Management Adviser

Volume 10 | Number 5 Article 2

9-1973

Planning a New Urban Transit Complex

Edwin T. Boyle

The nation's major metropolitan area is about to get a new method of transportation from its suburbs. But first a whole range of accounting figures had to be developed to see whether it was financially feasible. Here's what was done —

PLANNING A NEW URBAN TRANSIT COMPLEX

by Edwin T. Boyle

IN ALL the hue and cry, the shouting and the tumult, as to whether CPAs should predict the future financial course of a company, it seems to me that one vital point has been overlooked.

The difference between what any competent CPA can predict with certainty and the area of the subjective, the predictions and assumptions that only company management can make and that only management should be responsible for.

Roughly any business has a market (its sales), its costs, and the quantity of that market it can reach at the price it hopes to establish. It seems to me that those are management's responsibilities and predictions and it must stand or fall by them. What the CPA—any CPA—can do is figure out what management's profit position would be at any time provided those sales are realized. Or 20 per cent of those sales. Or 50 per cent. Management's sales predictions can be wildly exaggerated—or they can be too low. The CPA can still tell management whether the proposition is viable and at what point. Actually any competent bookkeeper can record information after the fact; the CPA can do it before the fact.

The trick is in merely projecting future possible situations as if they had already occurred, doing complete financial reports on them, and seeing what the reports show—"is" the company making a profit or not? It can be done for any level of sales—50 per cent of the client's projected figures, 30 per cent, or 120 per cent. In other words, once the basic calculations are made, the CPA can slot any given percentage of anticipated sales into the projection and see where the company would stand if that particular level of sales were achieved.

EXHIBIT I

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Proposed Hydrofoil Operations

Basic data used in projections:		
Cost of boats:		
Based upon purchase of 10 boats (Cost includes $65,000 per boat payable to International Hydrolines, Inc., for engineering drawings and design)		$550,000.00 each boat FAS San Diego
Delivery costs to New York area — estimated		30,000.00 each boat
Communications and radar equipment — estimated		5,000.00 each boat
Total cost — estimated		$585,000.00
Method of financing:		
Title XI Maritime insured loan 75% of basic cost		$412,500.00
Terms of loan:		
Interest cost including mortgage insurance premium	8%	
Monthly payments — including interest — based upon a 15 year payout	$ 3,943.50	
Total annual cost of above payments	$47,322.00	
Cash required to acquire each boat		$172,500.00
Estimated useful life of boats	15 years	
Estimated salvage value per boat at end of 15 years	$50,000.00	
Capacity — 72 passengers		
Cruising speed — 40 miles per hour		
40 mph less 10% for dockage, delays, etc. = 36 mph average speed used in calculations		
Operating costs:		
Crew: one licensed captain		$ 4.75 per hour
one engineer		4.25 per hour
one seaman		2.50 per hour
Fringe benefits:		
For 3 employees — general benefits		$12.15 per day
For 3 employees — holiday benefits		2.10 per day
		$14.25 per day
Fuel: 48 gals. per hour — main engines; 3 gals. per hour — aux. engine } 51 gals. per hour @ $.17 per gallon =		$8.67 per hour
Lubrication: 1 qt. per hour both engines @ $.60 per qt. per hour =		$ .60 per hour
Insurance: All coverage (T.L.O.) annual cost per boat		$35,000.00
Oil changes: Two engines — every 150 hrs. = 17 gals.		
Two transmissions — every 150 hrs. = 11 gals.		
U Drives — every 150 hrs. = 5 gals.		
Auxiliary engines — every 150 hrs. = 4 gals.		
Total consumption — every 150 hrs. = 37 gals.		
37 gals. x $2.40 per gal. = $88.80 every 150 hrs. =		$ .59 per hour
Annual maintenance:		
Hauling costs:		
Twice a year @ $2,000 per haul		$4,000.00 per year
Cleaning, painting bottom:		
Twice a year @ $700 each		1,400.00 per year
Painting topsides:		
Once each year @ $200.00		200.00 per year
Propellor damage and replacement — estimate		700.00 per year
Bearings, pump, and electric repairs — estimate		300.00 per year
Lines and fenders — estimate		50.00 per year
Total		$6,650.00 per year
Overhaul:		
Engines at 5,000 hours @ $2,500 per engine — total $5,000.00 =		$ 1.00 per hour
Foils and outfitting:		
V Drive		$ 1.00 per hour
Foils — cleaning and repairing		2.00 per hour
Routine — (all unscheduled maintenance)		1.00 per hour
Cabin cleaning, burp bags, cups, etc.		1.00 per hour
Miscellaneous — including life raft inspection when required		1.35 per hour
		$ 6.35 per hour

EXHIBIT 2

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Description of Services

Commuter service:

Commuter service is based upon the following:
- Boat to make one 45 minute to 60 minute run in the morning, leaving point of origin at 7:00 AM to arrive in New York City at 8:00 AM
- Return trip to be made in the evening from 5:30 PM to 6:30 PM
- Price per trip $3.00 per passenger each way
- Assumed load factor 75% = 54 passengers—average

Shuttle runs:

Each boat to make eight round trip shuttle runs (15 minute block time each run) between 8:00 AM and 10:00 AM (5 minute running time each way) and eight round trip shuttle runs in the afternoon between 3:30 PM and 5:30 PM
- Total one way trips each day 32
- Price per trip—one way $1.00
- Assumed load factor 50% = 36 passengers—average

Excursion trips:

Excursion service is based upon the following:
- Four—50 minute excursion trips daily between 10:00 AM and 3:00 PM to operate 210 days per year
- Price per trip — $3.00 for ½ hour trip
  $6.00 for 1 hour trip
- Assumed load factor 50% = 36 passengers—average
- Estimated commissions expense on excursion ticket sales 20%

Weekend and holiday charter service:

Charter service is based upon the following:
- Boat available 52 weekends = 104 days
- Assumed utilization 50% — 52 days
- Assumed utilization on holidays — 6 days
- Total assumed utilization — 58 days
- Price to be charged for 1 day charter service — $1,000.00

It's a do-it-yourself technique in other words. It also allows the CPA-consultant to prepare a pro forma balance sheet in the full realization that it won't be accurate to the last digit any time in the next 25 years. Yet figures placed in the balance sheet format are the acid test of financial health; they point up any weakness that might otherwise be overlooked in the projected operational study.

This technique also shows:

- When the probable useful life of the equipment will be exhausted per depreciation schedule, showing need for replacement.
- Status of cash account—or the extent of the cash deficit.
- The book value of the equipment.
- The current status of other asset and liability accounts.
- The net worth account, including retained earnings.
- Tax liability to correlate with prior losses and the depreciation method to be followed.

Thus, the approach of recording future events as though they had already occurred, gives us the advantage of "hindsight" in at least structuring our operations; it shows us the crossover point of operations at which cash will start flowing in; it signals the need for new expenditures for equipment.

This sounds like simulation. In a way it is. But it requires no computer and no elaborate mathematical formulas. The only thing simulated is various demand (sales) levels at a given price. All the other figures, the actual dollars and cents figures, then become quite accurate for each given percentage point of demand.

Although we have always been heavily involved with computers, invariably we perform our work first by the manual, "long way" method, with all the mulling over that manual methods imply. Then and only then do we program our computers to duplicate the manual methods we've already worked out.

We feel this approach is ideal for our "simulation" method. Events in business take place without benefit of computer. The recording of these events does not require computer operations either. And always the time-consuming manual methods are a safeguard against any possibility being overlooked, any contingency forgotten.

The CPA or financial executive who doesn't have a computer available can work out his feasibility study exactly as we did, in the case we're about to describe; that is, step-by-step—and he can be fairly certain that if he follows the traditional reporting format he has always used in the past he will be

EDWIN T. BOYLE, CPA, is a private practitioner in Hackensack, N.J. He is a consulting editor of **Management Adviser**. Mr. Boyle has aslo served on the AICPA Council and its computer and computer users committees. He recently held the post of president of the Chamber of Commerce of Bergen County, N.J. Mr. Boyle is a past president of the New Jersey Society of CPAs.

The company felt it could reasonably expect a market of 72 passengers per day . . .

all right. That is if he reports the most likely probabilities as though they had already occurred, he will come up with a reasonably complete set of assumed figures for the new venture.

Actually this sort of projection into hypothetical situations should be quite common to CPAs. Anyone who has ever participated in estate planning has done it almost automatically. He's calculated what the consequences would be if the husband died first, or if the wife were the first to die, what the taxes would be against the estate of the deceased spouse, what the after-tax remainder would be to the surviving spouse. Then the accountant selects the plan of distribution that most appropriately expresses the client's wishes. Most importantly, the client has a preview of the future based upon his current will.

But in order to do this, the CPA has to make a set of assumptions. He has to run a simulation in other words. He must show what the various beneficiaries would receive; he drafts a pre-administration of the client's estate.

Then the client and his adviser select the plan that most accurately expresses the will of the writer.

It works exactly like this in a business situation—except that there is one important additional variable—the demand for the product at the price management wishes to establish for it.

Let's take the case of a job we did recently for a company planning an entirely new type of business venture. Their project was establishment of a transportation complex—hydrofoil boats—between several suburban communities and New York City. (The projections shown herein contemplate that the actual operations of the vessels will be performed under franchise type arrangements and not by International Hydrolines itself.)

The company felt it could reasonably expect a market of 72 passengers per day, or 144 passenger trips per day (once to the city in the morning, once back from the city to the particular suburb in the evening) for every boat. (Hydrofoils, the units chosen, are particularly luxurious transportation

EXHIBIT 3

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Range of Gross Income Dependent Upon Utilization of Boats

	Commuter Service	
	Factor	Amounts
Maximum utilization — one boat		
Capacity of boat:		
Number of passengers	72	
Price per trip, per passenger	$3	
Total income per trip		$ 216.00
Number of trips per day	2	
Total income per day		$ 432.00
Estimated number of days in operation	210	
Total income — based upon above factors		$90,720.00

Gross income based upon degree of utilization — one boat:	Average Number of Passengers	Gross Income
100%	72	$90,720
90%	65	81,648
80%	58	72,576
75%	54	68,040
70%	50	63,504
60%	43	54,432
50%	36	45,360
40%	29	36,288
30%	22	27,216

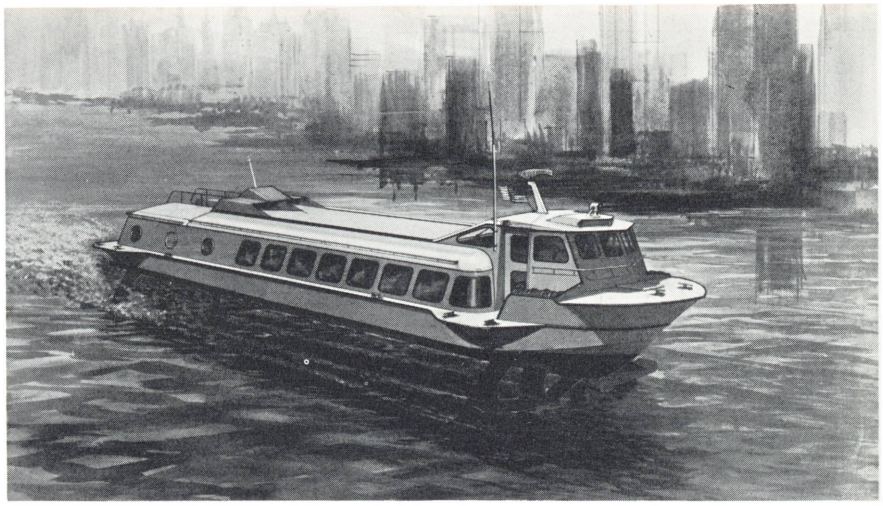
Encircled items represent load factors used in these projections

in comparison to the train service available and the traffic-congested highways, so the company felt that a charge roughly equivalent to the train fare could be made for the daily round trip.)

Based on these predictions we drew up figures for the proposed operation. In every instance, except for passenger utilization, we subjected each figure to the harshest examination by knowledgeable people outside the company that we could find. This resulted in everybody being on the audit team. All data for operations were compiled in this way, and were massaged in the light of these third-party objections.

Based on these predictions, we first produced a cost statement, showing all major direct costs associated with the enterprise—costs per boat, methods of financing each boat, and costs for fuel and oil changes. There would have to be insurance on each unit, there would have to be annual maintenance, there would have to be engine overhaul periodically, there would be costs for all unscheduled maintenance, for cleaning of the passenger quarters, and a fund for miscellaneous costs including inspection of auxiliary equipment when required. See Exhibit 1, page 16.

In other words, we put ourselves in a frame of mind as if we were already in the company. And the data were inspected by engineers, labor people, insurance specialists, and management itself.



The hydrofoils, air cooled, fast, and new, offer definite advantages to harried commuters.

Shuttle Runs

Factor	Amounts
72	
$1	
	$ 72.00
32	
	$ 2,304.00
210	
	$483,840.00

Average Number of Passengers	Gross Income
72	$483,840
65	435,456
58	387,072
50	338,688
43	290,304
36	241,920
29	193,536
22	145,152

Excursion Trips

Factor	Amounts
72	
$6	
	$ 432.00
4	
	$ 1,728.00
210	
	$362,880.00

Average Number of Passengers	Gross Income
72	$362,880
65	326,592
58	290,304
50	254,016
43	217,728
36	181,440
29	145,152
22	108,864

Charter Service

Factor	Amounts
Not applicable	
Not applicable	
	$ 1,000.00
	$ 1,000.00
Weekend days 104	
Holidays 9	
	$113,000.00
	113,000.00
52 Weekend days & 6 Holidays	$58,000

EXHIBIT 4

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Pro Forma Income Statement for Each Boat — One Year's Operation

	General Explanation or Basis of Apportionment		Total All Services
Factors used in this projection:			
Number of passengers and load factor	Capacity 72		
Price per trip			
Total income — per trip			
Number of trips — per day			
Total income per day			
Estimated number of day's operation			
Total annual income			$549,400
Running time — hours		2,186	
Estimated miles @ 36 mph		78,696	
Projected income:			
Gross income — shown above			$549,400
Less: Commissions expense	20% Excursion trips	$36,288.00	
Dockage and City Franchise	6% of gross income	32,964.00	
I.H.I Franchise	3% of gross income	16,482.00	
Total deductions			85,734
Gross income — adjusted			$463,666
Gross income — adjusted	Per running hour	$ 212.11	
Projected costs — direct:			
Running hours worked		2,186 hrs.	
		Per Hour	
Wages — direct	@ $19.74 per hour	$19.74	$ 43,157.40
Wages — burden time	Calculated elsewhere	7.31	15,971.80
Fuel and lubrication	@ $9.27 per hour	9.27	20,264.22
Oil changes	@ $.59 per hour	.59	1,289.74
Annual maintenance	@ $6,650 per year	3.04	6,650.00
Overhaul	@ $1.00 per hour	1.00	2,186.00
Foils and outfitting	@ $6.35 per hour	6.35	13,881.10
Insurance	Estimate $35,000 per year	16.01	35,000.00
Depreciation	Calculated elsewhere	16.45	35,958.00
Total direct cost of operating boat — forward		$79.76	$174,358.26

Now we had the basic costs for each boat, purchase price, operating costs, and overhead or maintenance costs. Now we had to project anticipated income against these costs to see where we were.

The basic commuter service from three points in New York State, New Jersey, and Connecticut to the city, given the known speed of the hydrofoils, would be from 45 minutes to one hour. The possible commuting load each day would be hydrofoil capacity—72 passengers. Management assumed a twice daily proportion of 75 per cent of this or 54 passengers on an average. Thus a total passenger run load of 108 commuter trips was assumed —once in the morning between 7:00 and 8:00, once out again from 5:30 to 6:30 at night. Management also assumed that it could charge $3.00 for each commuter run, a rate roughly competitive with other far less comfortable methods of transportation, as is the running time for the trip.

That would leave, then, the hydrofoils lying idle much of the time between 8:00 in the morning and 5:30 in the afternoon. But people in the city have to get from one of its boroughs to the others. New York is an island, Manhattan, surrounded by four subsidiary boroughs (Brooklyn, Queens, Staten Island, and the Bronx). Most New Yorkers have a deep and abiding hatred for subways, cabs are scarce and prohibitively expensive, and if a private car is used there's never any place to park. So if shuttle runs could be made between points in the city, during the day hours from 8:00 to 10:00 in the morning and 3:30 to 5:30 in the afternoon, the idle hydrofoils could be kept busy. It was management's opinion that the customers would be infinitely better off on a cost basis than they would with any other means of transportation except the subway.

So the entrepreneurs figured that

Commuter Service		Shuttle Runs		Excursion Trips		Charter Service	
75% = 54 passengers		50% = 36 passengers		50% = 36 passengers		Not applicable	
$3 one way		$1 each run		$6 each trip		$ 1,000 net per day	
$ 162.00		$ 36.00		$ 216.00		$ 1,000	
2		32		4		1	
$ 324.00		$ 1,152.00		$ 864.00		$ 1,000	
210		210		210		58	
	$68,040.00		$241,920.00		$181,440.00		58,000.00
441		567		714		464	
15,876		20,412		25,704		16,704	
	$68,040.00		$241,920.00		$181,400.00		$58,000.00
				$36,288.00			
$ 4,082.40		$14,515.20		10,886.40		$ 3,480.00	
2,041.20		7,257.60		5,443.20		1,740.00	
	6,123.60		21,772.80		52,617.60		5,220.00
	$61,916.40		$220,147.20		$128,822.40		$52,780.00
$ 140.40		$ 388.27		$ 180.42		$ 113.75	
441 hrs.		567 hrs.		714 hrs.		464 hrs.	
Per Hour		Per Hour		Per Hour		Per Hour	
$19.74	$ 8,706.50	$19.74	$11,194.08	$19.74	$14,096.24	$19.74	$ 9,160.58
3.76	1,658.00	13.16	7,462.71	6.39	4,560.55	4.94	2,290.15
9.27	4,088.07	9.27	5,256.09	9.27	6,618.78	9.27	4,301.28
.59	260.19	.59	334.53	.59	421.26	.59	273.76
3.04	1,341.56	3.04	1,724.86	3.04	2,172.05	3.04	1,411.53
1.00	441.00	1.00	567.00	1.00	714.00	1.00	464.00
6.35	2,800.35	6.35	3,600.45	6.35	4,533.90	6.35	2,946.40
16.01	7,060.84	16.01	9,078.22	16.01	11,431.84	16.01	7,429.10
16.45	7,254.10	16.45	9,326.71	16.45	11,744.74	16.45	7,632.45
$76.21	$33,611.00	$85.61	$48,544.65	$78.84	$56,293.36	$77.39	$35,909.25

each boat in the commuter service could make eight round trips per day between points in the city at a total running time of 15 minutes (five minutes each way plus docking time) for a total cost per passenger trip of one dollar. Less than one-fifth average cab fare, a little less than three times single subway fare.

The managers assumed they could safely calculate a load factor of 50 per cent, or 36 passengers on the average, for each of the 16 intracity round trips each boat would make during the day.

Assuming the shuttle runs only between 8:00 and 10:00 in the morning and 3:30 p.m. and 5:30 p.m., that would leave the boats idle between 10:00 and 3:30. One of New York's oldest traditions is cruising around Manhattan, the central island. Again assuming that $6.00 could be charged for a one-hour cruise on the water, there seemed to management to be a good possibility of getting a load factor of 50 per cent, or 36 passengers on average. Here presumably the price could be higher than that charged for the daily commuter run—$6.00 seemed possible for each passenger for each boat. See Exhibit 2, page 17.

What about weekends? It should be at least possible to rent the boats for charter service on weekends and holidays. One day of each weekend and each holiday through the year became the assumed utilization of the boats, and the price to be charged the charter operator was set at $1,000.

Two crews per boat

Obviously, if the hydrofoils were to be given such heavy use, all the costs for each boat in service would rise sharply but labor costs would climb most steeply of all. So we figured two crews for each boat, three men to a crew, each working

11.5 hours per day for three days each week—a total of 34.5 hours per week.

Next we figured the range of gross income depending on the utilization of the boats and the fare charged each passenger or charter boat operator for each type of service. This is the unique part of the work we did on the hydrofoil engagement because we figured gross income not only on the percentage of load capacity management was reasonably certain it could expect on each type of service, but also on all percentages ranging from 100 per cent of load capacity for each boat all the way down to 30 per cent of load capacity. See Exhibit 3, pages 18-19. (Obviously all these figures could be changed at will, including unit price for the various fares. The encircled items on pages 18-19 are the ones management felt would be most feasible.)

Finding a breakeven point

Our next step was to figure the percentage of passenger utilization that would be required on each type of service to reach breakeven point.

We found that breakeven would be reached at a much lower percentage of utilization than management was confident it could get: 55.02 per cent on commuter runs, whereas management had assumed 75 per cent capacity; 14.47 per cent on shuttle runs within the city, whereas management had assumed it could achieve 50 per cent; 29.27 per cent on excursion runs, whereas management had assumed 50 per cent utilization; and 47.01 per cent utilization on charters against management's confidence in 50 per cent utilization.

Even though one entity, total operations, was programed into components (commuter runs, shuttle runs, charter runs, etc.) so as to note the volume point at which

EXHIBIT 5

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Pro Forma Income Statement for Each Boat—One Year's Operations—Continued

	General Explanation or Basis of Apportionment	Total All Services	
		Per Hour	
Gross income—adjusted	Brought forward	$212.11	$463,666.00
Direct costs of operating boats	Brought forward	$ 79.76	$174,358.26
Apportioned costs:			
Estimated costs when 10 boats are in operation:	(Allocated to services on the basis of direct running time)		
Supervisory maintenance of boats	One tenth normal budget	$ 1.82	$ 3,980.00
General and administrative expenses	One tenth normal budget	10.12	22,120.00
Total apportioned costs	Per boat	$ 11.94	$ 26,100.00
Total cost of operating boat		$ 91.70	$200,458.26
Interest expense—per boat	First year cost	$ 14.85	$ 32,454.00
Total cost per boat—including finance charges		$106.55	$232,912.26
Net profit—per boat—prior to income taxes		$105.56	$230,753.74
Statistical data:			
Total costs, including first year interest			$232,912.26
Passenger capacity (72) × trips per day × No. of days in operation = Maximum passenger trips = Cost per passenger seat, per trip			
Total cost per mile traveled: Number of running hours Miles traveled × est. 36 mph = Cost per mile traveled		2,186 running hours 78,696 miles $2.96 cost per mile	
Cost per seat per mile traveled		$.041	

Our next step was to figure the percentage of passenger use needed to reach breakeven . . .

each separate operation could be expected to become self-sustaining, as well as the potential profit which each type of operation could contribute to profits at various levels of utilization, the breakeven levels were not presented with the same certainty as the other figures. They were indicators mainly, subject to all the usual caveats normal to all accounting forecasts: the inability to forecast future events, to make ironclad guarantees, etc. (All other figures used throughout were subject to the same caveats, but we felt a lot more certain about other figures than we did about passenger utilization; that was always the most debatable figure of them all.)

Next we worked out the figures for the operating costs, and interest expense of one boat, less the income estimated to be generated by one boat for one year, to arrive at the amount of profit that could be expected to be generated by one boat during one year. (Operating costs included all the costs shown in Exhibit 4, pages 20-21, labor, fuel, docking, maintenance, repairs, etc.)

From this we deducted the overhead costs—the administration and supervision costs of the operations, based on a projected fleet of ten boats, and estimated the necessary

Commuter Service		Shuttle Runs		Excursion Trips		Charter Service	
Per Hour		Per Hour		Per Hour		Per Hour	
$140.40	$61,916.40	$388.27	$220,147.20	$180.42	$128,822.40	$113.75	$52,780.00
$ 76.21	$33,611.00	$ 85.61	$ 48,544.65	$ 78.84	$ 56,293.36	$ 77.39	$35,909.25
$ 1.82	$ 802.92	$ 1.82	$ 1,032.33	$ 1.82	$ 1,299.95	$ 1.82	$ 844.80
10.12	$ 4,462.45	10.12	5,737.44	10.12	7,224.92	10.12	4,695.19
$ 11.94	$ 5,265.37	$ 11.94	$ 6,769.77	$ 11.94	$ 8,524.87	$ 11.94	$ 5,539.99
$ 88.15	$38,876.37	$ 97.55	$ 55,314.42	$ 90.78	$ 64,818.23	$ 89.33	$41,449.24
$ 14.85	$ 6,547.22	$ 14.85	$ 8,417.85	$ 14.85	$ 10,600.25	$ 14.85	$ 6,888.68
$103.00	$45,423.59	$112.40	$ 63,732.27	$105.63	$ 75,418.48	$104.18	$48,337.92
$ 37.40	$16,492.81	$275.87	$156,414.93	$ 74.79	$ 53,403.92	$ 9.57	$ 4,442.08
	$45,423.59		$ 63,732.27		$ 75,418.48		$48,337.92
2 trips	144	32 trips =	2,304	4 trips =	288		
210 days		210 days		210 days			
30,240 pass. trips		483,840 pass. trips		60,480 pass. trips			
$1.50 per pass. seat		$0.13 per pass. seat		$1.25 per pass. seat			
441 running hours		567 running hours		714 running hours		464 running hours	
15,876 miles		20,412 miles		25,704 miles		16,704 miles	
$2.86 cost per mile		$3.12 cost per mile		$2.93 cost per mile		$2.89 cost per mile	
$.040		$.043		$.041		$.040	

EXHIBIT 6

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Pre-Operating Expenses — Prior to Delivery of First Boat

Classification	Month 1	Month 2	Month 3	Month 4
Start-Up Costs:				
Maintenance Manager	$ —	$ —	$ —	$ —
Crew Training	—	—	—	—
Operating Costs — Survey Boat	—	—	—	—
Miscellaneous — Including Payroll Taxes	—	—	—	—
Depreciation — Survey Boat	—	—	—	—
	$ —	$ —	$ —	$ —
General and Administrative:				
Operations Manager	$ 2,500	$ 2,500	$ 2,500	$ 2,500
Assistant Manager	—	—	—	—
Secretary	650	650	650	650
Office Rent	500	500	500	500
Office Supplies	2,500	200	200	200
Telephone	250	250	250	250
Ticket Stock and Schedules	—	—	—	—
Advertising and Promotion	—	—	10,000	—
Travel and Entertaining	500	500	500	500
Legal and Audit	1,000	1,000	1,000	1,000
Payroll Taxes	350	300	200	150
Miscellaneous — Including Reserve for Contingencies	2,500	2,500	2,500	2,500
	$10,750	$ 8,400	$18,300	$ 8,250

EXHIBIT 7

INTERNATIONAL HYDROLINES, INC.
TRI STATE AREA
Pro Forma Flow of Funds Statement — Exclusive of Capital Contribution

	Month 1	Month 2	Month 3
Source of funds:			
Depreciation expense — not requiring a cash expenditure:			
Survey boat	—	—	—
Total funds provided	—	—	—
Funds applied			
Net losses from operations — exclusive of insurance expense listed separately	$ 10,750	$ 8,400	$ 18,300
Deposit on boats	5,000		45,000
Purchase of work — survey boat			
	$ 15,750	$ 8,400	$ 63,300
Net change during month	$(15,750)	$(8,400)	$(63,300)
Net change to beginning of month	—	(15,750)	(24,150)
Change — period to date	$(15,750)	$(24,150)	$(87,450)

Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Total
$ —	$ —	$ —	$ —	$ —	$ 1,000	$ 1,000	$ 2,000
—	—	—	—	—	3,000	3,000	6,000
200	200	200	200	200	200	200	1,400
—	—	—	—	—	500	500	1,000
100	100	100	100	100	100	100	700
$ 300	$ 300	$ 300	$ 300	$ 300	$ 4,800	$ 4,800	$ 11,100
$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 27,500
—	—	—	—	—	1,000	1,000	2,000
650	650	650	650	650	650	650	7,150
500	500	500	500	500	500	500	5,500
200	200	200	200	200	200	200	4,500
250	250	250	250	300	300	300	2,900
—	—	—	—	500	500	500	1,500
—	—	—	—	2,000	2,000	5,000	19,000
500	1,000	1,000	1,000	1,000	1,000	1,000	8,500
1,000	1,000	1,000	1,000	1,000	1,000	1,000	11,000
50	50	50	—	—	—	—	1,150
2,500	2,500	2,500	2,500	2,500	2,500	2,500	27,500
$ 8,150	$ 8,650	$ 8,650	$ 8,600	$11,150	$12,150	$15,150	$118,200

Pre-Operating Period

Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11
—	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
—	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100	$ 100
$ 8,250	$ 8,450	$ 8,950	$ 8,950	$ 8,900	$ 11,450	$ 16,950	$ 19,950
50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
	10,000						
$ 58,250	$ 68,450	$ 58,950	$ 58,950	$ 58,900	$ 61,450	$ 66,950	$ 69,950
$(58,250)	$(68,350)	$(58,850)	$(58,850)	$(58,800)	$(61,350)	$(66,850)	$(69,850)
(87,450)	(145,700)	(214,050)	(272,900)	(331,750)	(390,550)	(451,900)	(518,750)
$(145,700)	$(214,050)	$(272,900)	$(331,750)	$(390,550)	$(451,900)	$(518,750)	$(588,600)

annual income for each boat (in a ten-boat fleet) that would be required for final breakeven of the costs of administering a ten-boat organization, Exhibit 5, pages 22-23. (Calculations on the price per boat assumed an initial order of ten hydrofoils.)

Next we determined the pre-operating expenses for the first year of proposed operations. See Exhibit 6, pages 24-25. Obviously, trained hydrofoil crews are not available at the nearest employment agency. So there would have to be some money allotted to training seamen in operations of the hydrofoil. Equally obvious, such training would not have to extend over the entire year so we allowed Months 10 and 11 of the year prior to operations for crew training. Operating costs of a survey boat fell into the same category, except that we allotted Months 5 through 11 to these costs. As soon as the survey boat went into the water it would begin to depreciate in value. Depreciation was figured from Months 5 through 11.

Thus, we phased in each boat in accordance with delivery schedules.

Administrative expenses had a different timetable, however. As soon as the company began its first organizational moves, it would have to have a manager. So his salary was included from Month 1 of the first year. However, although he would need a secretary as soon as he came on the job, he wouldn't need an assistant until actual operations were imminent. Similarly ticket stock and schedules wouldn't be needed until Month 9 of the year although legal and audit expenses, office rent, telephone, and office supplies would be needed for each of the 12 months.

This projection for the year of preparation for actual operations, of course, resulted in a negative figure, since no income would flow in until the hydrofoils actually started carrying pasengers. Thereafter, assuming one boat was phased in each month for 10 months during the first year of operations (we drew up a pro forma income statement for operating 10 boats for a period of 15 years) the totals for the first year showed we would exceed our operating breakeven point by several thousand dollars during the second month of operations.

We also prepared a pro forma flow of funds statement for the year prior to operations to show what major outlay of funds would be required in any given month, exclusive of capital contributions, Exhibit 7, pages 24-25, and then prepared pro forma balance sheets for the first 15 years of operation. Although the results from the first year's flow of funds statement were negative, this negative figure was eliminated during the second year and a slight positive figure was recorded. The retained earnings from the second through the fifteenth years of operation showed consistent reduction of the Title XI mortgage payable and a substantial retained earnings figure for each year net of income taxes.

Upon commencing operations, the pro forma figures would, we felt, also constitute a natural budget—so that any variances could be noted immediately and projections changed. So our pro forma would also constitute a "keep the fingers on the pulse" measure, to assist management in its future operations and to permit us to update our figures and our estimates.

Long-time readers of this magazine will perhaps find a ring of familiarity about this article. I wrote in one of MANAGEMENT ADVISER's earliest issues about our experiences in conducting a similar feasibility study for a hydrofoil shuttle service between Manhattan and the New York World's Fair in Queens ("The Feasibility Study—'Fiscal Insurance'," May-June, 1964). That venture did not work out for a number of reasons, including: the inadequacy of capital realized as compared to the capital required under our pro forma flow of funds statements and the very poor attendance finally foreseen for the Fair.

All that has changed. Modern hydrofoils are much larger than the 1964 model, and they can operate in New York harbor year round instead of just during the summer season. They are equipped with radar so they can navigate even in bad weather. The capitalization—from sources in other states—is more than adequate. And our new technique of deriving all our figures from "future events considered as though they'd already occurred" and of computing the widest possible range of sales (passenger tickets) gives our figures a probable reliance factor they couldn't have had before.

Then too, the physical circumstances of the city have changed in such a way that the hydrofoil venture looks a much more certain thing this time. The commuter runs are all between points at which management feels the fares are competitive with other means of transportation and the hydrofoil offers a time advantage over the commuter railroads as well. Hydrofoils will be air cooled during the summer months; highballs and mixed drinks will be available on the trip home at night, and coffee and light breakfasts in the morning; the boats can be docked at the low-cost suburban locations from which they will make their first run into the city every weekday.

Since the time the figures were prepared certain costs have changed because of inflation, because of escalation clauses in labor agreements, the rise in the cost of fuel, etc. But, again, each of these increases can be slotted in according to the formula we have prepared.