

Kudos to BGMEA, but no room for complacency

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GARMENT manufacturing in Bangladesh has been a silent revolution. That has been said before.

Garment manufacturing has provided mainly our women workers and their families with economic security and hope, despite the occasional gender-based harassment and need to do more in terms of better workplace precautions and protection. That you have heard before.

Garment manufacturing and exporting have bided well for many entrepreneurs in Bangladesh. That is evident from expansion and linkage projects.

This sector has portrayed a vastly positive image of this country abroad. That has been written about.

These fountains of social expectation and financial refuge have ironically been the cause of tragedy and despair for many due to rampant fire accidents particularly in the 1990s. That has also been widely reported.

What has hitherto not been given wide publicity is the unified effort of the Bangladesh Garment Manufacturers and Exporters Association (BGMEA) in making the factories safer from fire incidents. For the sake of our workers and in keeping with the demands of the international community we need to make factories, not only those manufacturing garments, safer workplaces.

In our story today, Anisur Rahman reports on the improved track record of a sector that was beleaguered in the face of several fatal accidents, most of which appeared to have been avoidable.

While the focus of BGMEA has been 'fire' for obvious reasons, they must also give due attention to other aspects health and safety at work

places. These will include moving machinery, handling materials, heat appliances, physical facilities, light and ventilation, and services. In fact, every sector dealing with work, be it textiles, jute, tea, construction, shipyards, even television broadcasting, for example, must take structured measures, if need be, executed in phases, to make the work environment safer and thereby more productive.

What the BGMEA, or for that matter any other of the associations, we are certain will not do is bask in the satisfaction that a reduction in fire accidents is the fulfilment of their responsibilities. Work places by and large are still congested, ill-planned, illegally set up in unauthorised buildings, dark and badly lit, hot and humid, unventilated, without proper rest rooms, canteen and crèche (Factories Act 1965), and generally unsafe (for instance, electricity, boiler, handrail lacking in staircases and roof tops where workers have their lunch).

It has been said many a time, much has been written on it, but we cannot emphasise any more on a cliché without repeating: Much more needs to be done.

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Fire safety in garments factories: An overview of the present status

ANISUR RAHMAN

THE garments industries in Bangladesh have contributed extensively to the economy and development of Bangladesh. It is not only the largest sector to contribute to Bangladesh's foreign exchange earning; the garments surplus has made smart clothes cheaper and more accessible in this country. In spite of this positive aspect, there have been at least 83 fire-related incidents and 126 deaths since 1990 in the city. Most of the deaths have been caused due to lack of foresight of factory owners who have failed to invest in safe working conditions. Zealous security measures, narrow staircases, lack of regular fire drills and improper storage facilities are some of the major causes of the recurring tragedy. Factory owners have been compelled by law to install an external staircase as fire escape. Its effectiveness is under scrutiny with reference to construction, material, width, etc. The Bangladesh Garment Manufacturers and Exporters Association (BGMEA) in the past few years have undertaken five-day training for workers as well as regular inspection to increase awareness about fire safety among the workers.

Readymade Garment (RMG) sector plays a very significant role in the socio-economic development of Bangladesh. In Bangladesh the total contribution of RMG in export is more than 74% of total export earnings. Given the appropriate policy support the RMG sector can make more contribution in increasing the export earnings of Bangladesh. However, garments factories of Bangladesh have earned the reputation of failing to incorporate the factor of fire safety in the overall working process. The unplanned

manner of the development of these industries to a large extent fails to live up to the lawful requirements.

Garment industry of Bangladesh has become the largest foreign exchange earning sector, exporting apparel of all sorts to the USA, Europe and other developed countries. The garments industry of Bangladesh is an impressive document of the leadership of private enterprise and the country's successful transition to a major export oriented economy.

Bangladesh registered its first apparel export in 1978, but the progress since the early 1980's has been simply phenomenal. It has by now become a giant industry, earning the lion's share of the country's foreign exchange and providing its women with the largest formal employment.

Unfortunately, garment factory owners are generally not adequately aware about fire, its potential dangers and consequences, preventive and control measures that need to be adopted. It appears that in their haste to establish a footprint in the very competitive market, fire protection seems to have missed out as a priority.

BGMEA
The Bangladesh Garments Manufacturers and Exporters Association (BGMEA) is the only recognised trade body that represents the export-oriented garment manufacturers and exporters in the country. The association started functioning with only 134 members in 1983. The total membership of the association has now swelled to about 4000.

The objectives of BGMEA include:
1. To protect and uphold the interest of the industry by helping formulation of government policies congenial to the healthy growth of the sector.
2. To provide welfare services to

the workers and employees of the member units.

3. Educating the displaced workers below the age of 14 years and the children of the workers through setting up of school-cum-health centres in different zones of Dhaka, Narayanganj and Chittagong.

4. Ensuring adoption of safety measures in order to avert fire accidents in factories.

5. Having regular coordination with the labour organizations in the garments sectors to resolve labour related issues and to establish cordial employer-worker relationship.

6. Co-sponsoring with GOB, ILO and UNDP for implementation of welfare measures for garments

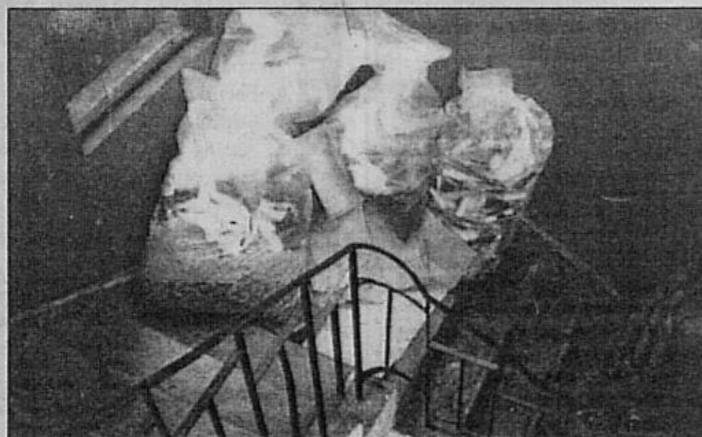
table conferences on current trade issues to develop awareness and consensus among the members and other related parties.

(Source: BGMEA Member Directory 2002-2003)

Problem Statement

General Conditions
The present situation in most of Bangladesh's garments industries (excluding very few) are very poor because of the following reasons

1. The circulation is congested
2. The working space is non-ventilated
3. Poor natural and artificial lighting system
4. Hot and humid environment



Staircase occupied by materials obstruct escape.

workers in boarder areas of primary health care, transportation, social security & insurance coverage, housing & skill training.

7. Contributing financial aid for the victims in case of casualty in fire accidents in member-factories.

8. Organizing seminars and round

5. Escape routes are crammed with work tops and haphazardly kept combustible materials

6. Improper wiring and electrical design, illegal connections

7. Careless smoking and heating practice

8. Narrow staircases

9. Insufficient number of staircases

10. Exit points at ground (escape) level are locked or made very narrow for security

Causes Of Fire

1. Improper, indiscriminate and exposed wiring system

2. Overload on electricity and electric machines

3. Heat generated from steam iron and boiler sections

Causes of Fire Hazard in Garments Factories (not exhaustive)

1. Presence of highly combustible materials create excessive fire load

2. Improper layout in commercial and residential buildings that are not designed for garments industries. This unauthorised change in building use causes various types of hazards including fire hazards

3. Machine layout compels workers to travel round machine lines to reach the exit thereby exceeding travel distance beyond the safe limits of 30-40 meters

4. Users become panicky because they do not know the behaviour of fire or their responsibilities in a fire situation

5. Movement of people in dark and concealed space in case of power cut, and in narrow congested corridors and staircases

6. Absence of adequate fire exits and sometime no fire exit

7. The main staircase is often the only staircase operational

8. Narrow exits are either locked, or only about 18 inches of a collapsible gate is kept open as zealous security measures, and to save on security personnel

9. Security measures driven to extremes, causing safety hazards

10. Improper waste disposal, and lack of maintenance

11. Not using fire protective materials for finish and interior works

12. Not aware about how to use fire

The Survey

CASE STUDY 01

Type: Residential building converted into garments factory

Floor area: 2250 sft per floor, 5-storied building

Number of employees: 350

Features:

Entry - No separate entry for loading and unloading

Toilets - Insufficient (1:50)

Circulation narrow, goods stacked on the path.

- Corridors are occupied by boxes of finished goods

Ventilation - Not proper as very few windows as in a residence

- Heat generated

Ceiling height Low ceiling height suitable for residence creates heat and congestion

Emergency exit - Typical narrow Mild Steel staircase

- narrow circulation path to emergency exit

- path interrupted by machine, furniture and goods

Clearance - Insufficient clearance between machinery

- No sitting provision for helper

Store area - Insufficient

CASE STUDY 02

Type: Commercial building converted into garments factory

Floor area: 6000 sft per floor. 10-storied building

Number of employee: 1200

Features:

Entry - No separate entry for loading/unloading

Toilets - Insufficient (1:60). No separate toilet for male and female

Layout - Process lines are disrupted by columns

Clearance - Machine to machine distance is not adequate for movement of materials

and workers

Emergency exit - Typical narrow Mild Steel staircase

CASE STUDY 03

Type: Commercial building converted into garments factory

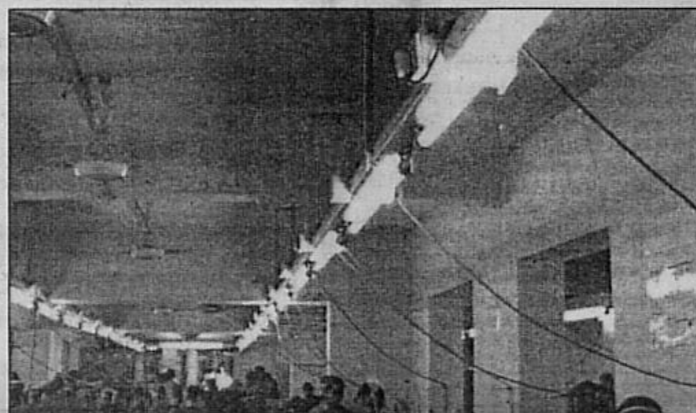
Floor area: 15000 sft per floor, 7-storied building

Number of employees: 1500

Features:

Entry - separate entry for officers, workers and for loading/ unloading of goods

Emergency exit - no additional stair for fire escape. Normal stairs to be used in case of emergency.



Low ceiling, loose electric connection generate heat, increase risk

fighting equipment

Effects of Fire Hazard:

Fire hazard in garments industry that affects the national economy, the victim's family, worker's health and safety, and the physical environment may be summarised as follows:

1. Fatality
2. Short- and long-term injury
3. In case of both 1 and 2, affects family of the victim, who may have been the sole bread earner
4. Loss of goods and earning
5. Loss of market to competitors
6. Damage to building and equipment
7. Effect on health and environment

Present Status: Crash Programme to Avert Work Place Accidents

In view of the growing accidents, giving top priority to prevention of fire and eventual evacuation,

BGMEA initiated a Crash Programme in September 2001 to further raise awareness among the workers and management. The programme included management counselling to refurbish existing safety facilities and equipment, preventive measures and safety drill. Awareness has been raised through crash programme on fire prevention, First Aid, fire-fighting equipment, proper electric wiring and evacuation facilities. Initially 27 teams were formed with experts from the Fire Service and Civil Defence. The teams checked existing facilities and demonstrated fire prevention and evacuation drills in factories in Dhaka and Chittagong. The programme is a continuing process.

Work Place Safety Programmes for Workers

BGMEA has been implementing a number of programmes to ensure work place safety for workers as well

as management personnel of its member units. BGMEA Safety Measures Cell organises the awareness and training programmes, enforces and monitors safety regulations.

Simultaneous to providing compensation to the affected workers and their families BGMEA has intensified the need for compliance to safety regulations and awareness in the member organisations. In case of death or injury at work, in addition to the compensation of the individual factory owners, BGMEA pays the cost of treatment and extra compensation to the affected worker or his family. Between December 1990 and September 2001, the BGMEA has paid taka 54,09,000 towards compensation to affected workers.

Garment Village

It is an urgent need to transfer the city centre garment factories in a planned way to a suitable location for availing planned commercial advantages including the security of the labour force engaged in garments industry and decreasing the number of accidents parallel to compliance with international standards and legislation.

The BGMEA strongly feels the relocation of garment factories in open areas outside the busy city will help the members better fulfil their commitment to the workers and the international community. To that end, the association has been working on setting up garment villages. Once the proposed garment villages are set up, it would be easier to ensure all compliances, including providing better workplace safety and accommodation to the workers and employees on the campus.

Concluding remarks

The Readymade Garments industry in Bangladesh has experienced an unprecedented growth over the last decade and half. The exports of the industry accounted for over 76% of Bangladesh export earnings in fiscal 2001-2002 and provided employment to 1.8 million people, of whom 80% are women. It promotes the development of other key sectors of the economy, including textiles, banking, packaging, transportation, insurance and support industries. Several million more jobs in Bangladesh are linked to the clothing sector.

To ensure fire safety in every garments factory the following measures should be adopted: (not exhaustive)

1. The possibility of a fire should be restricted by design.
2. Sufficient precautionary measures should be taken to minimize the possibility of a fire starting.
3. A properly designed Means of Escape should be ensured.
4. Fire control means should be ensured
5. Proper inspection and investigation
6. Regular fire drill, twice a year
7. Insurance cover for workers
8. Insurance cover for building and equipment

Despite the improvements in fire safety record, there still needs to be a lot done in various sectors so as to provide the factories with acceptable working conditions.

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List of major fire accidents in RMG industries of Bangladesh (1990-2003)

No	Date	Name of Factory	Fatality
01	27/12/90	Saraka Industries Ltd.	23 killed in fire
02	11/02/95	Proster Industrial Co. Ltd.	5 killed and 12 injured
03	05/08/95	Lusaka Fashion Ltd. and Fa Garments Ltd.	9 killed in stamped following a false fire alarm.
04	24/06/96	Suntex Fashion (BD) Ltd.	12 killed
05	15/07/97	Rahman & Rahman Apparels Ltd. and Maxborne (BD) Ltd.	9 burnt alive
06	30/07/97	Jahanara Fashion Ltd. and Sunghai Fashion Ltd.	25 killed following a boiler explosion
07	06/09/97	Novelli Garments Ltd.	5 killed
08	21/11/97	Dorin Garments Ltd.	2 killed
09	12/02/98	B.P Garments Ltd.	1 killed
10	09/07/99	Rose Fashion Ltd.	2 killed
11	27/08/00	Globe Knitting (BD) Ltd.	12 killed
12	08/08/01	Mico Sweaters Ltd. Ajex Sweaters Ltd. Four Wings Ltd. Europe Sweaters Ltd.	21 killed

Source: BGMEA

List of fire accidents in RMG industries of Bangladesh after crash programme taken up by BGMEA in September 2001

No	Date	Name of Factory	Fatality	Number injured	Cause found by Fire Service & Civil Defence
01	11/09/01	Crest Garments Ltd.	-	-	Electric Short-circuit
02	13/09/01	Allayence Garments Lt	-	-	Electric Short-circuit
03	28/10/01	Meghna Garments Ltd.	-	-	Under Investigation
04	01/12/01	A.B.C. Garments Ltd.	-	-	Electric Short-circuit
05	03/12/01	L.R.T. Fashion Ltd.	-	-	Electric Short-circuit
06	04/12/01	Star Fabrics Ltd.	-	02	Electric Short-circuit
07	17/01/02	Urmi Garments Ltd.	-	-	Electric Short-circuit
08	17/02/02	Harvest Rich Ltd.	-	-	Under Investigation
09	07/03/02	King Sweater Ind.	-	-	Under Investigation
10	09/05/02	Fa Design Ltd.	-	04	Electric Short-circuit
11	10/05/02	Shyamoli Garments	-	-	Electric Short-circuit
12	31/05/02	Delta Composite Knitt.	-	-	Unknown
13	12/07/02	Samsons Sweaters Ltd.	-	01	Electric Short-circuit
14	16/10/02	CA Knit Wear Ltd.	-	-	Unknown
		Total	00	07	

Source: BGMEA

Legal issues:	1. Each room has to have two exits and people can reach them easily
Building Construction Rules 1996, adopted under Building Construction Act 1952	2. Each exit door has to be 32" wide and 6'-6" high at least.
	3. There should be two stairs directly down to the ground level
	4. Open sides of the stair should have handrail
	5. Stairs should be made of fire-resisting materials
	6. Every lift-way should be surrounded by fire-resisting materials and doors should be made of fire-resisting materials
	7. Emergency stair should not make an angle more than 45 degrees with the ground
	8. Stair should be with in 150 feet from the fire portion.
	9. No stair should be less than 45" width.
	Floor, Stair, Entrance:
	1. All floors, stairs, walkways should be well constructed
	2. Stairs, walkways etc. should have handrail.
	Safety in Terms of Fire:
	1. No door can be locked or closed tightly
	2. Path of the emergency exit should be indicated by large red signs
	3. Emergency alarm system should be provided
	4. Training should be given to the workers
	5. Should have fire extinguishers and instruments
	Fire Service and Civil Defence
	1. Each floor of the factory should have Carbon Dioxide (CO ₂) fire extinguisher for fire caused by electricity and dry chemical powder (DCP) fire extinguisher for fire caused by other means
	2. Fire extinguishers should be refilled after regular interval and should be inspected
	3. Alternative stairs should have minimum 42" width and be at maximum 45 degrees angle
	4. Each floor of the factory should have two fire points and every point should have one water drum of 45 gallons and 4 buckets hung
	Clause 22 Special rules: Industrial buildings
	1. Two-third of land can be used for construction
	2. Rear and sides - 2.50m (8') open space
	3. Must have arrangement for waste disposal
	Clause 25: Special rules: 7-storied or higher buildings
	1. Elevator
	2. Electricity generator for emergency lighting to staircase, corridor, elevator, water pump, kitchen, etc.
	3. Fire prevention and control measures as per National Building Code and Fire Services
	4. For aeroplanes - RED security light in buildings above 45.70m (150')
	5. 10-storied or higher buildings
	5.1. Open space: Rear - 3.00m; Sides - 2.50m
	5.2. Community space - 5% of total floor area; not on the roof
	BGMEA (Labour & Factory Law) Means of Escape In Case Of Fire:

5. The door of the alternative staircase should be kept open during the working period

6. The access to the staircase should be kept clear all the time and there should not be any goods at the access

7. Emergency light should be provided inside the factory and the staircase

8. Opening and closing of the door should be designed properly so that workers can pass out or in easily

9. Electric wiring should be concealed or ducted

10. Have to provide hose reel

11. Have to provide smoke detector

12. Have to provide public address system

13. Have to have the provision of First Aid and necessary medicine

14. Provision of stretcher for the injured people should be kept

15. The phone number of the fire service, police, hospital and electricity departments should be kept in different places of the industry along with signs and symbols

16. Other important items such as manila rope, gong bell, hand gloves, rubber mask, fire hook, blanket and minimum one piece of quilt should be available

17. The boiler section should be defined and separate from the working zone

18. Every switchboard should be made of ebonite plate

Bangladesh National Building Code (BNBC) 1993

General Requirements

The access facilities for fire service vehicles and engines shall meet the following requirements:

1. Fire apparatus access roads shall have an unobstructed width of 4.5m and the minimum vertical clearance shall be 5m. The width and vertical clearance of fire apparatus access roads may be increased when in the opinion of the fire authority, the clearances are not adequate to provide fire apparatus access.

2. Fire apparatus access roads having a dead-end longer than 30m

from the main road shall be provided with appropriate provisions for turning around the fire apparatus.

3. The fire apparatus access road shall be marked by an approved sign.

Precautionary Requirements (selective)

1. Openings in fire separating walls and floors shall not exceed the approved limit and the opening shall be protective type and conform to the approved provisions.

2. Industries should have automatic fire alarm and venting system, fixed CO fire extinguisher, etc.

3. First aid fighting appliances shall be provided on all floors, basements and lift room etc. as required by the authority. Location and distributions of fire fighting appliances shall also be as required by the authority.

Means of