

## **HQ (P) HIRAK: ROAD SAFETY TRAINING - WAY AHEAD**

### **Introduction**

1. Road Safety Training is a welcome step in ensuring safety of BRO personnel who work in extreme challenging conditions and is designed to guide BRO to improve road safety in a sustainable and coordinated manner. It is expected that this system-wide strategy will stimulate interest and investment in road safety programmes and help us build strong partnerships as we move forward in promoting and implementing Road Safety Training in all Projects.

### **2. Requirement of Road Safety Training.**

(a) The need for Road Safety is clear. Road crashes have been a leading cause of death and serious injury to BRO personnel.

(b) BRO personnel are so accustomed to automobile transportation as a way of life that most of us are desensitized to its hazards. Vehicle/ Equipment weighing thousands of kilograms, are driven at high speeds, while navigating extreme terrain and busy roads, changing road conditions, weather hazards, and more and many people try to do all this while simultaneously texting, distracted by passengers, fatigued, under the influence of drugs or alcohol—  
or all of the above.

### **Aim**

3. Road Safety Training aims to demonstrate BROs commitment to change old thinking about road safety and develop a new approach towards safer and secure workplace environment.

### **Scope**

4. Road Training System is based on a safe-system approach with actions spread across the entire road system under five pillars, some of these actions will represent significant changes. Fundamental to this approach is the need for responsibility to be shared by road users and by the Projects.

- (a) Part I : Road Safety Education & Challenges.
- (b) Part II : Road Safety Management.
- (c) Part III : Safer Vehicles.
- (d) Part IV : Safer Road Users.
- (e) Part V : Post-Incident Response.
- (f) Part VI : Safer Driving Environment.

## **PART I: ROAD SAFETY FACTORS, EDUCATION & CHALLENGES**

### **Road Safety Education**

5. Road safety education consists of all of the measures aimed at influencing the way people behave with respect to road safety. It works at three complementary levels:

- (a) It dispenses knowledge and understanding of road rules and situations.
- (b) It develops skills through experience and training.
- (c) It changes road users' behaviour for their own safety and that of others.

6. These three aspects are interdependent, which is why we have to work on all three levels at once. Knowledge without any practical experience of hazardous situations is not sufficient to avoid danger. Attitudes, skills and knowledge are of no use if the road user prefers to adopt a risk behaviour.

### **Challenges**

7. **A Neglected Subject.** For road safety education to be effective, though, it must be visible, accessible to as many people as possible, and supported by the top echelons. GREF Centre is an ideal place for introducing road safety and continuing training. And yet road safety education is not given the priority it deserves.

8. **Institutional Framework.** The institutional frameworks and organizations in charge of road safety education vary. More importantly, there are often a number of stakeholders involved and the different levels of responsibility coexist or overlap. This diversity makes it difficult to develop national and transnational approaches.

9. **Fragmented Approaches.** While the majority of the Projects recognize the importance of ongoing awareness training, the main focus would nevertheless appear to be on drivers, with the result that they are sometimes neglected.

10. **Lack of Coordination.** We have dedicated structures and funding for road safety education. Clearly, though, this is not always enough. The shortage of resources is particularly patent when it comes to training at centre and Projects. Special training modules have to be introduced but these efforts are still limited. Yet GREF Centre is the key player in awareness training initiatives, which, as a result, depend on their willingness to become personally involved in the subject. Better coordination with the government and education authorities would be beneficial for all concerned, as the private sector contributes resources, material and sometimes a novel approach. Associations and representatives from the automobile and insurance industries are often willing to initiate or support education and awareness-raising programs.



## **PART II:ROAD SAFETY MANAGEMENT**

### **Gen**

11. This strategy is based on a renewed partnership within Projects; between BRTF/RCC and their personnel as road users; between Projects and local authority; and, finally, collaboration with the private sector. Collaboration and partnerships will be essential to leverage knowledge, existing initiatives and ultimately benefit from economies of scale. Road safety management requires the implementation of road safety management across Projects comprising the following steps.

### **Comprehensive Road Safety Policy**

12. The policy should, at minimum, cover the following:

- (a) Clearly-defined roles, responsibilities and accountabilities.
- (b) Standard minimum requirements for operating a BRO vehicle, including health, background checks, licensing, driver authorization and training.
- (c) Minimum organizational, managerial and technical measures to improve attitudes and behaviours towards road safety, including training, enforcement, incentive and disincentive programs, journey preparation, and driver's time- management.
- (d) Requirements for collecting and reporting crash data and Investigation and/or fact-finding protocols and procedures.
- (e) Ensure that drivers of vehicles are fully aware of the rules applying to road traffic and road signs and signals, including customary habits where legislation is not in place.
- (f) Ensure that, as a minimum, rules concerning vehicle requirements, vehicle inspection, transport of dangerous goods, and road crew work are complied with and all vehicles meet the standard safety level of BRO.
- (g) Refer BRO road traffic safety standards and core compliance requirements.

### **Improving Governance**

13. The following steps can be implemented for improving governance:

- (a) Confirm leading and coordinating roles within the PROJECTS.
- (b) Create a dedicated capacity within PROJECT to develop components of the road safety strategy and oversee the implementation of the action plan.

- (c) Develop efficient working coordination methods through the establishment of a working group composed of all concerned streams of work: Medical, Human Resource (E1), Fleet Management (E4), Store Management (E3) and Security.
- (d) Assign individuals from the relevant sections/ branches of work as representatives and act as focal points on road safety and are responsible for internal advice and development of internal guidance within the PROJECT.
- (e) Develop competence of BRO Staff across hierarchy through specific courses related to road safety approaches.

### **Improving Road Safety Management**

14. The following steps can be implemented for improving Road Safety Management:

- (a) Develop a standard incident reporting form based on the agreed norms.
- (b) Develop a standard investigative and/or fact-finding protocol and procedure.
- (c) Establish a centralized road crash database, by either amending the existing system or developing a new, simple online/application-based reporting tool under the responsibility of HQ DGBR.
- (d) Develop SOPs for reporting, recording and managing vehicle crashes and establish a chain of responsibility to achieve strong compliance with the requirements in line with Occupational Health and Safety Strategy along with care for the individuals involved in the crash.
- (e) Conduct periodic crash analyses and continuously inform all involved PROJECTS about road safety situations as well as the actions taken and the results.
- (f) Establish a lessons learned mechanism providing evidence-based information to support training and awareness campaign.

### **PART III: SAFER VEHICLES**

#### **Gen**

15. The effectiveness of any BRO task in the field is related to its mobility, which in turn correlates to the vehicle fleet. This includes the quantity, quality, condition and types of vehicles available in relation to the condition of the roads and the type of terrain in the operational area.

#### **Strengthen Vehicle Management**

16. Encourage PROJECTS to establish adequate vehicle management tools.
17. Ensure that all vehicles and parts are operationally serviceable, able to perform and of sufficient quality for the intended task with due regard for safety.
18. Verify systematically that all vehicle safety equipment is present in the vehicle and in good working condition.
19. Encourage PROJECTS to adopt in-vehicle monitoring systems and telematics.

#### **Safety through Technology**

20. The following steps can be implemented for use of technology:-
- (a) Encourage acquisition of vehicles, equipment and parts in accordance with corresponding BRO Technical Regulations meeting the requirements applicable in the area of use.
  - (b) Authorise PROJECTS to purchase, operate and maintain vehicles that offer advanced safety technologies, high levels of operational capability and that are compatible with local worksite conditions and which include speed & location monitoring devices.
  - (c) Encourage deployment of crash avoidance technologies with proven effectiveness such as Electronic Stability Control and Anti-Lock Braking Systems in motor vehicles.
  - (d) Ensure that all vehicles are equipped with safety belts and anchorages that meet safety tests, first aid kit, fire extinguisher, warning triangle, spare tire, jack and appropriate tools and other required equipment required at the workplace.
  - (e) Encourage the acquisition and use of devices that actively measures fatigue, physical strain or stress and substances which may help BRO personnel to safely operate vehicles.

## **PART IV: SAFER ROAD USERS**

### **Gen**

21. Many road crashes are attributable to a broad range of human behaviours such as perceptual error, inattention and failure to choose correct response; lack of knowledge, skill, coordination or planning; lack of safety awareness; and improper attitudes towards safety. BRO is committed to provide their personnel with awareness programmes and training to ensure the establishment of a road safety culture throughout the system.

### **Standard Training**

22. All personnel systematically receive standard basic road safety awareness training, regardless of whether they are expected to operate a BRO vehicle.

23. All personnel receive a proper road safety and familiarization briefing, including on proper driving techniques for the prevailing road and weather conditions in the area of operation before they are authorized or allowed to operate a BRO vehicle.

24. All drivers are properly trained and prepared for the vehicles they are expected to drive. PROJECTs should provide training for operation and maintenance. Defensive driving training in particular should be a mandatory and standard requirement for drivers of all types of vehicles.

25. Ensure that all trips have included planned rest breaks for drivers on trips over two hours in duration in accordance with Road Safety Regulations.

26. Ensure that all drivers are regularly reminded of their obligations with respect to the use and physical safety of BRO vehicles.

27. Develop a strategic communications campaign to inform all staff, drivers, operators and PROJECTs of the launching of this strategy.

### **Awareness Raising**

28. Develop a communications plan to ensure a consistent dissemination of road safety information and education to BRO personnel.

29. Design training and awareness campaigns that are supported by a lessons-learned system providing evidence-based information, data analysis, and periodic review of accident analysis.

30. Ensure that dangerous goods (fuel, explosives) have a JE (E&M) appropriately trained and appointed as a Safety Adviser for their transportation. Once trained, the appointed person should provide specific advice to personnel

involved in preparing dangerous goods for transportation, storage, stowage in vehicles and receipt.

### **Driver Authorisation**

31. Establish minimum standard requirements for operating a BRO vehicle including the health, background checks, licensing and training requirements.

32. Establish standard procedures to ensure that the driver license holder is suitable and safe to drive for the BRO, or if feasible, to ensure that BRO vehicles are operated only by personnel who have been tested by qualified personnel and duly authorized.

33. Ensure that driving permits are issued based on the vehicle category as outlined in BRO Regulations.

34. Ensure that all personnel engaged with BRO as a 'driver' are medically cleared. All PROJECTs will ensure that medical examinations are performed annually (or at least biennially) including eyesight testing.

### **Enforcement**

35. Establish mechanisms to monitor compliance with the BRO policy governing the safe use of BRO vehicles. Pay particular attention to all aspects of a safe road transport system, including vehicles, roads, speed, road users and the general road safety environment.

36. Establish mechanisms where safe drivers are recognized and supported and where drivers, passengers and supervisors who violate the BRO road safety rules and/or local traffic safety laws are held accountable.

37. Establish performance indicators including all relevant aspects of vehicle, speed management and behaviour for a comprehensive assessment of road safety performance.

38. Establish mechanisms to ensure that the regulations applicable to transport of dangerous goods by road in the area of operation are fully complied with.



## **PART V: POST INCIDENT RESPONSE**

### **Gen**

39. Recognizing that despite all efforts road crashes may occur, BRO should exercise their duty of care towards their personnel to ensure that efficient plans and procedures are in place in cases of emergencies. BRO should also work with local and other central authorities to increase responsiveness to post-crash emergencies.

### **Increase Preparation and Response**

40. Ensure SOPs are in place for response and immediate actions to take if there is a crash, with particular attention to potential risks incurred.

41. Ensure medical plans/evacuation plans are in place. Ensure that first aid kits are in place and BRO personnel have training on immediate actions to take to provide first aid.

42. Provide psychosocial follow-up support to personnel involved in a crash.

43. Ensure medical and administrative protocols are followed to ensure a duty of care including support for filing injury form and MLC reports/ FIR.

44. Develop road safety guidance for each Sector with respect to cultural and local conditions that should be adhered to with respect to BRO being involved in a crash impacting a third party.

45. Ensure that the cargo is properly documented when dangerous goods are carried and that the vehicle is marked in accordance with applicable regulations in order to facilitate appropriate emergency response in case of an incident.

46. Ensure that emergency response teams under supervision of PROJECTs/ BRTFs are well aware of emergency response guides and databases that are available and are provided with appropriate emergency response equipment and training.

## **PART VI: SAFER DRIVING ENVIRONMENT**

47. **Gen.** BRO should increase the safety of road networks for the benefit of all road users, including pedestrians and motorcyclists.

48. **Safety Essentials Handout.** Share safe driving tips with all BRO personnel as an important reminder to respect the hazards of operating a vehicle. Safety driving essentials are attached as **Appx A**.

49. **Operation, Maintenance and Improvement.** Encourage safe operation, maintenance and improvement of existing road networks as well as road safety awareness where BRO personnel operate. Safe parking of vehicles and equipment as per BRO Regulations to reduce accidents. Planning routes so that drivers are not fatigued and effective monitoring of movement of vehicles. Ensure vehicle movement is strictly restricted after working hours (1800 hrs).

### **Measures to Improve Road Safety**

50. **Engineering Measures.**

(a) **Geometric Design.** Geometric design measures which ensures adequate width, curve radii, easy grades and sight distance.

(b) **Engineering Design.** Engineering design measures to deal with specific and exclusive conditions in hills. This includes design and provision of good drainage system, protection like parapets, railings, snow fences, snow shelters, rolling boulder, buffer (netting), etc.

(c) **Traffic Control.** Traffic control devices like signs, signals, pavement markings, delineators, advance public warning system etc.

51. **Education Measures.** Awareness among the road users towards road safety should be encouraged by initiating actions as under:-

(a) Distribution of pamphlets.

(b) Mass media publicity.

(c) Imparting awareness in the schools.

(d) Conducting regular coordination meeting comprising various stake holders.

### **Road Safety Sensitisation**

52. BRO Officers and JEs to be trained on road safety at some of the prestigious institutes like IAHE.
53. Road safety committee at District level to be constituted for expeditious coordination among the various stake holders.
54. In all our roads, black spot areas needs to be identified for proper planning to mitigate the black spots by taking short term/long term measures.
55. At all such locations where lower category roads meets at higher category, traffic calming measures needs to be taken in accordance with relevant IRCs.
56. For all the completed roads, NSV survey is to be planned and based on the its report remedial measures needs to be taken to improve the shortcomings.
57. DPR needs to be pre-reviewed by the safety consultant to get their inputs at the initial stage.
58. Completion certificate is to be issued only after carrying out the post road safety audit by the safety consultant. In this regard, permission to hire the services of safety consultant through competitive bidding may be explored till sufficient pool of expertise is not available with BRO.
59. For all roads which are planned to be developed under EPC mode, NSV survey to be made mandatorily, so that deficiency if any is noticed and the same can be rectified by the EPC contractor itself. Final completion to be issued after carrying out road safety audit.
60. Sufficient financial powers to be given at the level of Chief Engineer Project for rectification of identified black spots in their AoR by taking short term/long term measures as the case may be.
61. A single portal to be developed for monitoring of all the black spots at the Project level.
62. Incident management system needs to be strengthened like evacuation of the injured personnel to the nearest health centre for their medical aid.

### **CONCLUSION**

63. While there are roles and actions that Projects will have to take to make the Road-Safety Strategy work, ultimately the responsibility for the strategy lies with all BRO personnel. This safe-system approach requires everyone to do their part to make vehicles and road use safer. The goal is that death and injury will in the future no longer be an inevitable part of road-use by BRO personnel. To achieve this, the strategy has outlined a safe-system approach with key actions spread across five pillars that will address major road safety issues for BRO personnel.

**Appx A**  
**(Refers to Para 48 of Road**  
**Safety Training Way Ahead)**

**SAFETY ESSENTIALS HANDOUT**

1. Always wear a seat belt, and make sure that all passengers do, as well.
2. Do not drive if you are under the influence of alcohol or drugs. Call your IC/OIC/OC and take alternate transport instead.
3. Check any medications you take for side effects, such as drowsiness, that could impair your driving, and avoid taking those medications before you drive.
4. Avoid driving while drowsy or fatigued. If you feel sleepy behind the wheel, pull over and take a break.
5. Set realistic goals for the number of kms you can drive safely each day, and take periodic breaks to get out of the vehicle, stretch, and take a walk.
6. Avoid distractions such as texting or using mobile devices while driving, manipulating GPS or in-car entertainment systems, and anything else that takes your eyes off the road, your mind off your task, or your hands off the steering wheel.
7. Secure any tools or equipment before starting the vehicle to prevent them from becoming a hazard during a sudden stop or crash.
8. Don't respond to aggressive driving; avoid engaging in conflict with other drivers and be patient and courteous in traffic. If you encounter a seriously aggressive driver who poses a safety hazard, call higher auth.
9. Slowdown in work zones and pay attention to changes in the traffic pattern.
10. Watch for workers throughout the work zone.
11. Keep your vehicle in safe operating condition; follow your manufacturer's maintenance schedule and inspect your vehicle for safety issues before you drive.
12. Use extra caution and reduce your speed at night, during challenging weather conditions like snow and ice, and on roads that are narrow or have poor visibility.
13. Constantly scan the road ahead of you for hazards, including disabled vehicles, pedestrians, animals or debris in the roadway, and drivers who may be impaired.