

MOTORCYCLE TRAILER-AMBULANCE

IMPROVED ACCESS TO HEALTH SERVICES

Poor access to health facilities is one of the main concerns of rural communities. Journeys to health centres and hospitals are generally long, taking many hours. Transport of those too sick to walk is often so difficult that trips are delayed to the last minute, causing unnecessary suffering and loss of life.



A study has shown that a motorcycle trailer has good potential as a low-cost ambulance to improve access to health services. It requires a relatively low investment, involves an appropriate level of technology and has low running costs.

6 months of field trials in Mtwara, Southern Tanzania, have confirmed this potential, showing the trailer can provide an effective, low-cost ambulance service.

The trailer has sprung suspension to provide a more comfortable ride for patient and passengers and an automatic braking system which improves control and safety.

The trailer is fitted with a removable stretcher and can also carry 2 carers to look after the patient. With the stretcher removed, the trailer can carry up to 6 passengers.

The trailer can also be readily adapted for a range of load-carrying activities, such as garbage collection and a tanker for transporting water, kerosene or diesel.

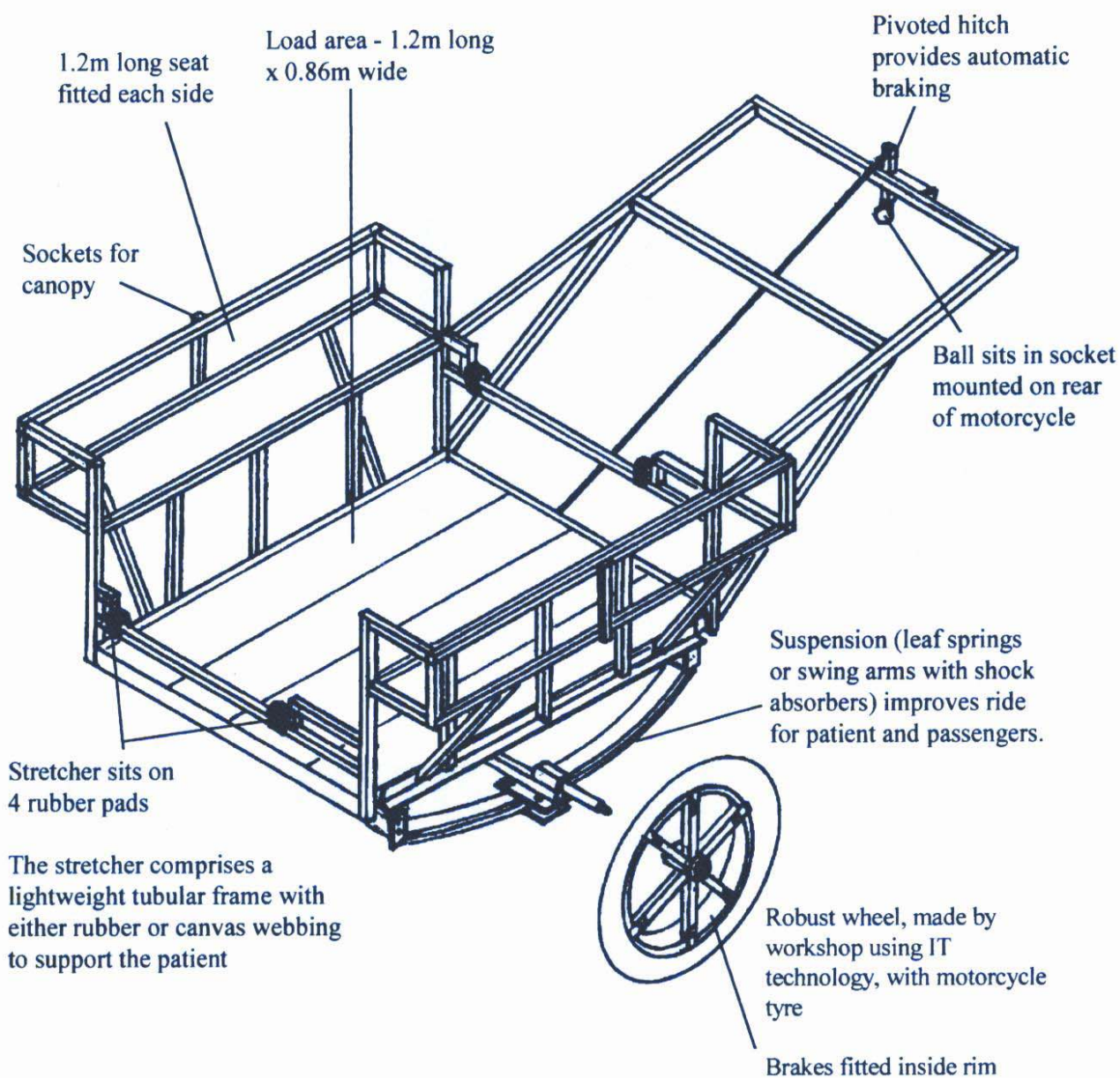


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for Rural Development

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MAIN FEATURES OF TRAILER-AMBULANCE DESIGN



Construction: manufactured locally using commonly available materials and components. Can be made in about 15 work-days by a competent workshop.

Cost: depends on local availability and cost of materials and components. Indicative costs for materials (including consumables) based on Mtwara prices are:
Trailer \$330; stretcher \$20; canopy \$60



OPERATION

The trailer-ambulance has been located at a village health-centre and operated mainly between the village and Mtwara town, a distance of 48 km. A trip takes just over 2 hours. 8,600 km have been completed over a 6 month period.

The motorcycle, a Honda CT110, pulls up to 6 people on flat to rolling terrain but struggles on the longer hills. A minimum 125cc motorcycle is needed. The only modifications needed to the motorcycle are to change the rear sprocket to the largest available for more pulling capacity and to bolt a hitch socket onto the rear carrier or frame.

Control of the motorcycle and trailer is not difficult and can be picked up by an average rider in a few days. Because of the long route an assistant has been used to help out with problems such as punctures and sand or mud patches.

The running costs (fuel, repairs and operators) have been monitored as \$0.10 per km. Fixed costs (depreciation, insurance and tax) are estimated as \$0.06 per km.

ACTIVITIES

Although the primary function of the trailer has been as an ambulance, it has also been used to provide general transport services for passengers and goods to help to subsidise the cost of the ambulance service.

The illustrations show some of these activities. The bottom left shows a trailer purchased by a local trader waiting at the airport to pick up goods.



'TRAILER'

Trailer's mother contracted cholera 2 days before delivery. The health-centre could not cope and she was rushed by the trailer-ambulance to the Mtwara hospital. This undoubtedly saved the lives of both mother and baby. The parents were so grateful they named their little girl 'Trailer'

The trailer-ambulance is generally used for life-threatening cases, often complicated pregnancies, and a number of lives have been saved. Its impact could have been much greater but referred patients sometimes choose not to go to the hospital because of the difficult conditions there.

FINDINGS

- *The trailer provides an effective, low-cost ambulance service. An investment of around \$5,000 for motorcycle and trailer could greatly improve access to health services and have a substantial impact on reducing unnecessary suffering and loss of life*
- The capacity to carry 2 carers in addition to the patient is a considerable asset
- The ambulance service needs to be subsidised. The operating cost with a new motorcycle is about \$0.16 per km
- The subsidy can be provided by using the trailer for general transport services for passengers and goods when it is not needed as an ambulance
- Break-even fares for average payloads of 4 passengers or 300kg load are \$0.04/passenger/km and \$0.52/tonne.km
- The operation of the service should comply with local traffic regulations



Further information on the ambulance-trailer can be obtained from:

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