Curric

June 27, 1939.

SOME POSSIBILITIES IN CONSTRUCTING AND LEASING RAILROAD EQUIPMENT

With the R. F. C. acting, in effect, as a purchasing agent for a large number of railroads, it should be possible to secure better prices on equipment than are now quoted for smaller orders. In the following examples it will be assumed that it will prove possible to secure a ten percent reduction in the price of a standard freight car now costing $2,500.

The interest rates used are those at which the R. F. C. could issue guaranteed obligations on schedules of maturities similar to the proposed schedules of amortization payments included in the leasing rates. In other words, they are rates at which the R. F. C. could, if it chose, hedge itself now to protect itself against interest rate changes throughout the life of the leases.

Suggestion I - Straight Hire-Purchase Proposition

Conditions (a) 20-year lease

(b) 2 percent interest rate

(c) equal annual installments covering interest and principal.

(d) title to revert to lessee upon completion of lease

(e) equipment to be built to specifications of lessee

Cost to lessee -$137.60 a year per car or 38 cents a day.

Advantages to lessee-

(a) lower annual payments due to lower price of equipment

(b) freedom from local taxes approximately 1 percent

(c) psychological difference between leasing and incurring fixed debt

Suggestion I - continued

General Comments. A lease of this maturity could be granted only on equipment that would have an economic life of twenty-five - thirty years. The lower initial cost would provide added protection to R. F. C.

Suggestion II - Hire- Purchase Proposition

Conditions (a) 15-year lease

(b) one and a half percent interest

(c) other conditions same as in I

Cost to lessee - $168.62 a year per car, or 47 cents a day

Suggestion III - Short-term Renewable Lease Proposition

Conditions (a) initial 3-year renewable lease

(b) annual rentals to repay cost in 15 years

(c) 3/4 of 1 percent interest rate on initial lease

(d) yearly leases thereafter at current rate on 1-year Government guaranteed obligations

(e) cars to be maintained in good repair throughout life of lease

(f) accumulated equity rights forfeited in event of failure to renew lease

Cost to lessee -

Year	Cost per day	Cost per year	Payment on principal at end of initial lease
1	46cents	166.38	
2		165.75	$450.00
3		164.63	Potential equity right 3/15 or 20 percent

Suggestion III - continued

Advantages to lessee-

(a) lower annual cost arising from lower cost of equipment

(b) lower annual cost arising from present low short-term rates of interest

(c) saving on local taxation

(d) no irrevocable commitment may be made nor reflected in the balance sheet.

General Comments: This suggestion should be extraordinarily attractive to the financially weaker roads. On the other hand, the Government's interest would be protected by the equity-forfeiture clause in event of failure to renew lease. Should a road in desperate straits choose to forfeit its accumulated equity rights, these would pass to a new lessee, and would thus help to insure continuous use of equipment.

In this suggestion, as an added safeguard of the Government's interest, it may prove advisable to add to the annual rental a charge for the purpose of accumulating a fund for major repairs which will be refunded to the lessee upon the completion of such repairs (or against which major repairs may be billed.)

The uncertain factor of future short-term interest rates that would enter in the charge when the lease is renewed should not be a deterrent because

(a) Interest rates will normally not rise unless there is prosperity which will mean heavy traffic volume

(b) the lessee would have to pay the higher interest rates on the issue of its own equipment trust certificates

(c) the interest charge is declining yearly as the unpaid balance of principal decreases.

Suggestion IV - (Same as III with exception of following modifications)

Conditions (a) initial 5-year renewable lease

(b) annual rentals to repay cost in 17 years

(c) 1 percent interest rate on initial lease

Cost to lessee-

Year	Cost per day	Cost per year	Payment on principal at end of initial lease
1	42cents	154.85	
2		153.53	
3		152.21	
4		150.88	$ 661.75
5		149.56	Potential equity right 5/17 or 29%

APPROXIMATE INTEREST RATES ON GOVERNMENT GUARANTEED OBLIGATIONS

Maturity years	Estimated market yield	Approximate coupon rate	Price
	(Per cent)		
1	.14	1/4	100.11
2	.32	3/8	100.11
3	.50	5/8	100.37
4	.72	7/8	100.61
5	.92	1	100.39
6	1.12	1 1/4	100.75
7	1.33	1 1/2	101.12
8	1.50	1 5/8	100.94
9	1.63	1 3/4	100.99
10	1.75	1 7/8	101.14
11	1.86	2	101.39
12	1.96	2 1/8	101.75
13	2.04	2 1/8	100.96
14	2.11	2 1/4	101.69
15	2.16	2 1/4	101.15
16	2.22	2 3/8	102.08
17	2.27	2 3/8	101.48
18	2.30	2 3/8	101.10
19	2.33	2 1/2	102.59
20	2.35	2 1/2	102.38
Average			
3 years	.32	.42	
5 years	.52	.625	
15 years	1.34	1.45	
20 years	1.58	1.70	

AVERAGE COST OF REPAIRS AND MAINTENANCE

NECESSARY TO MAINTAIN A TYPICAL FREIGHT CAR IN SERVICE

A. Old Type Car

Age	Average Cost Dollars per Year		
1 - 10 years	91.06		
11 - 19 years	168.82	add (1/2) to make comparable	
20 - 30 years	191.37		225.75
Thirty year average		151.15	

B. Modern Car

Age	Average Cost Dollars per Year		
1 - 10 years	75.58		
11 - 19 years	140.12		
20 - 30 years	158.85		
Thirty year average		125.46	125.46 / 100.29

from L D Freeman, who is now with RFC

AVERAGE AGE OF RAILROAD EQUIPMENT

As of Jan 1st 1938

A. Freight Cars

Age	Number (in thousands)	Per Cent of Total
All ages	1,729	100
Over 25 years	386	22.31
21-25 years	341	19.73
16-20 years	306	17.70
11-15 years	372	21.49
6-10 years	184	10.68
1- 5 years	140	8.09

Source: American Railway Car Institute

B. Steam Locomotives

All ages	44	100
19 years or more	31	71.6
9-19 years	11	25.1
Less than 9 years	2	3.3

Source: Interstate Commerce Commission

Cost of Car Ownership
Excl maintenance & Repairs

Case I

Cost of Car $2,500 30 year basis
15 equal payments 166.67 Depr 83.33
Int charge at 3% 20.00
1st yr 75.00
last yr 5.00
Average 40.00
Total Outlays per year 206.67
Int on Undepr Equity at 3% 18.75
Average cost per year 122.08

Case II

Cost of Car $2500.00
15 equal payments 166.67 Depr 83.33
Int charge at 1½% 10.00
1st yr 37.50
last yr 2.50
Average 20.00
Total outlays per year 186.67
Int on Undepr Equity at 1½% 9.38
Average cost per year 102.71

Case III

Cost of Car $2500.00
20 equal payments 125.00 83.33
Int charge at 2% 17.50
1st yr 50.00
last yr 2.50
Average 26.25
Total outlays per year 151.25 8.33
Int on Undepr Equity at 2% 109.16

Case IV

	Actual outlay basis	30 yrs basis
Cost of Car	$2250.00	
15 equal payments	150.00	Depr $75.00
Int charge at 1½%		9.00
1st yr 33.75		
last yr 2.25		
Average	18.00	
Outlays	168.00	
Int on Undepr Equity at 1½%		8.44
Average Cost per year		92.44

Case V

Cost of Car	$2250.00	
20 equal payments	112.50	Dep 75.00
Int charge at 2%		15.75
1st yr 45.00		
last yr 2.25		
average	23.63	
Outlays	136.13	
Int on Undepr Equity at 2%		7.50
Average Cost per year		98.25