be produced during the emergency. Now that it appears that a certain amount of white lead will be permitted to be produced, some had taken the position that those having stock should be permitted to use it.

The WPB representatives strongly recommended that no agitation along this line be made. They stated that if an issue was made of it the lead committee would very likely rule that since so much dry lead was on hand with consumers that it would not be necessary to produce any more dry white lead. They were very positive about this and the representatives of all producers decided to take the recommendation of the representatives of WPB.

One representative of a producer asked whether or not the end of the German war would ease the pressure on the producers of dry white lead. The unnamed representative of WPB stated that it would not. Any pig lead not needed for the war effort would very likely be first diverted into the manufacture of batteries for civilians. Some one raised the question as to how much pig lead we were giving away on lend-lease and the answer was that it was only 250 tons for the second quarter. There were no figures available for fabricated products.

There is to be a revision of M-384 which probably will be issued prior to April 1st. The changes are not of importance as far as we are concerned. For example, there will be definitions of certain products such as frits. Also, the quotas for some concerns such as the manufacturers of glass and insecticides will be changed to some extent

but such cases are relatively unimportant as concerns the overall picture.

Very truly yours,

F.H.Burless:ho

January 25th, 1946

Mr. F. O. Case, Assistant to the President
Anaconda Copper Mining Company
Room 1860 - 25 Broadway
New York 4, New York

Dear Mr. Case:

We thank you for your letter of January 15th to Mr. Laist concerning Mr. Bansch's report on paint formulations, and the clipping from the Wall Street Journal regarding the lead supply in this country. Mr. Hurless has given you his comments in connection with a letter that he has recently written to Mr. Dwyer.

In studying both these items, we believe there are several factors that were not mentioned, which may have a bearing on the future of white lead and on the price of lead. We shall try to briefly outline our thoughts on these questions.

Paint Formulations

In the comparison of paint formulations for 1939 and 1945, as prepared by Mr. Bansch, we do not believe that the year 1945 is representative of the paint formulation that paint manufacturers would have used had there been no restrictions. These restrictions as they affected the use of white lead in the manufacture of paint during 1945 can be briefly summarized as follows:

On January 15th, 1945 the W.P.B. established a quota of 16% for the amount of dry white lead that could be used in the production of paints. On August 2nd the quota was raised to 25%, and on October 9th all restrictions on the use of dry white lead were removed.

Then too, we can hardly assume that any paint formulations in the war years would be representative, because of restrictions on the use of other pigments and the shortage of titanium pigments during the early years of the war. The shortages of linseed oil which have been acute are perhaps a factor that must be considered. However, we agree with the general tendency to reduce the use of white lead and lead pigments in paint formulations to a minimum and undoubtedly any substantial increase in the price of lead pigments will adversely affect their use in paint formulations.

Lead Supply and Price

The informative article from the Wall Street Journal gives a good analysis of the present situation concerning lead supply and probable future price of lead. In order to discuss this information from the Wall Street Journal, we are showing below (1) a tabulation of lead production on a mine basis and (2) New York, London and Montreal lead prices for the years 1937 to 1944. This information was obtained from the 1944 Yearbook of the American Bureau of Metal Statistics. These figures unfortunately do not include the production of lead in Europe, Asia and Africa since 1938.

LEAD PRODUCTION ON MINE BASIS IN TONS OF 2,000 LBS.

	1937	1938	1939	1940	1941	1942	1943	1944
U.S.	464,892	369,726	413,979	457,392	461,436	496,239	488,215	419,788
Canada	238,229	241,343	221,071	262,160	253,384	284,171	256,038	180,887
Mexico	240,448	311,255	241,961	215,350	171,148	214,000	209,300	197,487
Argentina	17,247	26,125	32,738	32,738	24,676	25,990	20,500	21,000
Bolivia	20,062	14,578	15,563	12,855	17,254	13,757	12,588	9,978
Peru	46,338	63,982	51,018	55,699	55,167	49,472	52,700	38,000
Europe	373,630	416,033	-	-	-	-	-	-
Asia	114,631	127,601	-	-	-	-	-	-
Africa	55,414	74,132	-	-	-	-	-	-
Australia	275,555	307,293	310,009	314,491	292,374	291,935	211,645	197,385
	1,844,446	1,952,118						

YEARLY AVERAGE LEAD PRICES IN U.S. CENTS PER POUND

	1937	1938	1939	1940	1941	1942	1943	1944
New York	6.009	4.739	5.053	5.179	5.793	6.481	6.500	6.500
London	5.148*	3.335**	2.913***	4.490****	4.490****	4.490****	4.490****	4.490****
Montreal	5.80	4.180	4.240	5.000	5.000	5.000	5.000	5.000

* Pound Sterling @ $4.944
** " " @ $4.893
*** " " @ $4.437
**** " " @ $4.025

The tables indicate that in almost every case a substantial reduction in the production of lead has occurred, and that there has been relatively little price change between 1937 and 1944. It of course is to be remembered that premium prices have been paid by the Metals Reserve Company for both Foreign and Domestic lead during the war years. If we assume that these premium prices should have encouraged the production of lead in the war years, the opposite effect is all too apparent, as witness the reduction in the production of lead from Canada from 238,000 in 1937 to 180,000 in 1944. A similar reduction is indicated in the production of lead from Mexico and Australia, which are the major foreign lead producers.

If we consider our domestic lead supply and production possibilities for the postwar years, it is evident that a substantially higher price for domestic lead must be paid in order to anywhere near supply the domestic lead needed. We doubt very much whether in the postwar years the United States will be able to justify paying a price that will permit domestic producers to supply all the lead that is needed for United States consumption. We believe that there will be substantial encouragement for the importation of lead from foreign countries, principally Canada, Mexico, Australia and Peru, and that these importations of foreign lead will largely govern the postwar price and uses of lead.

If the past relationship of foreign lead price to domestic lead price is continued in the postwar period after new currencies have been established in the conquered countries, then it would seem quite reasonable that any substantial increase in lead production would first occur in the foreign sources of supply. As an example, with the London price of lead the equivalent of 7¢ per pound New York, given an adequate labor supply, Trail in Canada and Port Pirie and Mt. Isa properties in Australia would probably increase their production at least to the 1937 rate. We are also of the impression that the National Lead Company's lead mining and smelting operations in the Argentine are capable of greatly expanded production in a reasonable period of time. If a substantial increase in production does occur from foreign sources, then we are inclined to believe that any high prices of lead in the domestic market would be of a temporary nature and probably would not last over two or three years or possibly five years at the most. In making this statement, we should like to state that the present strike in the lead mines and smelters of Mexico is perhaps the most immediate disturbing factor in the lead price situation because we have been receiving about 28,000 tons per month from Mexico and the shortage indicated in the Wall Street Journal article is approximately that amount of lead; i.e. if and when the lead strike in Mexico is settled, apparently enough lead can be imported to take care of our immediate requirements up to 80,000 tons per month. This 80,000 tons per month is a very high consumption rate in the United States as compared to a prewar average consumption figure of 53,400* tons for the years 1936 to 1940 inclusive. It is indicated that Tetraethyl lead requirements for piz lead have greatly increased and perhaps the use of lead for lead covered cable have increased during the war years, but otherwise it is doubtful whether any other important use of lead in large quantities has been developed during the war years.

I shall appreciate your comments on these thoughts.

Very truly yours,

G.J/bm
cc: Mr.F.Laist
Mr.F.H.Burless

* Ref. Year Book 1944, American Bureau of Metal Statistics

EC-W-31

ANACONDA COPPER MINING COMPANY

25 Broadway, New York 4, N.Y.

January 15, 1946

Mr. F. Laist, Vice President
In Charge of Metallurgical Operations
Anaconda Copper Mining Company
B u i l d i n g

Dear Mr. Laist:

You will remember our various discussions with regard to basic carbonate white lead and the difficulties that are apt to arise in connection with the sale of white lead if pig lead advances radically in price. Some years ago Mr. Bansch made a study of the formulations involving white lead, leaded zinc, zinc oxide and titanium, with particular reference to the largest producers of paint in the United States. In view of the anticipated difficulties with white lead in the near future, he was asked some time ago to bring this study up to date in order to determine what the trend has been since his previous study. The result of this is his report of December 31st, a copy of which is attached. I believe you will find this very interesting and, unfortunately, it confirms many of our pessimistic ideas.

You can see from Mr. Bansch's report that there has been, on a percentage basis, a radical decrease in the use of white lead by the larger paint manufacturers. Also the use of extended titanium dioxide pigments and leaded zinc have considerably increased during the years since 1939.

Our discussion of a possible arrangement with American Zinc, Lead & Smelting for leaded zinc ores and galena ties in to a considerable extent with this same problem. While leaded zinc now sells at 1/4¢ under the market for lead-free zinc, a radical increase in the price of lead, hence the price of basic carbonate lead is likely to lead to a considerable increase in the price of leaded zincs. The whole problem has a very direct bearing on the bismuth situation as it pertains to the Anaconda Companies.

Another development that has just taken place, which probably doesn't mean too much at the moment, but which is apt to receive favorable Government consideration in many quarters

is a petition by CIO Battery workers and certain other labor groups. This petition has recently been sent to President Truman and in it they request that he take steps to continue the present subsidy to the marginal producers of lead ore and increase the subsidy if necessary. In addition, they ask that the Government use its influence to substitute the use of aluminum foil for lead foil thus freeing approximately 25,000 tons of lead for battery and other "essential users". Also they request the Government to get behind the substitution of extended titanium pigments for basic carbonate white lead and basic sulphate and that such a move would free another 100,000 tons of lead a year for more essential uses.

You are also aware of the fact that Canadian and Mexican producers of lead can obtain the equivalent of approximately 7¢ per pound laid down at the port of shipment as compared with 6 1/4¢ for their lead if they sell it to the Metals Reserve and ship it to the United States. This situation, plus the strike in Mexico, will further reduce the volume of lead available for the United States and hence hasten the day when lead will cost directly or indirectly 9¢ to 10¢ a pound in the United States.

Yours very truly,

F.O. Case

F.O.Case:Mc

cc - Mr. J. R. Hobbins

To F. H. Hurless Date December 31, 1945

Page No. 2

Subject: TREND IN WHITE HOUSE PAINT FORMULATION

Paint bulletin No. 20 issued by the laboratory in June, 1939 described the formulations used by several nationally known paint manufacturers as well as producers on a somewhat smaller scale. The data given in this bulletin was collected by Mr. De Young and in view of recent discussions on the prospects of white lead in house paints he was asked to obtain present day formulations, duplicating where possible the same manufacturers surveyed in 1939 plus any additions available. These data are given in table 2.

Table 2

Approximate Pounds of Pigment Per Gallon

	White Lead		Leaded Zinc		Titanium		Extender	
Producer	1939	1945	1939	1945	1939	1945	1939	1945
Sherwin Williams	3.97	1.21	5.28	4.85	1.16	1.21	1.16	2.83
Pittsburgh Plate Glass	3.39	0	3.90	4.46	1.18	1.22	2.74	2.84
Lowe Brothers	3.97	2.71	4.07	4.02	1.33	1.12	1.33	2.60
Jewel	2.38	2.69	4.75	5.38	1.03	0.81	2.40	1.88
Martin Senour	7.55	2.45	3.79*	4.11	0	1.12	0	2.60
DuPont	-	0	-	4.54	-	1.01	-	3.35
Pratt and Lambert	-	0	-	4.23	-	1.44	-	2.92
Chi-Namel	0.94	-	5.37	-	1.53	-	3.56	-
Valspar	-	1.71	-	4.25	-	1.04	-	2.44
Minnesota	-	0	-	4.79	-	1.44	-	3.35
Average	3.70	1.20	3.89	4.51	1.04	1.16	1.86	2.76

* Lead-free zinc oxide used by Martin Senour in 1939

Further analysis of tables 1 and 2 indicates that the trend is toward definitely lower lead content, slightly higher zinc oxide as represented by the zinc oxide content of the leaded zinc, slight increase in titanium oxide and substantial increase in the extender portion of the pigment. The three largest paint producers surveyed in 1939, Sherwin Williams, Lowe Brothers and Pittsburgh Plate Glass, averaged 3.84 pounds of white lead per gallon at that time. This has dropped to 1.31 pounds in 1945, a decrease of 65%. In 1945 seven large paint producers are included in the survey. Of these seven only one, Valentine, other than Lowe Brothers and Sherwin Williams both of whom are probably obligated to use white lead, is consuming white lead for 1st quality house paints.

To F. H. Hurless Date December 31, 1945

Page No. 3

Subject: TREND IN WHITE HOUSE PAINT FORMULATION

The fact that Pratt and Lambert and Pittsburgh Plate Glass, both of which are nationally recognized producers of quality products, have followed the lead of DuPont in eliminating white lead is a significant point.

Technical discussion of paint formulation in open meetings is usually based on the quality of the product to be produced. It is well known, however, that competitive products such as house paints are very sensitive to costs and this factor enjoys consideration at least equal to quality. Since raw materials used in the manufacture of paint are purchased by weight and sold by volume the yield value of any raw material used is exceedingly important. Table 3 which follows compares, at present market prices, cost per gallon of the most widely used pigments in house paints.

Table 3

Cost Per Gallon of House Paint Pigments

Pigment	Cost/lb.	Wt./Gallon	Cost/Gallon	% of White Lead Cost Weight	Volume
BCWL	8¼	56.7	$4.68	100	100
BSWL	7¾	53.4	3.87	87.8	82.7
Zinc Oxide	7¾	47.0	3.41	87.8	72.9
Leaded Zinc	7	49.6	3.47	84.8	74.1
TiO_2	14½	32.5	4.71	175.7	100.6
Extended Ti	5-3/4	26.0	1.49	64.7	31.8
Extender	1	23.7	.24	1.0	0.5

These data show that white lead is not only a costly material when purchased on a weight basis but that its cost when used in products such as paint that are sold by volume is exceeded by only TiO_2 which has never been considered a quantity material for exterior paints. Extended titanium pigment and leaded zinc oxide which have replaced white lead to a great extent in house paint formulation are on a volume basis, 68% and 26% respectively, lower in cost than basic carbonate white lead.

In table 4 following, the pigment cost per gallon of paints described in table 2 is given. The pigment costs for the 1939 formulations are shown at market prices in use in 1939 as well as what the same formulation would cost at 1945 market quotations. The 1945 paint costs are given only at 1945 raw material prices. Also shown are retail selling prices for this district of the 1939 and 1945 paints.

To F. H. Hurless Date December 31, 1945

Page No. 4

Subject: TREND IN WHITE HOUSE PAINT FORMULATION

Table 4

Producer	Pigment Cost Per Gallon 1939 Paints A*	1939 Paints B**	1945 Paints	Retail Selling Price 1939	1945
Sherwin Williams	$.774	$.875	$.642	$3.25	$3.30
Pittsburgh Plate Glass	.671	.750	.517	3.25	3.35
Lowe Brothers	.730	.819	.693	3.25	3.35
Jewel	.625	.701	.735	3.35	3.00
Martin Senour	.794	.898	.638	3.40	3.55
DuPont	-	-	.498	-	3.65
Pratt and Lambert	-	-	.534	-	3.25
Chi-Namel	.649	.709	-	2.95	-
Valentine	-	-	.614	-	3.45
Minnesota	-	-	.578	-	3.35

* A - Using 1939 market prices
** B - Using 1945 market

There is evidence available indicating that both New Jersey Zinc Company and DuPont are promoting exterior house paints containing no white lead either in the form of basic carbonate or basic sulfate as derived from leaded zinc oxide. Lead-free paints have in the past been designated as fume-resisting products and their use has been more or less restricted to areas adjacent to oil refineries and other localities that are subject to sulfide fumes. The industrial areas have been used as testing grounds for paints of this type and the general performance to date has been satisfactory. The present critical situation in leaded zinc oxide will undoubtedly become much worse if the expected decrease in production of basic sulfate white lead occurs. It is quite probable that this shortage will yield the required incentive necessary to ready acceptance of formulations of this type. As indicated in Table 2 use of lead-free zinc oxide in place of 35% leaded zinc oxide permits a slight saving in raw material costs in spite of the ½ cent per pound differential that now prevails.

Whether or not the present formulations using leaded zinc oxide without additional basic carbonate white lead and the prediction formulations of a lead-free type will prove more successful than 40-40-20 in vogue 25 years ago is not known. There is some evidence available that indicates that titanium is a slightly better weathering inert when combined with reactive pigments than zinc sulfide is.

To F. H. Hurless Date December 31, 1945

Subject: TREND IN WHITE HOUSE PAINT FORMULATION

However, wide usage of these paints has not been long enough to determine whether or not serious and early failure will occur on repaint jobs as applied under a variety of conditions, both climatic and surface. Test panels do not bring out these failures to the extent desired nor does the painting of test houses under controlled conditions as practiced by DuPont.

It is believed that the salesmen, both dry pigment and lead-in-oil, are in a position to obtain considerable information concerning the future prospects of white lead, zinc oxide and leaded zinc oxide. Formulations of 1st and 2nd grade paints of large, medium and small manufacturers will undoubtedly yield sufficient data indicating the general trend of pigment use.

G. H. PANSCH, Paint Chemist,
Pigment Sales Laboratory

GHB:lb

1/7/46

cc: FOC GEJ RGB MJX IWS GHB

BASE PRICES - PER POUND

Common Lead, White Lead - Prime Western, Lead Free Zinc Oxide

	New York Common Lead	Dry White Lead	East St.Louis Prime Western	American Process Lead Free	Anaconda Lead Free Muffle	Anaconda Lead Free French
[illegible]	8.10	9.96	6.34	7.00		
[illegible]	9.02	10.77	7.62	6.95		
1926	8.42	10.63	7.34	6.86		
1927	6.76	9.23	6.24	6.50		
1928	6.31	8.46	6.03	6.50		
1929	6.85	8.85	6.51	6.50		
1930	5.52	7.83	4.56	6.50		
1931	4.24	7.19	3.64	6.50		
1932	3.18	6.50	2.88	5.74		
1933	3.87	6.31	4.03	5.65		
1934	3.86	6.63	4.16	6.06		
1935	4.06	6.50	4.33	5.56		
1936	4.70	6.50	4.90	5.00		
1937	6.01	8.00	6.52	6.167	6.25	9.25
1938	4.74	6.55	4.61	6.25	6.25	9.25
1939	5.05	7.00	5.12	6.25	6.25	9.25
1940	5.18	7.25	6.34	6.25	6.25	9.50
1941	5.79	7.50	7.48	7.00	9.25	11.25
1942	6.48	8.25	8.25	7.25	9.50	10.25
1943	6.50	8.25	8.25	7.25	9.50	10.25
1944	6.50	8.25	8.25	7.25	9.50	10.25

3/20/45:ho