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"Attitudes and experience of users, managers and other interest groups in respect of competition, ownership, regulation, productivity, planning, patronage and cost of bus services"

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1 Introductions

1.1 The background for this paper lies in the following:-

- .1 Sri Lanka experience with privatisation and competition
- .2 Observation in India, Indonesia, Malaysia, Britain
- .3 Recent reports, research papers and journal articles

1.2 The interest groups considered are primarily the following:-

- .1 Consumers
- .2 professionals
- .3 evaluators
- .4 politicians

1.3 The following aspects of bus operation are discussed:-

- .1 modes of competition
- .2 patterns of ownership
- .3 regulations
- .4 productivity
- .5 cost
- .6 planning
- .7 patronage
- .8 network

1.4 The layout of the paper takes the following sequence

- .1 Resume of Sri Lanka experience
- .2 Notable observations in other countries
- .3 Descriptions of role and expectation of each of the interest groups
- .4 Discussions of each of the aspects of bus operation ending in each case with the position of the interest groups.
- .5 Summation

Resume of Sri Lanka Experience

2.1 Sri Lanka has moved round the classical historic cycle of bus ownership vide Fig 1 attached.

2.2 Competition among one-bus owners and war among expanding acquisitions led to regulation and then territorial and route monopolies, after which the bus-baron profit-first tendency led to complete nationalisation in 1958. Early success, expansion, efficiency, route rationalisation and nascent professionalism reached a plateau whence failure by government to invest in fleet expansion or to allow fare increases proportionate to inflation led to supply deficiency in the face of huge increases in demand. In 1979 a new government allowed private operators to compete. The consequences have included intense frequency on popular routes and at popular times, demoralisation of the government bus companies, reluctant subsidies for school and rural services (albeit drawn out of taxes imposed on government bus operation), short average survival periods of private one-bus owners and the virtual cessation of effective research, planning and innovation.

2.3 The state of affairs where numerous (12,000) private one-bus owners, mostly minibus, compete with each other and with large government territorial undertakings is interesting. On the one hand popular routes have a constant flow of buses sometimes reaching 200-400 buses per hour during most of the day. On the other hand routes of weak demand are left entirely to Government buses, which, due to pressure on cash flow, are not as regular as they used to be.

2.4 The operating style of one-bus fleets has a general pattern. All owners licensed to operate on a given route form an association which regulates departures from the terminal and keeps out intruders. Since there is oversupply on popular routes, regulators release buses from a terminal on first-come first-go basis with excess buses held back for their turn. No bus likes to depart without at least a full seating load (usually 26 passengers) so that passengers at wayside bus-stops have to stand uncomfortably. (many mini-buses have low roofs). At peak times such buses race down the road to collect more passengers at key bus-stops and to complete a trip so as to get back for another trip in the direction of prevailing demand. During off-peak the one-at-time releasing procedure at the terminal is the same, but because demand at the terminal is less the number of buses waiting for their trips is more. On the off-peak trips buses do not rush, but on the contrary hang back at most bus-stops in the hope of gleaning an extra passenger or two.

2.5 Both at peak and off-peak, buses pick up on hail at official bus-stops (shelters provided and maintained by the Government Bus Company), informal bus stops and anywhere else. While this practise is frowned on by police and car-owners, it is welcomed by passengers. Although regulation by the association's runners at the terminals inhibits intra-association competition, there is competition on the road between such buses and government buses and with buses of other associations on roads commonly served by several routes, which is the case with most radial routes into city centres and on most circumferential routes.

2.6 In the face of private mini-buses, most Government Bus divisions have become apathetic. Their fixed departure schedules are subverted and their own cash flow problems lead them into similar practices. They are unwilling to take risks into innovative services and routes.

2.7 Private bus associations cannot adopt scheduling efficiencies such as pushing early morning buses further out beyond the terminal, or turning second or third trip peak period buses short of the main outer terminal. Also they cannot shift buses from route to route to match differential peak times.

2.8 An interesting phenomena is that waiting passengers always seem to board the first bus, even if an overfull mini-bus, and even when a large government bus is seen to be approaching and is likely to be lightly loaded. The philosophy of "a bird in hand is worth two in the bush" prevails, probably because confidence in government buses, despite their superior comfort, is absent.

2.9 It is not easy to conceive a system for persuading one-bus fleet owners (or their associations) into scientific operation, recognising catchments rather than demand symptoms, increasing bus utilisation (so reducing cost), anticipating demand down the road etc etc.

3 Notable observations in other countries

3.1 Jakarta, capital of Indonesia, shows remarkable similarity with Colombo, Sri Lanka. But here government as well as privately owned buses call out their destinations and linger on route to collect more fares. Oversupply is abundantly evident at the seven principal terminals where many buses, minibuses and mikrolets await their turn for departure, meanwhile enticing patronage. But knowledgeable patrons wait down the road to ensure boarding a mobile bus. There is little evidence that competition has stimulated innovation or efficiency. Government buses are rented out to the crews, ensuring that they follow private bus behaviour. All vehicles are licensed for specific routes so there is no free entry and open competition. Passengers mostly hail the first vehicle that comes along.

3.2 In Kuala Lumpur eight private bus companies enjoy their own territories with little inter-company competition. However, smart well-labelled minibuses compete. Some of the bus companies appear to be very efficient. As elsewhere passengers (at bus-stops) board the first vehicles to their destination.

3.3 Singapore Bus Service (SBS) provides adequate service from customers point of view. TIBS offers competition on some parallel routes. Passengers take the first bus. The new Mass Rapid Transit Railway is an effective competitor for rides above 5km.

3.4 In Indian cities the process of gradual governmentisation (by State Governments mostly) is proceeding. Statistics show gradual efficiency improvements. The Association of State Road Transport Undertakings (ASTRU) and its subsidiary Central Institute for Road Transport Research and Training (CIRT) have played an important role by publishing comparative statistics and promoting research. However because of inexorable demand growth, nearly all the undertakings suffer public and media disfavour.

3.5 In London buses are incurring declining patronage and diminishing average ride length despite recent growth in travel demand as seen on the urban railways. The decline can be attributed to unreliability, sparse headways and painfully slow journeys caused by OPO, traffic lights and traffic congestion. The newcomers (Grey Green and Maidstone Boroline) who entered by competitive tender on a few central routes fare no better.

3.6 Elsewhere in Britain buses appear more plentiful and benefit from less congestion and more bus-priorities. In city centres services seem to have improved by reason of competition. A lot of research has been done and literature published most of which is inconclusive as to net gain or loss from two years of deregulation and competition. However new-comer dropout rates appear similar to Sri Lanka albeit at a bigger firm size (eg Shamrock which lasted nearly 2 years in Bourn-mouth, and UTI which launched 200 minibuses in Manchester yet withdrew suddenly).

3.7 In Sydney's outer suburbs, private operators appear to work more cost-effectively than Government's UTA yet, as Hensher points out in careful analysis, they operate to different objectives under different constraints. Moreover according to Westbus, they would not ply if on-the-road competition was imposed on them. Throughout Australia there appears to be fairly frequent turnover of private bus firms and their ownership and franchises.

4 Role and Expectation of Consumers

4.1 Manchester Corporation Transport General Manager said in 1930 :-
 "The man in the street will argue that he likes the choice of several services; it is so convenient. He does not realise that it is he who will have to pay for them all. The man in the street is never logical and usually has to be guided by some authority in order to prevent waste and abuse" (Pilcher 1930). Roth, Walters and Hibbs would probably argue that the man in the street votes with his feet and his purse as well as his political franchise.

4.2 However, the market for bus service is rarely looking for a particular bus at a particular time, but rather for a flow of buses at dependable intervals, interlocked if possible with other flows down the line so that complex multi-route journeys can be predictably undertaken. Discrete demand for a particular bus at an exact time to a particular destination appears only for long-haul coach service. The behaviour of the urban market appears to be to board the first available acceptable bus after walking (or riding) to wherever supply is reputed to be adequate.

4.3 Consumers as an interest group are rarely satisfied with bus services for manifold reasons. Firstly, expectation always increases. When yesterday's demand (whether for frequency, reliability, uncrowdedness, comfort or whatever) is satisfied, it becomes an unnoticed norm, giving way to the next demand. Secondly regular comfortable rides without undue wait do not impinge on the consciousness, whereas the occasional long wait or hard ride is noticed and complained about.

4.4 Furthermore, articulate consumers are usually self-centred, in that they complain about their own journey, their own route, their own bus-stop, imagining that a whole City's demand for travel is similar to their own. Another aspect of consumer opinion is that the past is often forgotten. Earlier woes are overridden by immediate inconvenience and, in any case, younger users are not familiar with the past. Thus in Lanka, private (monopoly) bus services were decried by public and media, and nationalisation rejoiced in. A decade later when productivity and innovation reached a plateau and static supply could not meet continuing increases in demand, customer ire turned against Government buses and some harked back to imagined efficiency of private operators. Now, with government buses in decline in the face of hordes of private mini-buses, the public complaint runs against the private one-bus owners for reason of overcrowding, unticketed trips, dangerous driving etc, with some harking back to the golden age of government monopoly.

4.5 But that consumer reaction is emotional, contradictory, short-term, egocentric and conservative is no reason to ignore it. If aptly sifted it contains most of the information that operators (private & government) need to adapt and improve service. Braga of Basilia claims substantial improvement in user-friendliness, patronage and cost-effectiveness when monopoly operators listen to consumer associations.

4.6 A special attribute of urban consumers is that they take pride in a Municipal bus service which carries the name and crest of the town on the bus face or side, much as citizens are proud of their town football teams. Londoners used to think, with only partial justification, that London Transport was best in the world, and this was an enormous advantage to LT managers. Given such local pride, consumers find it easier to complain to local elected politicians, or even administrators and managers, than to private individuals or companies or remote holding companies. For this reason alone, other things being equal, users will prefer government-owned bus services, especially if run by local government.

5 Role and Expectation of Professionals

5.1 The demand for bus service is diffused, multipurposed and multijourneyed. The essence of a bus is the picking up and putting down of people on the street all along the run of the route. The appearance of people at particular bus-stops at particular times is the symptom of demand, the demand symptom shaping itself to the perceived supply.

5.2 The task of professional bus management is to diagnose the symptoms and to provide a user-friendly (i.e. demand-maximising) network of services at the least cost in scarce resources. What is scarce varies from country to country. In developed countries manpower is scarce, hence expensive; in developing countries buses are scarce; in most countries energy is expensive; in classical-economics-dominated countries tax-payer money is scarce to support bus services, so fares need to cover almost the whole of cost; in developing countries passengers' disposable incomes are short so that high fares encourage central city slumming.

5.3 Assuming that bus and man are the key scarce resources, the professional has to ensure high productivity of both in a mixture of thrust at increasing bus-km per bus per day and bus-km per man per day and at increasing system or network patronage. OPO is an apparent method of increasing bus-km per man per day but (by increasing dwell-time and disaffecting crews and clients) can be counterproductive to increasing pax-km per bus and per man per day as shown by Oxford University TSU in a study of OPO in London.

5.4 The professional has to look at network effects. He must not regard each bus-trip or each route as a cost centre. For instance a lightly loaded last bus-trip at night is often a confidence-maker which induces high patronage for the penultimate or even prepenultimate trip. Feeder routes may appear non-cost-effective on their own, but linked with patronage fed on to trunk routes, their system effect may be beneficial.

5.5 Professionals can discern that symptoms of heavy demand, seen often at key road intersections, are based on walk-on access from 4 main directions and from interchange passengers. If more buses are turned at such nodal points the walk-on distance increases, so artificially enlarging the catchment area. Non-professionals will tend to terminate even more buses at the node, so exaggerating the problem with concomitant traffic congestion. Professionals will use OD research to plan new routes; sometimes enabling passengers to ride one side of a triangle in a single bus trip instead of two sides in two with interchange; and sometimes turning short-run buses either upstream or downstream of the node, thus catering to the real demand rather than the symptom.

5.6 In like manner professionals may open new parallel routes (provided a minimum say 10-min frequency can be supplied) to relieve a heavy trunk route, rather than increasing intensity on the latter, so helping to confine catchment boundaries, reduce bus-stop clogging and at the same time reduce walking distance for some passengers.

5.7 In all these matters a professional is better able to function if he operates over the whole system of bus supply, route planning, fare structure, bus design, bus-stop placement etc etc. Whatever advantages may flow from competition, whether regulated or not, or from total privatisation, will tend to be cancelled out by loss of systems planning and management. A private unregulated system monopoly may provide the right context for the professional, but probably with a less socially aware leadership and a shorter planning time-horizon.

5.8 Professionals are largely motivated by achievement and recognition. Remuneration is less important, and corporate profit largely irrelevant, just as a doctor in a free government hospital or a teacher in a free government school is concerned with the service to his wards, and is unaware of whether the hospital or school is making a profit in financial, economic, or consumer-surplus maximisation terms. To achieve, professionals need stability and recognition that running buses is a special profession. Such recognition does not emerge from one-bus owners, rarely emerges from such owners grown into fleetowners by successive take-overs, does sometimes develop in big private operators like Kowloon Motor Bus where the owners are busy in other fields, and is most likely to flourish in government-owned bus companies.

5.9 Private company ownership is volatile (eg Britain in the last year or so) with unpredictable changes which can upset professional management. Governments do change, though less often and less unpredictably. The political community too tends to climb down too often from policy intervention to short-term petty interference. Yet on the whole, professional managers appear to prefer government ownership and (oppositely from consumers) ownership by central rather than local government.

6 Role and Expectation of Evaluators

6.1 The political community, and to a lesser extent professional managers often commission economists and transport planners to evaluate prospective improvements (to bus services), reorganisations (of services and corporate structures), alternative policies and strategies etc and occasionally performance after a change.

6.2 Such evaluators, or consultants have a great need for reliable data. Some evaluators tend to use "after" statistics to confirm their pre-project 'foresight', and therefore want the data relevant to this usage.

7 Role and Expectations of Politicians

7.1 Politicians have been increasingly put under pressure to "solve" the transport problem. The need arises from vociferous public complaint coupled with the task of finding money to invest in and support public transport as well as provide infrastructure for private transport. In finding money they have to balance resistance to fare-increases against resistance to tax-increases

7.2 Many politicians are accustomed to pre-conceived views of the solutions, based sometimes upon personal experience or anecdotal evidence and sometimes on **ideology**. The political community as a whole would like the problem to go away. Those in decision-making roles (along with the administrative community which advises them) are often tempted to step down from the **policy-making role** (and policy formulation) to the role of management.

8.1 This section deals with the modes by which competing services are deployed against each other. There are several such modes of competition including

- .1 Competition among bidders to obtain a franchise for a route or group of routes.
- .2 Competition between modes (eg rail, tram, bus) each separately owned and operated
- .3 Competition within a mode by parallel or overlapping services, each operator or association of operators running an exclusive "route" or service.
- .4 Competition between individual operators on the same route.

8.2 The first case enables the winning operator to have franchised monopoly of sorts, the win depending largely on the winner's estimating skill and willingness to take medium-term risk with an uncertain long-term future. The winner is not interested in the rest of the network. The system of competitive bidding leads to an intensive market in used buses.

8.3 The second and third cases lead to real competition wherever the competing routes merge or are proximate enough for the "better" operator to enlarge his catchment at the expense of the competitor.

8.4 The fourth case, that of on-street apparent competition prevalent with easy entry of one-bus fleetowners, leads to an illusory type of competition with buses jostling for position and crews shouting their wares noisily, yet customers ignoring the cajoles and going for the apparent first bus or first seat.

8.5 The question then arises of how competitors on the same route are to behave. Should individual operators race ahead of each other, cowboy-style, to catch the load at the next stop, or should they hang back to catch the demand emerging from sideroads, or should they stop metre by metre along the road (in user-friendly manner) to reduce the walking access time and waiting time of the clientele? Should a two-bus firm or cartel "nurse" a competitor's bus with one of its pair always reaching the next stop ahead of the rival?

8.6 In a more orderly fashion, if two competitors, each with say 10 buses were to compete on a route with all others excluded, how would they compete? Would they duplicate each departure time to maintain a regular interval, or would they allocate alternate departure times at a closer regular interval? If they did the latter, it would amount to collusion, with incumbent power to keep out intruders. Suppose they agreed to timetable collusion but offered "quality" competition, would the demand wait for next bus because it was equipped with the latest video-teledrama presentation? In Singapore does anybody wait for a TIBS bus or a SBS bus serving the same destination,

8.7 Free entry would theoretically allow any intruder in. Even without incumbent protest, in what way will the intruder compete? An effective intruder would need to introduce enough higher quality buses with a clear image livery to operate a 2-minute service down the road. On a 10km route this would need at least 30 buses making it a lumpy risky investment. Even then could he stave off incumbent reaction? Consider UTI in Preston and Manchester and Shamrock and Rambler as well as Badgerline in Bournemouth. Incumbents may resort to political protest, nursing tactics or even physical measures. Bus history is full of such tactics.

8.8 Consumers would not dislike competition on their own habitual route so long as it leads to increased frequency and/or capacity, but would be upset by resultant network instability. Consumers resent too many changes so that their occasional journeys are placed in doubt.

8.9 Professionals may dislike the disorderless of any form of competition and the lack of a secure future in which to plan and achieve.

8.10 Evaluators will regret the reluctance of competitors to reveal patronage as well as financial data.

8.11 Politicians will mostly feel content if the media is silent on public transport. If the populace seem happy they will think on other spheres, but if competition does not work, they will feel at least one remove from the complaints.

9 Patterns of Ownership

9.1 Government owners comprise departments at National, State, County or City level, or statutory bodies established by one or more such governments. Private owners range from public quoted companies down to one-bus owners and lessees.

9.2 Privatisation can take many forms. On the one hand a government-owned enterprise can be sold to private investors, or its buses sold separately or in batches to private individuals. Also individuals can be let in to a territory formerly operated by a government monopoly, the latter retaining its structure and fleet but no longer protected.

9.3 By and large the bigger the fleet size, the greater the likelihood of professionalism, innovation and research, but also a tendency towards lethargy, conservatism and a sellers' market syndrome. The smaller the fleet size the greater the concern to cut cost by avoiding empty or lightly loaded trips and hence poor vehicle utilisation. This is exaggerated by the likelihood of oversupply.

9.4 Consumers are not directly concerned about ownership or over-supply. They resent government-servant sloth when it becomes transparent, yet resent apparent exploitation by private owners more. Consumers do seem to take civic pride in their own city's buses or trams and are less likely to cheat municipal operators by fare dodging and over-riding.

9.5 Professionals have no place among small-fleet owners, and seem to prefer central government bus companies to municipal departments where they can clash with overzealous local politicians.

9.6 Evaluators are pleased with big monopoly companies, whether government or privately owned, because of ease of obtaining data to analyse and interpret. However those who like challenges are often happy to seek data on the street to prove their a priori views for or against private ownership and competition.

9.7 Politicians have no comity of view on ownership. Those who like "interfering" appreciate the scope of central and local government ownership. But those who wish to isolate themselves from public clamour may prefer private owners.

10 Regulation

10.1 Regulation is introduced sometimes to control monopolists lest they exploit the public, sometimes to control competitors lest the indulgent warfare on the streets

10.2 Deregulation is a multifaceted word. The all-island monopoly of the Ceylon Transport Board was unregulated, in the sense that it ran buses when and where it wanted, designed and built buses according to its own perception of what was best. It did not have to seek permission from some Commission or other to innovate. On the other hand I believe the National Bus Company and British Municipal and Private Operators were so hampered. Private, mostly one-bus, owners in Lanka are deregulated in respect of fares, but have many conditions in their license, some of which are effective and some ignored. On the other hand route associations regulate departure times and punish those who turn short of destination. In the absence of associations, stray individuals have been known to set themselves up as brokers whose word is law.

10.3 Consumers tend to appreciate regulation because they feel it to be for their benefit, and often grumble about failure to enforce.

10.4 Professionals in Sri Lanka were pleased, during the time of the Transport Boards' overall monopoly, to innovate without the constraint of seeking permits. Probably all professionals would have liked this freedom. They do not like overburdensome regulation of details so that a large portion of their time is devoted to hearings before regulators.

10.5 Evaluators find a source of statistics in the regulators' offices, but are otherwise indifferent to regulation

10.6 Politicians may like a regulation-free environment where they can exercise political pressure to get routes established, extended or amended in their constituencies.

11 Productivity

11.1 Productivity is concerned with the ratio of output to input. This should be so obvious that it needs no mention. Yet many studies in recent years concentrate on the workforce input to the exclusion of other inputs (buses, spares, fuel, tyres) and, astonishingly, on an input/input measure expressed in the ratio "men per bus".

11.2 So far as workforce is concerned the proper measure is useful-bus-km per man (preferably per day to make it more assimilable), or pax-km per man per day. "Man" may be broken down into crew, maintenance, overhead and special, the latter dealing with such activities as body building, tyre retreading etc which only some bus undertakings perform in-house.

11.3 The perception that "man per bus" can be a measure of productivity or efficiency has been spread by the World Bank among others. Thus in its heyday the Ceylon Transport Board (CTB) was castigated for having 12 men per bus as against 2 or so in other places. CTB of course employed 2-man (occasionally 3-man) crews, most buses working double-shift seven days a week, and some buses deployed on 3 shifts. In addition it undertook in-house tyre retreading, body-building, ticket printing, ticket machine maintenance, engine reboring and many other functions which, for good or bad reason, have been farmed out by other undertakings. In this author's view the concept of "man/bus" should be embargoed by economists and transport managers.

11.4 Terms like pax/bus, pax/bus-km are indeed crude output/input measures, but should always be converted into pax-km per bus, or per bus-km or per crew-member-day or whatever. Pax/bus-day is a function of average trip length as much as of patronage. A 15-km ride is not comparable with a half-kilometer ride. The reason for using pax/bus as a measure appears to be unavailability of data about pax-km, arising from flat fares or coarse zonal fares. Hopefully modern electronics will shortly overcome thi

11.5 It is in any case arguable that non equi-distance-graduated fares distort demand and lead to difficult statistics. On one extreme a flat fare deters the operator from extending a route to a new node of residence or business development, but more importantly deters the ultra-short-haul (hop on) spontaneous rider who pays a high fare per km of travel (he is also deterred by doors, fixed bus-stops, etc) unless the flat fare is fixed at his resistance break-even level. If the fare is so fixed, the long-haul rider is the beneficiary of tax-payer support, arguably a good policy in Stockholm and New Delhi.

11.6 In most Indian cities there is a tapered fare structure (called "telescopic") which again favours long-haul riders, backed by a heavy minimum fare (step-on deterrent) which again deters ultra-short riders, especially at off-peak when the marginal cost of carrying them is almost zero.

11.7 Since the objective of bus-km is pax-km and not pax, it is essential to obtain reasonable estimates of pax-km whether by occasional laborious surveys or by high-tech (though by no means new) infra-red rays at entrances and exits, or seat depression counters, coupled with electronics.

11.8 Alert consumers and their associations are aware of the productivity issue and are naturally benefitted by increased capacity or frequency arising from more intensive exploitation of resources. Most passengers are dispirited when they see idle vehicles at terminals.

11.9 Professionals would generally wish to increase productivity. They have problems with obdurate trade union resistance to changes in complex work rules. Yet professionals too are often conservative and resistant to change. They have a problem compromising between intensive vehicle utilisation and improving schedule reliability by providing cushions of layovertime at terminals. Some managers tend to seek statistical measures that satisfy those who monitor or overlook transport services, ranging from board members to administrators, evaluators, politicians, media and public. Occasionally they devote operational effort to satisfying inept performance standards currently demanded of them rather than improve performance by their own standards. A case in point is the depot "run-out" statistic in Colombo telegraphed to the Ministry, which induced depot Managers to release for run-out defective buses which return to depot as breakdowns within an hour or two.

11.10 Evaluators are usually more objective in their assessment of productivity, although, as mentioned above, some choose the measure which supports their a priori view.

11.11 Politicians on the whole are disappointingly uninterested in productivity.

12 Cost

12.1 Cost, waste and value for money are much debated concepts with inadequate public presentation of how cost is incurred and determined. The essential issue is cost-effectiveness or value for resource and environmental cost. Most cost statements are poorly displayed, misleading not only the lay public and the political and administrative communities, but also objective and scientific researchers.

12.2 In many regards cost is a matter of perception. There is confusion between cost of resources consumed and transfer payments within a society, and also confusion as to when cost is incurred, as for instance how the cost of a bus, or a new train station should be allocated over accounting time periods.

12.3 Cost is a matter of perception in 3 principle items, namely depreciation, interest and taxation.

12.4 Depreciation is a variable expense arising as buses wear out and use up their initial cost as they run. It is sometimes regarded as value depletion in relation to used-vehicle markets, but this is inappropriate for a business run as a going concern. Reasonable depreciation can be charged by estimating the life-span-km of a newly acquired bus and allocating the initial cost year by year according to the kilometers run. However it is common to estimate life in years, irrespective of km-productivity and so charge a sum per year (based on straight-line, diminishing balance or some other method) to cost and thereafter perceive it as a fixed cost instead of a km-variable cost. In India presently depreciation is charged at the astonishing rate of 50% of diminishing balance for no other reason than that Inland Revenue authorities so allow as an incentive to fleet renewal. This distorts cost (and therefore profit) severely in years of heavy bus purchases. In any event, to compare one firm with another on the basis of depreciation charges varying by reference to arbitrary decision or even to policy considerations can lead to wrong conclusions.

12.5 Interest is often lumped with depreciation by annualisation of debt servicing, being total repayment of loans obtained to purchase buses. However interest is a function of capital deficiency. If a bus firm buys new buses or anything else out of cash surpluses (profit + depreciation mainly), loans are not needed and interest does not arise. Where governments do not furnish capital (ie do not invest new share capital for expanding wholly-owned bus companies, and do not allow fares to rise sufficiently for present passengers to pay for fleet expansions necessary to carry tomorrow's passengers, then interest is a cost of such decisions and not a cost of bus operation. From an economic point of view interest is a transfer payment, transferring purchasing power from borrower to lender (see Gittinger & Adler) and therefore, like taxation, not a cost. However interest is normally not perceived in these lights, but is perceived as a cost irrespective of the historical reason for borrowing; and sometimes, even when there is no borrowing at all, a notional interest is imputed and charged.

12.6 Tax can be directly imposed on bus operation by way of passenger tax (turnover tax on fares) or vehicle tax (annual tax per seat or per foot of bus-length), both heavily and capriciously imposed in India. Less explicit taxes fall on purchases by bus companies of buses, fuel, tyres and spares. In Sri Lanka for example the Government owned Petroleum Refinery and Distribution Corporation used to differentiate product prices in order to "subsidise" ("charge what the market will bear") kerosine for lower-income lighting home cooking and deter deforestation for firewood; and to impose an implied sumptuary tax on petrol used mostly for private cars. Latterly crude oil prices fell on the world market but product prices remained constant, giving the Corporation a large profit. Later still specific stiff turnover taxes were introduced to sop up this profit. Thus bus operators are paying far above real cost for fuel, but the operators and their critics perceive the price as cost and the latter castigate the operator for seeking "subsidy" to cover losses, even though the "subsidy" is only a fraction of the diesel turnover tax abstracted.

12.7 There is a strong and urgent need for preparing bus operating accounts in such a way as to display real costs and profit (or loss) before charging excess depreciation, interest and taxation, so as to enlighten public understanding and to facilitate reasonable comparison.

12.8 Consumers are largely ignorant of these cost issues and usually take for granted the published data and media comment.

12.9 Professionals too, as a whole, are surprisingly ignorant in this area, although it is in their interest to determine cost reasonably and display it for others to understand.

12.10 Evaluators have done elaborate studies to analyse differential peak and off-peak cost of operation. However more research is needed into the perceptions and realities of joint cost, allocated cost, original cost etc, and of how the cost of carrying empty seats should be allocated to passengers on seats in the same or other buses.

12.11 Politicians, like consumers, are inadequately informed about cost and, regrettably, tend to pick up tit-bits of information to advance their own theory or pet aversion.

13 Planning

13.1 In bus operation planning can take three basic shapes, or mixtures of them, viz:-

- .1 aggressive: planning to outwit the competitor
- .2 passive : planning to survive on current practices
- .3 proactive : planning to improve effectiveness, efficiency, ridership and client satisfaction

13.2 Aggressive planning arises only when competitors are present or lurking in the sidelines. Aggressive planning includes industrial espionage, anticipation of the competitors' likely moves, seeking initiatives which will pre-empt follow-up competition, and, as a last resort, training bus crews how to "nurse" a competing bus. The best name for this type of planning is "outwitting".

13.3 Passive planning amounts to the preparation of corporate plans (based on current activities, with growth extrapolated from past experience or abstracted from macro economic forecasts), operating plans and fleet investment and renewal (or disinvestment) plotted along with strategies to fund any investments found to be needed.

13.4 Proactive planning seeks ways to increase ridership and fare revenue, ways to reduce resource cost, ways to match changing patterns of demand and to build corporate forward plans on the assumption of implementation change.

13.5 Consumers whose own travel requirements are changing, tend to welcome proactive planning, but other travellers tend to resist all change except increasing capacity and frequency on existing routes. However, dynamic implementation of changes, such as the introduction of "ride-at-will" passes, or certain route changes accompanied with apt salesmanship, can induce favourable reaction from most if not all consumers. Yet those who perceive themselves disadvantaged by change will resist vociferously.

13.6 Staid professionals divide into passive and proactive types. Very few have the flair or desire to act aggressively

13.7 Evaluators appreciate almost any planned change because it enables "before and after" studies, the results of which may be transferable to other areas.

13.8 Politicians will tend to appreciate planning, especially if it can be lucidly explained to them, but will be upset by any plan which generates vociferous opposition

14 Patronage

14.1 Patronage is a function of many factors including three layers of demand, which are themselves a function of supply, price, elasticities, alternatives and needs.

14.2 The three principal layers of demand are:-

- apparent demand
- suppressed demand
- latent demand

14.3 Apparent demand includes distorted demand which may appear at a place and time induced by supply rather than place and time at which it originates

14.4 Suppressed demand is a common feature in third world countries where almost every increase in bus supply becomes saturated by increased demand; yet even in developed countries new supply by minibus at high dependable frequency has caused increased ridership deriving from earlier suppressed demand or demand that had been diverted to other modes and was therefore latent. Not only frequency but suitable bus-stop location and spacing and especially hail-stop can convert latent to actual demand. Likewise ease of entry into the bus (and exit from it), for example by open-door platforms on rear-entrance double-deck buses can convert walk-mode travellers into bus-mode travellers.

14.5 The rider, as consumer, is not directly interested in increasing patronage and, in crowded conditions, may in fact oppose it by supporting high step-on (initial or minimum) fares or preemption of short distance passengers. On the other hand, ^{some} may realise that a poorly patronised bus trip or route is likely to be withdrawn to his loss.

14.6 Professionals will desire more patronage to boost their sense of achievement, to improve their performance statistics, and to collect more fare-revenue, so reducing the need for political cash support. But excessive concern for higher patronage and better "bottom line" appearance can lead to overcrowding.

14.7 However tricks of the trade can sometimes be used to increase effective patronage at low resource cost. For example in a distance-graduated fares system, a route can be extended half a mile beyond the fare stage terminus. Given 2-km stages, extra-stage fares from a small number of patrons will cover the extra journey cost, especially when there is spare time in the layover. Yet with competition on the road, this will be difficult because the rivals will be standing at the old "popular" terminal and collecting the whole ridership.

14.8 In another regulatory case, town service incumbents were often protected against inroads into "their" traffic by prohibiting an outer suburban operator from picking up and putting down on the in-town section. Yet if the restriction is removed both operators could gain by sharing the patronage increment induced by closer headways and confidence. But few entrepreneur-operators appreciate this point, just as few intercity railways understand the benefit accruing from a parallel bus service which, though mainly serving a different market segment, nevertheless gives assurance to a train traveller that even if he misses the return train he can still get home. Without the parallel bus he may avoid the journey altogether or travel by car.

14.9 For evaluators, patronage is often taken as passengers or passenger-trips simply because pax-km data is not available. It is essential that city-specific formulae be developed for converting pax into at least statistical pax-km. Normally pax-km is a measure of travel entitlement offered by tickets sold at different values, and not a measure of actual pax-km travelled. This does not matter unduly so long as the distinction is understood and both time-series and cross-sectional analysis are based on consistency. In conditions of open competition neither data nor consistency are readily available.

14.10 The political community's attitude towards patronage is erratic. Local political leaders in developed countries may take pride that "their" operator has increased modal transfer from cars. In developing countries, politicians may be alarmed at ridership increases beyond the financial ability to increase supply, yet they will be reluctant to use fare increases to tame demand.

15 Networks

15.1 Bus networks are the result of criss-crossing, merging, diverging and end-on connecting routes, where the public perceives the network as a whole and the professionals measure effectiveness of the entire system rather than look at each route or each trip in isolation. Bus route networks have grown sometimes by historical accident, sometimes by imposed plans. A network ultimately represents a compromise between density, frequency, walk-on distance, direct fast journeys and the need for interchange (the latter so aptly phrased as 'rupture de charge' in french).

15.2 Professionals would regard the development of a good network as an achievement in providing a service which market research (or intuition) indicates is needed, as well as deploying resources (mainly buses and crews) cost effectively but also revenue effectively. The question then arises whether good networks arise better under free monopoly, regulated monopoly or open competition. The theory of free enterprise suggests that entrepreneurs probing the market in competition will succeed or fail depending on whether they discover and tap the niches of demand. If there is a demand for a given circumferential link, some entrepreneur or others will discover it and profit from its exploitation.

15.3 The problem however, in many developing countries with many individual bus owners, is that a single bus cannot catalyse a niche of latent demand into a visible market. It needs investment in a fleet to provide high intensity service over the link to stimulate the demand, and even then it may take up to 3 months of stimulant before demand fills the break-even load factor. Few entrepreneurs will risk such a large investment in vehicles and gestation losses with an expectation that, if success emerges, a rival will enter the ripened market.

15.4 On the other hand a monopoly, especially one owned by government and charged with providing service rather than offering a money return on investment, can afford to divert buses on to a new route confident that the customer remains with him even if not on the diverted buses.

15.5 It is interesting that a deregulated, privatised competing Britain has bred a rash of brilliant liveries and brandnames, the competitors apparently believing that patrons will Choose (ie wait for buses like they choose soap. Only professionals in monopoly companies seem to appreciate that the two thirds of big city patrons which is casual, irregular, spontaneous does not know what the liveries and brandnames stand for and what they want is a network of services to move them about, always taking the first available bus.

15.6 Commuting (ie regular, daily) passengers are usually interested in a particular route, with network connections to an occasional off-the-track journey. But casual passengers, mostly those visiting big cities for a day or two, want to be assured that there is a cohesive network of services, the details of which they may pick up on the street by asking fellow travellers.

15.7 Evaluators usually disaggregate networks into parts to make micro studies or conversely study a network as a system and ignore how the parts intermesh. There have been few studies of how dismantling of one lace of a network affects all the rest of it.

15.8 Politicians generally want to express problems in the simplest of terms and this rarely interest themselves in network

16 Summation

16.1 This paper covers a wide, disparate, perhaps untidy, incoherent set of ideas across the field of competition and ownership of urban buses. This reflects the need, in this authors view, for tightened thinking from a wider empirical knowledge base on the part of all actors on the stage and in the field.

16.2 The broad position of the interest groups considered will now follow.

16.3 Broadly, consumers may be divided into two groups, namely commuters (those who travel regularly over one or a few routes) and others whose rides are less frequent but more scattered. The first group are cognoscenti about their own route and require reliability, capacity and frequency, in that order. Those who use popular routes will welcome on-street competition if it results in increased peak-time capacity. The other group of casual and spontaneous travellers may find competition disturbing because of the tendency to break up the pattern, which they know vaguely, of connecting and disparate bus services which they expect to use for linked journeys. Consumers as a whole may be indifferent to ownership, except that a portion of them entertain civic loyalty to their city and therefore, ceteris paribus, like to use buses carrying the city's name and coat of arms.

16.4 The fundamental interest of consumers may be different from their expressed views. In a competitive world entrepreneurs are expected to spot and fill niches of consumer need almost by trial and error. This may work for retail goods and many other markets where the smallest scale enterprise may thrive in a niche before enlargement or takeover. But with buses, a single bus doth not a service make, and does not therefore entice a niche of demand. While big monopoly bus firms may fall asleep and not observe the niche, or care to risk entering an observed niche, the equal likelihood is for M.A.P type observation or sometimes just hunch, following which a big company can risk deploying, or redeploying buses enough to provide a high-frequency service in or across the niche. The issue then is how the consumer can, like Braga in Brasilia, nudge the big monopoly into action. Given innovatory (rather than "commercial") management and planning, consumer interest must lie with large urban monopolies as the Swiss and German cities seem to show.

16.5 Professional managers and planners would always like to be regarded as competent. They do not like being cast in the role of faceless bureaucrats deciding what consumers want in the context of a market for bus travel which (according to the casters of the criticism) knows best. But if professional bus managers and planners are to perform well, they should move with comparative freedom under the canopy of consistent transport policies. They need freedom to cohabit with urban planners, other transport modes, traffic managers, hardware suppliers and consumers in order to make informed operating decisions without constraint from unknowledgable regulators, board members, mayors and ministers. They should, however, be subject to criticism and audit by peers in other cities and countries, and be able and required to defend their operation at public hearings.

16.6 If what is important is competent professional management, the issue is under which regime of ownership and/or regulation professionalism will thrive.

16.7 It would appear that the competitive environment will inhibit professionalism and long-term perspective since management will be pre-occupied with watching and outwitting the rival from day to day. Only an unregulated monopoly position ensures the professional's freedom of professional decision, with, as alternative, the "transport federation" of operators as in HVV and many German cities. The professional would wish to have as objective the maximisation of social mobility at least reasonable resource cost, with monetary profit as just one of several performance measures. This would conflict with the basic objectives of private enterprise firms which are to survive, to grow and to produce short-term profits and long-term value-enhancement of net assets. Hence the interest of professionals is best preserved by socially owned integrated transport organisations in which each action is part of a whole system or network.

16.8 Evaluators ought to be neutral as to modes, ownership and degrees of regulation. However professional economists among the evaluators, especially those bred in the english language, tend to a value judgement in favour of "market forces" rather than transport planners to lead the direction of bus services in matters of density, mesh, frequency, bus-size etc. They tend to examine financial data in preference to physical data and to ignore externalities. Evaluators also tend to live at a distance from the real world in which market decisions (passenger decisions) are made. Only transport sociologists appear to probe the perceptions which influence the market.

16.9 The political community generally wishes for a satisfied electorate. Its interest therefore lies with the production system which leads to apparent consumer satisfaction. However the political system is itself part of the broad market place in the sense that consumers acting socially rather than individually express their demand through the voting system. Thus where American voters have, over the last 2 decades, voted for substantial support for investment in and operation of government-owned transit systems, they are acting as a wholesale rather than a retail market and are treating urban transport. (as well as long-distance rail transport) in like manner to defence or street lighting.

This broad social market is not finicky about how economists define "public goods", and therefore votes for public ownership of public transport in USA now, as it did almost universally at the beginning of the century.

This market preference until recently embraced all shades of the political spectrum. On this argument, the political community is an important instrument in the market place and seeks to direct transit supply to what (according to its base of perception and information) the market needs. So the active politician wants to participate in providing an "efficient" service, However the passive politician looks to remove transport from the realm of vociferous media and public complaint.

16.10 I want to close by quoting three eminent bus operators and one operator- historian:-

Ken Blacker, in his jointly written history, London's Buses Vol 2:-

"Inevitably there were some greedy bus owners who, determined to prosper, failed to see the pitfalls of unbridled competition, with the result that potentially profitable roads..... gave less than adequate returns because they were frequently overbussed".

(note that Blacker categorises the road, not the owner, as obtaining poor returns)

Roger Graham, Managing Director of WESTBUS, in a conversation in Sep 87:-

"I would not run a bus service if competitors were let in on my routes".

Trevor Smallwood, Chairman of Badgerline (a big english management-buy-out (MBO) operator which has already absorbed Bristol Omnibus, Western National, Midland Red West and others) at the Sep 88 Bus & Coach Council (BCC) conference as reported in BUSES Nov 88:-

"Much has been learned from the experience of competing in Poole and Salisbury, not least that two large operators could compete 'for a long time and hurt each other whilst still remaining in business'. It had demonstrated that two operators of equal strength competing for the same traffic resulted in diminished profits, increasing losses and confusion and disruption for the passenger".

Southern Vectis, the Isle of Wight operator which has expanded on to the english mainland after privatisation, as reported in BUSES, Sep 88:-

"The decision to retain conductors has also been justified by the need to protect routes from competing operators. So far four have taken on the might of Southern Vectis; one has gone bankrupt, one has pulled out, another has contracted, and in the fourth case each side has abandoned its predatory action, returning to what was essentially the status quo".

Abbeyways, who already had some tendered runs at quiet times on 202 (Huddersfield—Ouzelwell Estate—Dewsbury) have now started daytime competition with Yorkshire Woollen, and on 280 (Dewsbury—Mirfield) Longstaff's old-established share of the service has also come under attack from Abbeyways who are running two minutes in front of them.

Competitive cut-and-thrust has also continued in West Yorkshire. Compass of Wakefield introduced 113 (Wakefield—Lofthouse) from 6 June. They were immediately matched by West Riding boosting the already frequent 110 (Leeds—Kettlethorpe), which covers the route, with Wakefield—Lofthouse shorts five minutes in front of, and five minutes behind.

SUT have also won part of SYT X77 (Sheffield—Doncaster), the East Midland share of X39 (Sheffield—Huddersfield), and it is understood, a sizeable package of routes in West Yorkshire for the Airebus operation. The firm's highest profile operation yet, however, came on 20 June when three Neoplan Skyliners began running on X32 (Sheffield—Leeds via M1) five minutes in front of the traditional joint operators. Stewards are carried in Rapide style, selling drinks and newspapers! The sitting tenants responded with duplicates five minutes in front of SUT 'to make sure we always have room to carry you' as the leaflet put it—thus there are now departures from Sheffield at 25, 30 and 35 minutes past the hour.

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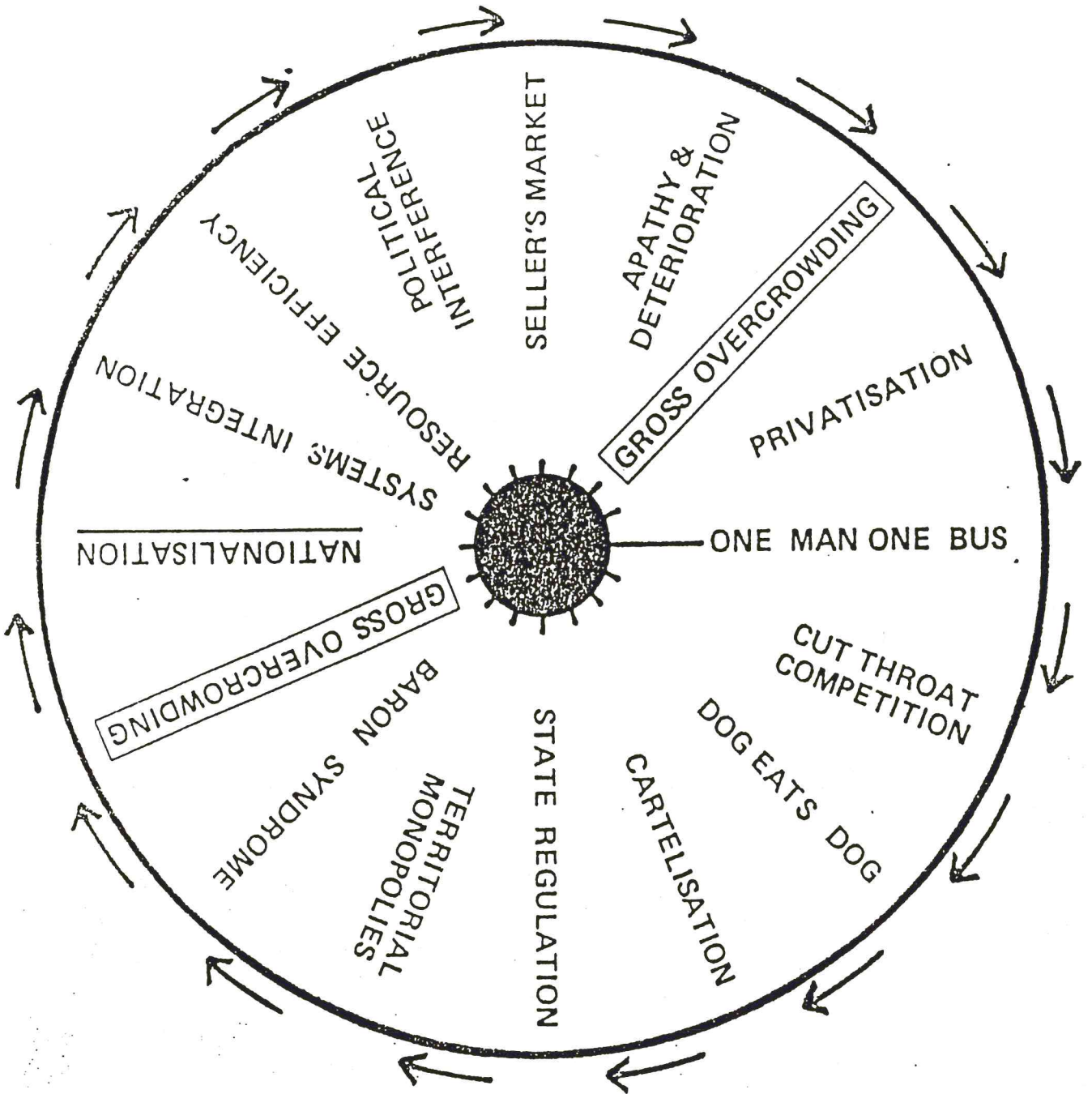
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- White PR. Deregulation of bus and coach services in Britain from 1980. at
Conf "Road Transport Deregulation: Experience, Evaluation, Research"
OECD Paris Nov 88
- White PR. The rural bus industry in Zimbabwe: a case study. in "Dimensions
of Rural Transportation" ed Panduranga Rao. proc ISORUT
Visakhapatnam Sep 88
- Wijesinghe FDC. Our private bus services. CIT/SLAAS Colombo 1987
- Wijesinghe FDC. Deregulation in theory and practice. CIT/SLAAS Colombo
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7. JOURNALS (many or several issues except where stated)

- ABC. Australian Bus and Coach (15 Sep 88 only)
- ATCO News (Dec 86 only, Britain)
- Buses (monthly, Britain)
- BB. Bus Business (one issue only, Britain)
- BE. Buses Extra (quarterly, Britain)
- CMBO. Coachmart & Bus Operator (23 Sep 88 only, Britain)
- Inland Transport (ITF Bulletin 1 1988 only, London)
- OM. The Omnibus Magazine (monthly Britain)
- TA. Transit Australia (monthly)
- TQ. Transportation Quarterly (USA)
- Transport Retort (monthly, Britain)
- TUE. The Urban Edge (monthly USA)
- UTI. Urban Transport International. (Sep/Oct 88 only Britain)

FIG. 1



BUS HISTORY CYCLE

Gillingwater D. The regulation and control of transport. TT 8503 University of Technology Loughborough Aug 85

Gomez-Ibanez JA & Meyer JR. Privatizing and deregulating local public services: lessons from British buses. Jan 89

Habitat (UNCHS). Transportation strategies for human settlement in developing countries. 1984

Jarzab JT, Brazda R et al. Transit service sponsor cost: a public/private case study. 68TRB Jan 89

Morlok EK, Privatizing bus transit: cost savings from competitive contracting. 28TRF 1987

Pickup, Laurie. The effect of the 1985 Transport Act on employees in the bus industry: a discussion of some preliminary findings, UTSG Edinburgh Jan 89

Pullen W T. The effects of bus deregulation on the quality of service in Scotland. at UTSG Edinburgh Jan 89

Shields C. Measuring passengers' attitudes towards bus deregulation: a case study in Newcastle-upon-Tyne city centre, at UTSG Edinburgh Jan 89

Silcock D ed. Private enterprise or public transport? : proc 16 Annual Public Transport Symposium. TORG University of Newcastle upon Tyne. Mar 85 including:-

Powell TJ. The ownership & control of public transport: is privatisation the way ahead?

Kilvington R. Lessons of the 1980 Transport Act

Tyson WJ. Cross-subsidy in bus operation

Hibbs J. No need for competition : a defence of deregulation in the bus industry, with a glance at the case for privatisation

Lester N. This house opposes the abolition of road service licensing throughout Great Britain

Note. The house of 138 mostly academics, operators and local government persons voted to substantially defeat the motion that Lester opposed.

Teal RF et al. Urban transportation deregulation in Arizona. DOT-I-86-22 USDOT Apr 84

TRRL

Carter MA et al. Bus services in the metropolitan areas	TP 18	1986
Perett AK et al. Some early effects of the 1985 Transport Act in Strathclyde	TP 40	1987
Pickett MW & Tibke D. Some early effects of the 1985 Transport Act in Greater Manchester	TP 52	1988
Headicar PG & Walmsley DA. The effects of the 1985 Transport Act in West Yorkshire	TP 53	1988

