

# How far is Rooppur from Ashulia and Savar?

M. HARUN UZ ZAMAN and QUAMRUL HAIDER

THE answer to the above question is obvious -- about 150 and 140 kilometers, respectively. But the discerning readers may have guessed that we are talking about a different kind of distance.

Imagine the following. Many moons from now, Bangladesh has an operating nuclear power plant at Rooppur, running at full capacity of 2,000 MW generated by two Russian-built reactors. From a distance, one could see clouds of pristine white smoke bellowing out of the cooling towers. Blissfully unaware of the risks and problems that come with the use of nuclear power, Bangladeshis are elated at the thought of being among an elite group of nations that uses this cutting edge technology. To illustrate some of these risks and problems, we consider two possible accident scenarios that may happen at a nuclear power plant.

**First scenario:** Wispy smoke is noticed inside the control room of the plant. After activating a shutdown of the plant and alerting the emergency safety crew, plant operators proceed to exit the building in a calm and orderly fashion. To their utter horror, they find the exit doors locked. Then they remember that the exit doors are supposed to remain locked for security reasons. However, the doors are supposed to open automatically during emergencies to let the workers leave the premises and also allow the emergency crew to come in and respond to the situation. The

safety mechanism which would open the doors fails perhaps because of an oversight in maintenance, which also causes the automatic fire detection and suppression system within the plant to fail.

The fire disables the control and instrumentation circuits and the activated shutdown process fails to shut down the plant. The disabling of the control system causes other malfunctions throughout the reactor and triggers an accident, which eventually leads to core damage and a massive release of radioactivity.

One can only imagine the nightmare that follows. Due to inadequate preparation and high concentration of people living in the vicinity of the plant, about one-quarter of the population is evacuated. The rest are exposed to levels of radiation that cause deaths, cancers and other debilitating diseases. Those living far from the plant are exposed to smaller levels which could have long-term health effects. Most of the personnel inside the plant premises are either killed or seriously injured by the fire and lethal doses of radiation. And of course, the environment and the ecosystem surrounding the plant suffers heavy radioactive contamination.



**Second scenario:** A very small crack develops in one of the pipes in the primary coolant loop of a reactor. When the reactor is shut down for routine maintenance and the plant equipment are inspected for any defects, the crack goes unnoticed perhaps because the inspections are less than thorough. When the reactor is re-started and continues to operate, the crack gradually widens as the pipe is subjected to high temperatures and pressures. On a certain day, the crack becomes large enough to start leaking water out of the reactor, triggers a so-called loss of coolant accident, and eventually leads to core damage and a massive release of

radioactivity. The ultimate consequences are the same as the first scenario.

The readers might find some eerie resemblance between Ashulia and the first scenario, and between Savar and the second scenario. A fire and a crack in a pillar initiated the chain of events for the two disasters at Ashulia and Savar, respectively, and the same initiating events are hypothesised for the two scenarios at a nuclear plant. Lapses in judgment, failure to exercise due diligence and noncompliance with safety rules led to the disasters at Ashulia and Savar. It should be clear from the above narrative that similar infractions at the proposed

nuclear plant at Rooppur can have much more serious consequences.

One might argue that the Russians, the builder and operator of the plant, are more than capable to operate the plant safely and prevent any accident from happening, and should it happen, they will definitely be able to successfully manage the aftermath. We would like to emphasise that a nation's safety and security cannot be outsourced to another nation.

Now, imagine another Rooppur with the same accident-initiating events -- a fire and a crack, but which do not lead to full-blown

accidents. Under the fire scenario, automatic fire extinguishers are activated, and the operators calmly bring the reactor to a shut down. The safety evacuation team is alerted into a state of readiness, and has all the necessary equipment and trained personnel to evacuate everybody in the immediate vicinity of the plant if necessary. Under the crack scenario, the inspections are done thoroughly and flawlessly and the crack is detected when it is very small. The cracked pipe is immediately replaced and a potential accident is prevented at initiation.

If the Bangladeshi government jumps headlong into constructing the plant without building the necessary technological and human infrastructure, and the institutional superstructure that are absolutely necessary for such an undertaking, the country will end up at the first Rooppur. If all these measures are put in place and are working well before the construction starts, the destination will be the second Rooppur.

Finally, here is the answer to the question asked in the article. If the practice, culture and governance of safety in Bangladesh do not improve much beyond the level that exists today, as reflected in the Ashulia and Savar debacles, then the first Rooppur is indeed a short distance from Ashulia and Savar. But the second Rooppur, to use a well-known metaphor, seems light years away.

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## Butterfly effect, Rana Plaza and beyond!

MUHAMMAD AMINUL ISLAM

'A single death is a tragedy; a million deaths is statistics.' Joseph Stalin. There is a story that I read long ago in my elder brother's text book about the light side of introducing English in the then Bengal villages. It is about how the illiterate villagers of two contending villages were duped to discard a well meaning educated young man with quite a good command over English in favour of a deceitful and frivolous person. In the face of ignorant collective judgment the cheat was victorious, honesty was ignored.

While attempting to explain the reason for the collapse of the Rana Plaza building, the home minister said: "So-called hartal supporters went to the place [Rana Plaza] and tried to shut the factories [in the building] down. There was already a pillar that had almost collapsed. These people banged on this pillar and the adjacent collapsible gate. The whole building came crashing down perhaps due to this banging that caused one part to collapse completely." The minister's comment drew flak from people of all walks of life.

Our ignorance of the butterfly effect, perhaps, triggered such huge public outcry and tempted us to indulge in quick and summary judgments. The butterfly effect, in its text book definition, is the sensitive dependence on initial conditions in which a small change at one place, under certain conditions, can result in large differences in a later state. The name of the effect is derived from the theoretical example of a hurricane's formation being contingent on whether or not a distant butterfly had flapped its wings several weeks earlier.

An easy version of butterfly effect is exhibited by very simple systems. For example, a ball placed at the crest of a hill may roll into any surrounding valley depending on, among other things, slight differences in initial position. The whole idea is that a butterfly's wings might create tiny changes in the atmosphere that may ultimately alter the path of a tornado or delay, accelerate or even prevent the occurrence of a tornado in another location. The flap of the wings is a part of the initial conditions; one set of conditions leads to a tornado while the other set of conditions doesn't. The flapping wing represents a small change in the initial condition of the system, which causes a chain of events leading to large-scale alteration of events.

Thus, given the context of butterfly effect and a huge gap between the initial condition and effect, the home minister's remarks seem to be justified. But the million dollar question is whether he meant it or was it a gimmick to shift responsibility to the political adversaries as our political culture dictates? Whether it was political gimmick or not, Monwar Hossain, another victim, succumbed to his injuries at the intensive care unit of a hospital on August 8, bringing the death toll to 1,133.

He was struggling with death for 107 days in a coma since the April 24 Rana Plaza building collapse. Hopefully, and we earnestly pray, no more victim of Rana Plaza succumbs to injuries or for any other secondary reasons.

What really went wrong in Rana Plaza? If we traverse from Spectrum (April 11, 2005) to Rana Plaza, it can be seen that it is a story of sheer negligence on part of the regulators, greed of some unscrupulous entrepreneurs and, above all, our collective failure to take lessons and build on experiences. Immediately after the Rana Plaza incident, the government, hitherto napping since Spectrum, moved into action. Even the PM had to personally order the arrest of Rana Plaza owner and four RMG factory entrepreneurs.

The High Court, in an assuring and welcome move, ordered ban on sale or transfer, and confiscation of, the properties owned by Sohel Rana and the owners of the factories, and freezing of their bank accounts. The police was most active, demanding remands for everybody they arrested -- from the pourasava chairman to its engineer.

Talk Show pundits, members of civil society and intellectuals delivered their well thought-out, articulate sermons. Rana

Plaza, no doubt, was a scene of murder, triggered by unabated greed, accentuated by regulatory failure, and alleged political patronage. But what was missed is that we failed to take lessons, given the short shelf life public memory, as we did in the past. We did not take stock of the whole scenario and, with our tunnel vision, failed to visualise the impact of the incident in the global perspective. Thus, when the GSP was suspended, we tried to find some scapegoat to avoid the shame of failure.

But could we really avoid the storm? If self-delusion helps to mitigate the immediate loss, can it really help to avoid self-destruction? The death toll of Rana Plaza is extremely high, as big as a million as foreseen by Joseph Stalin, and should not be allowed to become merely a statistics. So it is time to join hands and heads together to set a common goal and strategise the national future. That future should include decent wage for the workers, and safe work environment, whether the global buyers cooperate or not.

Should it be done or not, should the deceitful reign supreme or not, butterfly effect or not, Rana Plaza has once again demonstrated that peoples' power will overwhelm the inadequacy of the system. The heroic volunteers of Rana Plaza evacuation have etched a new history in the annals of independent Bangladesh. Their heroism has demonstrated that the invincible human will can survive and conquer all odds. We only hope that in the absence of government, Talk Show pundits, members of civil societies and intellectuals, these unsung heroes rise to the occasion again and again. Let us salute them!

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## Cost of eradicating extreme poverty in Bangladesh: \$2.5 billion

SHAZIA OMAR

THE extreme poor earn less than what is necessary to consume the minimum basic required calories a day. They eat less than three meals a day, and the meals they eat mostly consist of rice. They lack employment opportunities because they live in remote areas and have no education and no skills. Many of them are ethnic minorities who are excluded from markets, or disabled people who have no physical capacity to sell in the daily labour market. They are too poor to qualify for microcredit and the majority of them have fallen outside the reach of government safety nets.

The portion of female-headed households among this population is disproportionately higher than the national average as the pressure of desperation becomes too much to bear and families disintegrate. Men abandon their wives and small children in order to eke out enough to survive alone. These wives, who are from extreme poor families themselves, have never had an education or exposure to income earning, but suddenly find themselves in the position of supporting their squealing children. These children in turn are unable to go to schools or get food. It is a scientific fact that much of a person's neurodevelopment takes place within the first two years of life. Proper brain development requires protein and multi-vitamins, which extremely poor children do not get. With low IQs, no education, no fathers, no support, all that our 8 million extremely poor children are left with is a bleeding heart and a bleak future.

We, as a nation, are allowing millions of girls to become young mothers, millions of young mothers to become single parents, millions of babies to become mentally underdeveloped extremely poor people that make up the masses of our population. Is this really what we want for our sonar Bangladesh?

In Bangladesh, according to HIES 2010, there are about 26 million extremely poor people, or approximately 6 million extremely poor families. The complete eradication of extreme poverty is within our reach. It can be achieved, if political support, motivated leaders and people who care, move into action fast. To eradicate extreme poverty, what do we need?

Promotive social protection programmes that raise a person's ability to generate income need to be scaled up. Examples of successful promotive programmes that have already lifted millions of people out of poverty include the EU's Food Security for Ultra Poor Programme, Brac- Challenging the Frontiers of Poverty

Reduction and the Economic Empowerment of the Poorest (shiree). These livelihood enabling programmes transfer a package of skills, assets and support to extremely poor families. On average, a package of \$500 is enough to help a family climb out of extreme poverty. Generally, these programmes target the poorest of the poor, those who fall below the scope of micro finance eligibility.

Currently, promotive programmes support roughly 1 million families. If this work is scaled up, it can address the remaining 5 million families. The cost would then be approximately \$2.5 billion.

There are at least a dozen billionaires in Bangladesh who could, if they wanted, wipe out poverty with their funds. The government already spends a significant amount of money on poverty reduction strategies. With clearer targeting and a strong anti-corruption drive, as well as contributions from donors and private sector companies, the resources we need can be generated and the upside of such a fundraiser is the complete eradication of extreme poverty!

Protective social protection programmes (safety nets such as VGD, VGE, elderly allowance, disability allowance) will still need to play a role, to provide continued support to those who are unable to work for a livelihood. Our 2 million elderly poorest, and 2 million disabled poorest, will need continued government assistance.

I am not an economist but I know that in many instances a single transfer of Tk.15,000 in value has transformed the life of an extremely poor family, starting an upward income trajectory. This single kick-start of capital is necessary, rather than the meager dribbling of social protection that safety net schemes provide, in order to transform one's earning capacity. Such families will of course continue to remain vulnerable to external shocks such as floods, hurricanes, cyclones and evictions. Hence, large-scale promotive programmes that give poor people a chance to establish micro-enterprises or gain employment must be combined with measures that increase resilience through diversification of income and better targeting of public services.

With these in place, Bangladesh may shine as a global example of a nation transformed. We need to mobilise our leaders and our resources for maximum impact now. The scale of our problem is already huge. Let's address it before it grows any larger. What better present can we give ourselves as a nation for our 50<sup>th</sup> birthday?

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By THOMAS JOSEPH

- ACROSS**
- 1 Jalapeño, for one stone
  - 7 Green
  - 11 Jockey
  - 12 Eddie
  - 13 Nepal
  - 14 setting
  - 15 Desk-side item
  - 16 Cover with frost
  - 17 Mob revolt
  - 18 Witty remark
  - 21 Not his
  - 22 Richard of "Becket"
  - 24 Longoria of TV
  - 25 USO patrons
  - 26 Boxing great
  - 27 Captain Ahab's ship
  - 29 Bend
  - 30 Fuzz
  - 31 Having a shiny coat
  - 32 Congo's former name
  - 34 Edible gift
  - 40 Highway exit
  - 41 Consumption
  - 42 Little devils
  - 43 Didn't go
- DOWN**
- 1 Fido's foot
  - 2 Pitcher's stat

LABOR MAJOR  
EVASDE ALAMO  
TENDS NAVAL  
HELMSMEN  
RINKS AWARE  
DETECT SPIN  
GOT ONEA  
ADEPT AKRON  
PIXTIE LEONE  
ENTER TREAT

Yesterday's answer

- 3 Machines
- 4 with CPUs
- 5 Cookout sites
- 6 Put up
- 7 Lounge
- 8 Attire
- 9 Reddish quartz
- 10 Inquire
- 11 Spotted cube
- 12 Consume
- 13 Way to serve
- 14 roast beef
- 15 Whoop it up
- 16 Baghdad
- 17 Cincos de Mayo
- 18 Stable section
- 19 Apartment sign
- 20 Cool, to jazzmen
- 22 Auction signal
- 23 Veto
- 24 Suggested
- 25 Opens a jacket
- 26 Cincos de Mayo event
- 27 Endowment
- 28 Sacred bird of Egypt
- 34 Work wk.'s end
- 35 Ewe's mate
- 36 Diamond
- 37 Singer
- 38 Starr
- 39 out (scrape by)
- 40 TV's Danson

AXYDLBAAXR is LON G FELLOW

One letter stands for another. In this sample, A is used for the three L's, X for the two O's, etc. Single letters, apostrophes, the length and formation of the words are all hints. Each day the code letters are different.

ETCIK E LIKVBJ KITOVIV CB

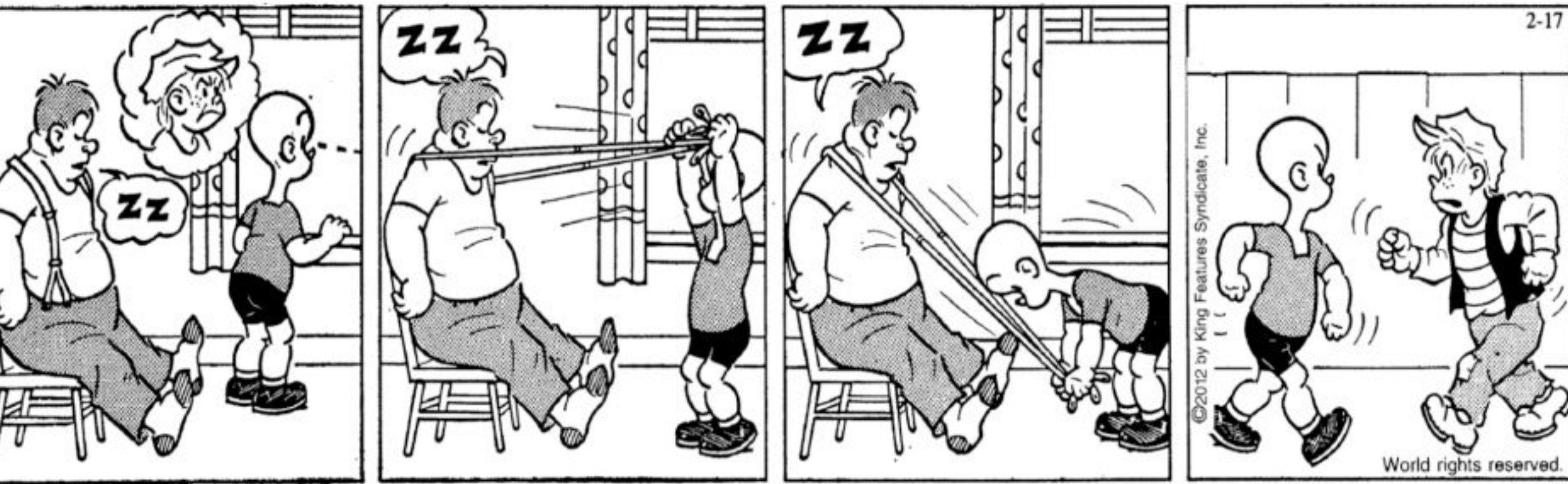
ZOMC. — JELBUIBJ YMUU

Yesterday's  
Cryptoquote: WE ALL LIVE  
UNDER THE SAME SKY,  
BUT WE DON'T ALL HAVE  
THE SAME HORIZON. --  
KONRAD ADENAUER

BEETLE BAILY



HENRY



by Mort Walker

by Don Trachte

## QUOTABLE Quotes

"Do not read, as children do, to amuse yourself, or like the ambitious, for the purpose of instruction. No, read in order to live."

Gustave Flaubert