

On the Road to Safe School Transport in China

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Recent accidents have brought attention in China to the issue of school transport safety. Experience in other countries illustrates that safe school transport, and more specifically school bus transport, requires three key elements: proper school bus design and maintenance, sound driver qualifications and continual training, as well as a regulatory framework to ensure objectives of safe school transport are met. In addition, a unified institutional framework—with clearly defined responsibilities at the national, provincial, and local levels—needs to be in place. Finally, dedicated financing is necessary to ensure a reliable, sustainable, and safe system for school children.

This note reviews the practice in countries with established school transport systems, takes a look at the current state of school transport safety in China, and recommends specific actions for China to improve its school transport services and systems. Specifically, this note argues China's school transport could be improved through changes to the institutional framework, the strengthening and enforcement of the legal and regulatory framework, as well as enhanced communications and awareness. By adopting a national plan with clear targets and milestones, safer school transport could become a reality for China's primary and middle school-aged children who travel to school on a daily basis.

SCHOOL TRANSPORT SAFETY—A MATTER OF NATIONAL IMPORTANCE

The need for the safe transport of children to and from school is self-evident. Some countries, such as the United Kingdom, consider home-to-school transport a responsibility of the primary and secondary education system. In the United States, educators view school transport as the gateway to education and a socio-economic equalizer. In these cases, as well as in many other countries, strong government leadership is a key element to ensuring safe, efficient, and fiscally sustainable school transport.

In most developed countries, the school bus is the preferred mode of school transport. Buses are economical, flexible in route and number of stops, comparatively safe, and—over time—have become institutionalized in terms of system administration, bus operation, and driver training. In addition, a standardized national school bus system with a fixed appearance and operational procedures can result in an enhanced level of caution and

awareness around the transport of children to school.

This note explores some of the key aspects to safe school transport from other countries and provides recommendations to improve the transportation of students in China.

KEY ASPECTS OF SAFE SCHOOL TRANSPORT—EXAMPLES FROM OTHER COUNTRIES

Countries like the United States, Canada, and New Zealand have many years of experience providing school transport services. In the United States, school buses have transported children to and from school for approximately 100 years. Each day in the United States, 25 million children board a school bus, using one of nearly 480,000 school buses currently in operation. A comparison of the number of fatalities of school-aged children during normal school transportation hours by the U.S. National Highway Traffic Safety Administration (NHTSA) estimates that school buses are 87 times safer than private cars.

What then makes a school bus system safe? Industry experts agree that safe school transport depends on the design and maintenance of the buses, bus driver qualifications, and a regulatory framework that ensures safe traffic behavior. In addition, institutional arrangements and appropriate financing need to be in place to ensure a successful and safe system.

School Bus Design, Construction, and Maintenance

Safe school buses may vary in size and type, but all provide both exterior and interior safety features. On the inside, buses need to provide a seat with a seat belt for each student. North American school bus requirements, for example, specify the minimum height of the back of the seat and determine allowable noise and air quality levels.

On the outside, a standard design and color—the trademark “National School Bus Yellow Paint” used in the United States and Canada is a good example—combined with flashing lights, a “stop signal arm,” and the words “School Bus,” can ensure buses are easily recognized and respected by other traffic. In addition, a school bus is required to protect occupants from rollovers and side impacts. As a result of extensive research and testing, school buses in the United States and Canada are designed to withstand impacts equal to or greater than the weight of the bus itself. In the United States, at least nine Federal Motor Vehicle Safety Standards regulate the “crashworthiness” (the ability to withstand impact) of school buses. The fuel system should be designed to reduce the likelihood of spillages and fires. Further, buses should be designed to accommodate disabled passengers.

Ongoing safety is ensured through proper maintenance. In the United States and Canada, service operators, supported by the bus manufacturers, use a systematic maintenance program of daily pre- and post-trip inspections by the driver and an annual full inspections of

the vehicle. Any mechanical issues are promptly reported to maintenance personnel.

Driver Qualifications and Training

The appropriate selection, preparation, and on-going training of bus drivers is essential. Following recommendations from the United States’ National Congress on School Transportation, drivers should be selected and be allowed to continue employment based on written applications, personal interviews, pre-employment and driving-record verifications, drug and alcohol screenings, criminal background checks, physical exams, performance testing, and annual employee evaluations.

In addition, potential school bus drivers should—before transporting students—complete a pre-service training and testing program that includes classroom and on-the-road training, as well as successfully pass both written and driving performance tests that demonstrate adequate knowledge of policies, traffic laws, and driving skills.

Once on the job, ongoing training can ensure drivers maintain their skills and are aware of new policies and procedures. In Portugal, for example, drivers receive training focused on the pedagogical, legal, and operational aspects of school transport. Germany uses a computer-based training program covering topics such as the detrimental impacts of driving (such as driver fatigue), the need to balance resting and driving times, and how to handle special situations. In the United States, the NHTSA has developed a comprehensive program for periodic training and testing.

Regulatory Framework

Many countries establish a regulatory framework to govern bus design, driver qualifications, and motorist behavior around schools and school busses.

Regulations in Australia, Belgium and Germany require school buses to use warning signals to

alert traffic when a school bus is about to load or offload school children and traffic must reduce speeds. New Zealand has set a maximum speed limit of 20km/h around school buses, and in Japan and the United Kingdom vehicles are required to drive slowly when passing a school bus. In the United States and Canada, motorists from both directions are required by law to stop and wait while school children enter or exit a school bus.

Additional regulations might apply to the school zone, the immediate area around the school. In many countries, motorists are required to reduce speeds in school zones during school hours when children may be getting on or off buses, walking to class, or playing near the school.

Vigorous enforcement of regulations is essential. In the United States, local, state, and school officials work with law enforcement entities to enforce traffic safety laws around buses, bus routes, and in school zones.

Institutional Framework

Countries have established institutional frameworks for governing school transport that reflect the size of the country and the government model under which they operate.

A centralized national level institutional framework is used in New Zealand for setting vehicle standards and licensing and monitoring service operators. A special Vehicle Certification Unit of the New Zealand Transport Agency organizes vehicle inspections and certification, which are carried out and enforced by a special unit for Vehicle Inspection Services in cooperation with the New Zealand police. The police also actively educate school children about passenger safety and bus behavior as well as enforce vehicle and driving requirements. A national association, the Bus and Coach Association of New Zealand, Inc., represents service providers in discussions with the Ministry of Education and updates its members on new regulations.

In the United States, a decentralized institutional framework is in place. While the Federal Government provides the main policy guidance on bus standards and driver regulations, individual states are allowed to refine or exceed the national standards, taking into account local geography, politics, and cost implications. Within the states, school districts administer the services—hiring drivers, planning routes, as well as organizing driver training and vehicle maintenance, or outsourcing the required services to a private operator. If services exceed state or national standards, the local school district finances the difference. Industry advocacy groups and other stakeholders further support and contribute to the school bus system.

School Bus Financing and Operational Models

The costs for school transport services, which can include the costs for purchasing or renting the buses, maintenance, training, and drivers' salaries can be a significant part of school budgets. In many developed countries, school bus transport is financed by local or national governments or a combination of the two.

In Japan, local governments pay for school transport out of their local education budgets, although the National budget can contribute up to 50 percent of transport service costs for schools located in remote areas. The local governments can use one of two operational models. In one, the local governments directly purchase the school buses and hire the bus drivers. In the other, services are outsourced to transport companies. In either model, however, a local education committee is responsible for the administration and supervision of the bus drivers and transport companies.

In the United Kingdom, the cost of school transport is approximately 1 billion pounds sterling (US\$ 1.6 billion) per year and is financed by both the local and the national government. In Australia, the government subsidizes the cost of transport if provided by some entity other than the school. Students in suburban and rural

areas typically use public buses and trains or special buses provided by private bus companies. Inner-city students travel on a government-owned route service bus, a public route bus, or a "school special" service. Some private schools have their own buses when a private company is not available to provide the service.

While some state-level support may be available, United States' school districts are responsible for not only administering the services but also financing school transport services.

CHINA'S SCHOOL TRANSPORT SYSTEM

The provision of school transport by schools in China has a shorter history than many other countries; it began about fifteen years ago when the first private schools offered school bus services in the 1990s. Today, more than 2 million school buses transport many of the 150 million primary and middle school students in China to and from school, however, of these only 285,000 school buses are officially registered. Out of those registered school buses, only a small portion meet safety standards.

While school transport related accident statistics are not readily available for China, recent accidents reported in the media suggest a poor safety record for school transport. In the last few weeks of 2011, for example, 41 school children died in school transport accidents, including a school bus that collided with a coal truck in Gansu. The nine-seat van was carrying 64 students, 19 of which died. Shortly after, 15 children in Jiangsu province died when their school bus veered off a road into an irrigation ditch. In a third accident, two primary school students in Yunnan died and another 20 were injured after their horse-drawn wagon collided with a truck. Three days later, also in Yunnan, five junior high school students were killed when their overloaded van—acting as a school bus—plunged off a mountain road.

A 2010 national standard on "School Bus Safety and Technical Conditions," provides a degree of regulation but—because of high implementation and enforcement costs—compliance with the standard has been limited. Immediately following the incident in Gansu, China issued a draft "Regulations of School Bus Safety" for consultation. The new regulations build on the previous standard and are a first step in improving school transport safety by addressing school bus management and financial assistance to rural areas, presenting improved standards for school bus quality, clarifying institutional responsibilities, and giving school buses priority in traffic.

The new regulation focuses on school transport service in rural areas and the development of public transportation in urban areas. School transport services in rural areas is to be supported by financial assistance from the central and local government, tax preferences, and donations. Local governments carry the main responsibility for school transport safety, with local police departments being tasked with vehicle inspections, driver registration, and preventing the use of illegal buses. Several agencies (the transport department, industry and information department, State administration for work safety, and administration of quality supervision) are to supervise and assist the local government and police department. Finally, schools are responsible for daily operation. The regulation also states that school buses, when carrying students, have priority over other vehicles and are allowed to use the public bus lane. Similar to regulations in other countries, vehicles behind the bus must wait when a school bus stops and students get off. Further, the new legislation requires drivers to have a minimum of three years of driving experience and be under the age of 60.

While the new regulation is a good step forward and indicates the Governments' determination to improve school transport, more opportunities exist to build on the experiences

of other countries. Specifically, China's school transport system currently lacks some important elements such as: a clear institutional framework with a lead agency and well-described stakeholder responsibilities; a spectrum of technical standards for school bus models to meet various demands; a feasible financing mechanism and maintenance strategy to ensure sustainability; as well as detailed requirements for driver qualifications and training.

WHAT'S NEXT? RECOMMENDATIONS FOR IMPROVING SCHOOL TRANSPORT IN CHINA

Building on the recent new regulations and in line with international experience, there are specific steps China can take to improve its school transport system.

1. **Modify the institutional framework for school transport**— A unified approach at the national level administered by one lead agency (for example, the Ministry of Education) and supported by various transport technical, regulatory, and law enforcement agencies, could strengthen guidance and improve standard setting and implementation. An improved framework would assign clear responsibilities to stakeholders at the provincial, municipal, and school district levels. Dedicated funding sources would be necessary to finance the operation and maintenance of a national school bus system. Financing options that could be explored include national level financing or school district subsidies by national or provincial governments. At the school district or local government level, more effective financial management schemes such as managed outsourcing to the private sector, leasing from school bus distributors or purchasing and managing their own school bus fleet could be sought. Finally, innovative fleet management practices, such as leasing school buses to others during off peak hours or during school holidays (on the condition of upholding certain service standards and all maintenance requirements), could also contribute to the fiscal sustainability of school bus operations in rural areas.
2. **Regulate bus design and operation**—New regulations could specify a minimum set of requirements (for instance recognizable colors, audio and visual alert systems, impact and rollover protection, and standard safety belts) that must be met by all school bus manufacturers and maintained by operators. An additional set of guidelines could help service providers enhance school bus transport safety beyond the basic standards. Within the minimum set of standards, certain flexibility should be built in to allow for different school bus types and sizes to accommodate the various road dimensions, terrains, and capacity demands of rural China and urban neighborhoods. Registration, regular inspection, and maintenance as recommended by manufacturers could be part of the new regulatory framework. Regulations for the drivers could also set a matrix of basic and preferred qualifications that provide the right balance of enforcement and flexibility, pre- and in-service training that corresponds to existing experience, as well as a monitoring and evaluation framework.
3. **Develop a national plan for school transport safety**— Progress can be ensured by setting target milestones for when new laws and regulations will be ratified and become operational as well as when the Chinese school bus, in compliance with new national standards, will be in service. The plan could also identify targets for the reduction in the number of school bus accidents and fatalities and specify how progress is monitored and evaluated. Demonstration projects on high risk corridors can help test practices for replication elsewhere.
4. **Actively enforce safety**— Through the local police, establish systematic neighborhood traffic management around schools

including traffic calming measures, speed reduction requirements, as well as traffic lights and warning signs. Once a system is in place, educate and hold accountable law enforcement entities such as the traffic police and others on the need to rigorously enforce relevant laws and regulations, including inspection of school bus and driver certifications. Laws could be ratified to make it illegal to pass (or to fail to yield to) a school bus that is stopped or about to stop to load or unload passengers. Speed limits within a school zone should be reduced for all motor vehicles during normal school operating hours.

5. **Launch a national school transport safety campaign**— Alongside legislative and administrative efforts, encourage media and stakeholder groups to launch and support campaigns for school transport safety to raise awareness on new national regulations and standards, vehicle requirements, driver qualifications, and traffic rules for school zones.

Through a national effort aligned with the government strategies of “Education Priority” and “People Orientation”, combined with heightened awareness and enforcement, there is no doubt China will make a new breakthrough in school transport safety. What is clear to all is that now is the time to act.

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This note is part of the China Transport Note Series to share experience about the transformation of the Chinese transport sector. For comments, please contact Fei Deng (fdeng@worldbank.org) from the Washington, DC World Bank Office.

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