

MINIBUS-TAXI ROUTE COLOUR CODING: A FRIENDLY, BUT AN OFFICIAL WAY TO COMMUNICATE MINIBUS-TAXI TRIP INFORMATION ACROSS BORDERS

SIAS OOSTHUIZEN

Director, Siyazi Transportation & Services (Pty) Ltd, P O Box 71333, Willows. 0041

1. INTRODUCTION

The minibus-taxi industry is part of the public transport system in the Republic of South Africa. It is operated by minibus-type vehicles with a carrying capacity of 10 to 14 passengers. The service is conducted on a shared basis where each passenger is responsible for his or her own fare. It usually works on an origin-destination basis, which is quick and relatively fast compared to conventional buses.

The aim of this paper is to identify the issues that cross-border passengers may encounter when they arrive in South Africa and need to travel to destinations in, for example, the suburbs or townships of cities in Gauteng. The cross-border agency has already developed a system of distinguishing marks for the cross-border taxis and buses, which will identify the taxis travelling to the different countries. This paper highlights the need for co-ordination between the system designed for local and inter-provincial taxis in South Africa and the proposed system for cross-border operations.

Prospective passengers and drivers have generally used hand signals to communicate route and destination information. Passengers who grew up in the area know these signals well, but visitors seldom know them, making it difficult for visitors to use the minibus-taxi services. The new colour-coding system is aimed at improving the flow and accessibility of information to passengers, especially to visitors and tourists. The minibus-taxi market is fairly saturated and new markets need to be explored in an effort to balance the demand for and supply of minibus-taxi services. One such potential market is the tourism industry, which attracts many visitors to the country each year, and another is the commuters in the higher income groups who traditionally use private cars.

2. ELEMENTS OF THE REGULATORY SYSTEM

The regulatory system for South African operations differs from the system applicable to cross-border operations. The main difference is the way in which applications for permission to operate are handled. In the case of the South African operations, the Operating Licensing Board issues the operating licences but in the case of the cross-border operations, the authority to operate is issued by the Southern African Cross-border Road Transport Agency.

The permission system has recently been changed, on the basis of the recommendations made by the National Taxi Task Team (NTTT), which emanated from a joint investigation by the South African Department of Transport and the taxi industry in South Africa into addressing the problems experienced in the taxi industry. The main change regarding the minibus-taxi industry was the conversion of radius-type permits into route-type permits.

The route-type permits allow operators to provide services only along a certain route between two points or areas. In special circumstances, operators may be allowed to operate on a network of minor routes.

The broader regulatory system consists of four main elements, namely:

- a) **The Operating Licensing Board / Cross-border Road Transport Agency**
The Operating Licensing Board (OLB) and the Cross-border Road Transport Agency (CBRTA) are both autonomous bodies and are responsible for issuing the permits allowing operators to provide a service along a specific route. In the case of cross-border operators, they are registered as professional operators at the CBRTA.
- b) **The Taxi Registrar**
The Taxi Registrar bears the responsibility for helping to transform the taxi industry into a professionally run industry whose members are registered and adhere to a constitution and code of conduct. The Taxi Registrar acts autonomously and reports to the Member of the Executive Council (MEC) of the Provincial Legislature.
- c) **Law enforcement agencies**
After the OLB and the CBRTA have issued a permission to operate and the Registrar has registered the minibus-taxi association and its members, the law enforcement agencies ensure that these road users comply with relevant legislation.

Maintaining the regulatory system requires co-ordination among the different elements of the system and reliable, up-to-date and readily available information about this mode of transport and its routes.

- d) **Transport Planners**
All public transport operations, including minibus-taxi services, should conform to the transport plans prepared by transport authorities. These transport plans will involve all transport modes on all routes and are based, among other things, on managing the supply of and demand for transport. However, at present there is little co-ordination among cross-border transport providers and the planners of such services who are employed by the local authority.

3. OBJECTIVES OF THE TAXI ROUTE COLOUR-CODING SYSTEM

The current method of communication between a prospective passenger and a minibus-taxi driver in South Africa is by means of hand signals. When hand signals were first used, taxis provided services along a limited number of routes and the hand signals were clear and simple to understand. Lately, the services provided by taxis in a greater network of routes in a specific area have made it difficult to develop clear and understandable signals. It has become virtually impossible to have hand signals that can communicate clearly with visitors from other areas or with tourists from other countries. Route colour-coding is in essence a way to provide information to passengers, informing them that a particular taxi is legal and provides a service between a specific origin and destination on a specific route or route network.

Many tourists and visitors from other areas of the country and abroad visit the city and need transport, but have difficulty in understanding the routes or finding out which particular taxis operate to which destinations or, in fact, in actually identifying a taxi among the myriad of minibus-taxis, many of them privately owned. The City of Tshwane Metropolitan Council (CTMC) intends to publicise the route colour-coding information in co-operation with the local tourism board in due course.

Although route colour-coding is not intended for law enforcement, it could make law enforcement easier because it would be clear to everyone if a particular minibus-taxi did not have an official sticker or was operating on the wrong route. It is the permit disk that contains the information necessary to determine what the authorised route for a specific minibus-taxi is, and not the colour-coding sticker that forms the basis of the law enforcement action. As a matter of fact, colour coding can only be implemented on permit-holding taxis.

4. DESCRIPTION OF THE ROUTE COLOUR-CODING SYSTEM

The system consists of two main elements. The first is the information that is visible on the vehicles and is targeted at the passenger, who is the customer of the taxi industry. The second element is the information required for controlling purposes and which appears on the permit disc. The information on the permit disc is accessible by means of electronic devices, such as a scanner. This second phase will be completed once the whole CTMC area has been fully covered for route colour-coding purposes and the effectiveness of the system has been reviewed.

4.1 Route colour-coding stickers

4.1.1 The local route colour-coding system

The requirements for the route colour-coding are that it should be easy to understand but still contain all the information that the passengers, other operators and law enforcers need to see at a glance to determine the road or route on which a vehicle is permitted to operate.

In considering various alternatives, it is important to keep in mind the cost, the effectiveness of the identification displayed on the vehicles and the possibility of fraud or interference with this information.

The concept of route colour-coding consists of a system of colours which represent different areas in the operational area of the minibus-taxis. Each of the areas is allocated its own colour. If a route starts in a specific area that area's colour represents the origin of the route whereas the colour of the area where the route ends represents the destination of the route.

There are two types of stickers, those on the front and back of the vehicle and those on the sides of the vehicle.

The types of taxi operation and route largely determine the format of the stickers.

There are different types of taxi operation, namely:

- a) Local routes
 - i) Simple local routes, between an origin and a destination in the same jurisdiction of a local authority;
 - ii) A more complicated network-type of local routes, where minibus-taxis are rotated between more profitable and less profitable subroutes within the same corridor, which run between an origin and a destination.
- b) Long-distance routes
 - i) Routes over longer distances, between points within different regions in the same province (inter-regional) or between points in different provinces (inter-provincial);
 - ii) A network of long-distance routes, where long-distance taxis are rotated between more than one long-distance route.
- c) Special services

Special services are an integral part of minibus-taxi services. Special services involve prior arrangements for a service from a particular place to another, usually at weekends and over long holidays. The usual route colour-coded taxis undertaking such special trips will carry a special identifying feature so as not to disrupt other operations on the routes.

4.1.1.1 Simple local taxi routes

Local routes are those routes that operate between two single points along one route within the same local authority area, for example between Mamelodi and Wonderboom or the CBD in the CTMC area.

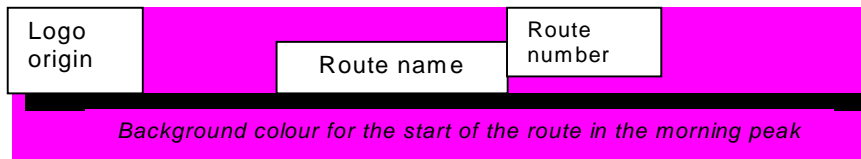
The main elements of the route colour-coding system as displayed in Figure 1, are the origin and the destination of the routes. The background of the sticker displays the origin or A-point of the route as contained in the permission issued by the Operating Licensing Board, while the B-point or destination is represented by the colour of the line.

The front sticker allows prospective passengers alongside the road to select the correct minibus-taxi as the vehicle approaches them. These front and rear stickers as displayed in Figure 1 consist of two parts, namely the first sticker on the left represents the colour of the area of origin while the second colour on the right represents the area where the route ends. The stickers on the side of the vehicle provide more details and confirm that the minibus-taxi is in fact going to the destination that the passenger wants to reach.

The choice of colours used is left to the local authority concerned. However, we appeal to other areas of South Africa to choose black for the Central Business District (CBD) of the city/town and red for local to help to standardise the information.

FIGURE 1: BASIC ELEMENTS OF ROUTE COLOUR-CODING STICKERS

a) Side Stickers



b) Front and rear stickers



4.1.1.2 Network type of operations

There are two types of networks for which stickers were designed in the CTMC area.

a) Network type A: A network formed by different routes

The first pilot project on network-type operations was conducted in the eastern suburbs of Pretoria (Menlyn routes) where the minibus-taxi operators work on a network basis. The routes that form the network consist of lucrative and less lucrative routes. The operators decided that the best mechanism to give everyone a fair deal would be to implement a rotation system where the passengers determined the route that the taxi would follow. The first passenger arriving in the queue would determine the destination of the taxi. So the taxis would switch between the routes according to the choice of the first passenger in the queue. However, this greatly complicated the route colour-coding system because the route on which the specific taxi was operating had to be indicated to the passengers who wanted to board the taxis at the loading points in the ranks and along the way. To solve this problem, the driver would display on the windscreen the number allocated to the chosen route.

b) Network-type B: A network formed by deviations along the route between the same origin and destination

This type of network includes the deviations along a route between the same origin and destination. A good example is the route network between the township of Mamelodi and the CBD of Pretoria, where passengers may choose to go between four alternatives, namely

- via the suburb of Gezina; or
- via Soutpansberg Road; or
- via Church Street and Silverton; or
- via the N4 Freeway.

4.1.2 Inter-regional/metropolitan and Inter-provincial routes

The basic elements of the long-distance sticker are shown in Figure 2 and consist of the following:

- a) Colour representing the town where the route begins
- b) Colour representing the zone where the rank is situated in the town where the route starts

- c) Logo of the local authority in whose area the route begins
- d) Logo of the local authority in whose area the route ends
- e) Registered route number
- f) Sign indicating that this is a long-distance route
- g) Destination where the route ends
- h) If a network has more than one route, the destinations of the rest of the routes.

FIGURE 2: ELEMENTS OF THE INTER-REGIONAL AND INTER-PROVINCIAL STICKER

a) Colour for the town where the trip starts	c) Logo where trip starts	d) Logo where trip ends	g) Destination where the route ends
	e) Registered route number		
b) Colour for the zone in the town or region where the rank is situated	f) I nter P rovincial		h) If there are more destinations as part of the network

4.1.2.1 Single route

Long-distance operations usually start at a point (e.g. the rank) where the minibus-taxi operators provide a transport service to one destination. The most common usage in this regard is where the service is provided between an origin in one region/metropolitan area or province and a destination in another region/metropolitan area or province. It is therefore a single route between one point and another point.

4.1.2.2 Network-type of long-distance routes

In cases where there is not enough patronage on a route to make it profitable, the operator applies to the Registrar for permission to operate a second route. In many cases the two less lucrative routes jointly comprise a lucrative business for an operator. At the same time the operator provides a service along the less busy route, which in terms of bus transport would have had to be a subsidised route. The case at present is that the associations control and in a way co-ordinate the provision of services along certain routes that the association finds are lucrative as well as along less lucrative long-distance routes. All the operators have permits to operate a group of routes, which could be called a network of long-distance routes. The queue marshal (rank manager) allocates the route in such a manner that every operator is given an opportunity to operate all the routes, lucrative as well as less lucrative. This type of arrangement ensures that all routes are serviced and that violence is avoided.

4.2 Permit disc bar-coded system

In addition to the route colour-coding that will be visible on the outside of the vehicle, the project also includes control measures for accessing minibus-taxi data by means of electronic devices.

4.2.1 Description of the bar-coded system

After consultation with the electronics industry to determine what technology was available and whether the coding system could also be used for control purposes, the following possibilities were identified.

There are not very many or varied affordable electronic options available. However, what is available ranges from quite basic and fairly expensive to highly sophisticated and extremely expensive. Microchips and two-dimensional (2D) bar codes are also available off the shelf, but the problem with this option is that the information on these chips is fixed and the buyer cannot change the information. This means that the code would have to be used as an identity number representing a taxi with certain particulars.

4.2.2 Elements of the electronic control system

The development of the electronic control system would consist of three main steps:

The first step would be to decide on and put together the unique information needed for controlling purposes. The second step would be to establish and maintain a database to support the electronic system. The third would be to capture on the microchip or 2D bar code the unique information about each of the vehicles and to have access to the information on the microchip or 2D bar code to enable the controllers to identify the vehicle, owner, driver and route.

The electronic system has been put into effect as part of a pilot in the Eastern Region of the North West Province because this can only be done after the special legalisation process and establishment of the database of the Operating Licensing Board have been done.

5. CO-ORDINATION BETWEEN LOCAL AND CROSS BORDER OPERATIONS

In many cases the passengers who arrive by cross boarder transport e.g. minibus-taxi or conventional bus goes to destinations in the major centres like Johannesburg. There are however a large number of people who have destinations in smaller centres and who have to make use of other means of transport than cross border modes. It is therefore important for co-ordination between the arrival and departure of cross border transport and local transport in South Africa and any other country in the region. The co-ordination needs to be catered for in at least two ways, namely:

- a) That transport infrastructure be design and developed that it is convenient for passengers, who in most cases carry a lot of luggage, to be able to transfer from cross border to local transport;
- b) That the information that is necessary for cross border passengers to choose the correct local transport mode is in fact available and co-ordinated in such a manner that they are able to get on the correct local transport services.

The role of colour coding in the co-ordination of services consists of the following:

- a) The colour coding system is in essence an information system to the passengers and for that reason it could be the vehicle through which to inform cross border passengers about the local services to specific destinations;

b) To display the colour coding information at well planned and co-ordinated modal transfer stations could assist the cross border passenger to make an efficient transfer to the correct service. It is important to remember that in many cases visitors to South Africa receive information to take for example such and such a minibus-taxi to reach a certain destination. It could be much easier for the visitor to identify the correct minibus-taxi if the colour code is given to the visitor. Colour coding of cross border taxis could serve the same goal in that if people from South Africa want to leave for a destination in one of the countries in the region colour coding could assist them in finding the correct cross border taxi.

6. CONCLUSIONS

The following conclusions can be drawn:

- a) The enthusiastic response from the taxi industry and its passengers showed that the minibus-taxi industry and its passengers are ready for and accept the route colour-coding system;
- b) It is now also time to integrate the information and infrastructure about local services with the cross border services to make it easy for visitors and tourists to reach any destination in South Africa from any place in the neighboring countries and *vice versa*;
- c) It can now be stated without hesitation that although the minibus-taxi industry has willingly accepted the route colour-coding system, the long-term success of the route colour-coding system can only be sustained if it is supported by strict law enforcement;
- d) Although the route colour-coding system is aimed at informing the passenger about the route along which the particular taxi operates, the system should be regarded as being closely linked to the provincial permit system.
- e) However, route colour coding ought not to be used primarily for law enforcement or in isolation.

7. REFERENCE

The Development and Implementation of a Taxi Route Colour-Coding System for CTMC Area: Mamelodi, Eersterust, Centurion and Long Distance Pilot. Greater Pretoria Metropolitan Council, Metropolitan Public Passenger Transport Division. July 1999.

MINIBUS-TAXI ROUTE COLOUR CODING: A FRIENDLY, BUT AN OFFICIAL WAY TO COMMUNICATE MINIBUS-TAXI TRIP INFORMATION ACROSS BORDERS

SIAS OOSTHUIZEN

Director, Siyazi Transportation & Services (Pty) Ltd, PO Box 71333, Willows. 0041

Sias Oosthuizen

Sias is a **public transport specialist** with a M Eng (Transportation) and is especially well-known for his success in the development of liaison structures between the authorities and the taxi and bus industries. He has an effective way of working with the industry at all levels, particularly at grassroots level. Other fields of his experience include the development of passenger transport plans and strategies, the determining of the need for infrastructure, conceptual planning and design of public transport facilities. The East Rand and several other parts of South Africa have many examples of his expertise and input. Of late he has become involved in projects to stimulate and create jobs at grassroots level through the establishment of trading co-operatives. He was part of the team who developed, design and implemented the colour coding system in the City of Tshwane and the North West Province.