

Safety



An industrial establishment promises foremost to pay attention to safety to surrounding community and society. TOYO ensures that loss of human life must be absolutely prevented and applies all efforts and initiatives to safety. The time and value for safety aspects are given top most priority.

“Safety” is the prime brand of TOYO. In order to boost this brand universally, we are strongly promoting many safety measures and shall actively strive to consolidate a firm safety culture.



Safety Record

We would like to present TOYO's safety record 2009–2013 as follows.

The TOYO Group aims for zero accidents as a safety management objective. Hence our target is to further reduce Lost Time Incident Rate (LTIR) and Total Recordable Incident Rate (TRIR).

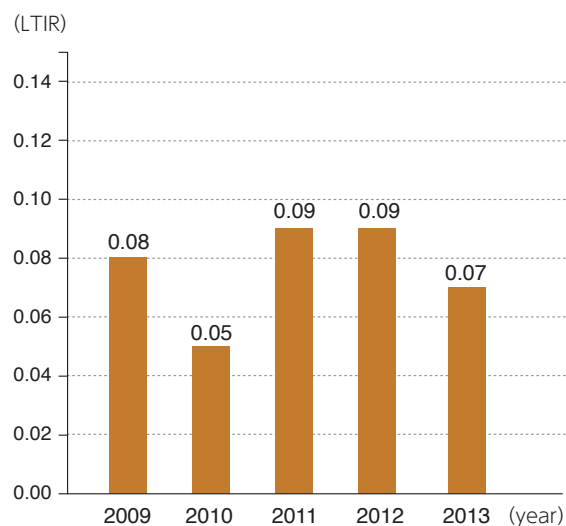
TOYO's Safety Record over the Past 5 Years (ILO base)

Year (Jan. to Dec.)	Employee- Worked Man-Day (Thousands)	Employee- Worked Man-Hours (A) (Thousands)	Number of Incident					LTI Rate (Note 1)	Total Recordable Incident Rate (Note 2)
			Fatalities	Lost Time Incidents	Medical Treatment (No Lost Time)	LTI Total (B)	Recordable (C)		
2009	16,769	164,344	4	9	156	13	169	0.08	1.03
2010	12,012	117,295	1	5	56	6	62	0.05	0.53
2011	8,521	80,783	1	6	12	7	19	0.09	0.24
2012	12,739	120,760	3	8	16	11	27	0.09	0.22
2013	10,790	105,164	0	7	16	7	23	0.07	0.22

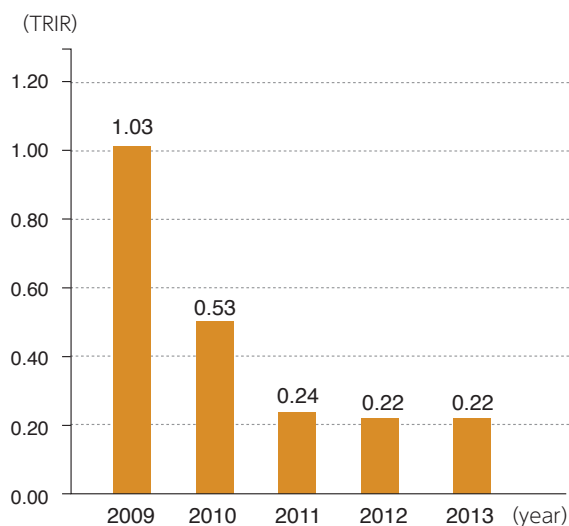
Note 1: Lost Time Incident Rate (LTIR) = (B) × 1,000,000 / (A)

Note 2: Total Recordable Incident Rate (TRIR) = (C) × 1,000,000 / (A)

Lost Time Incident Rate (LTIR)



Total Recordable Incident Rate (TRIR)



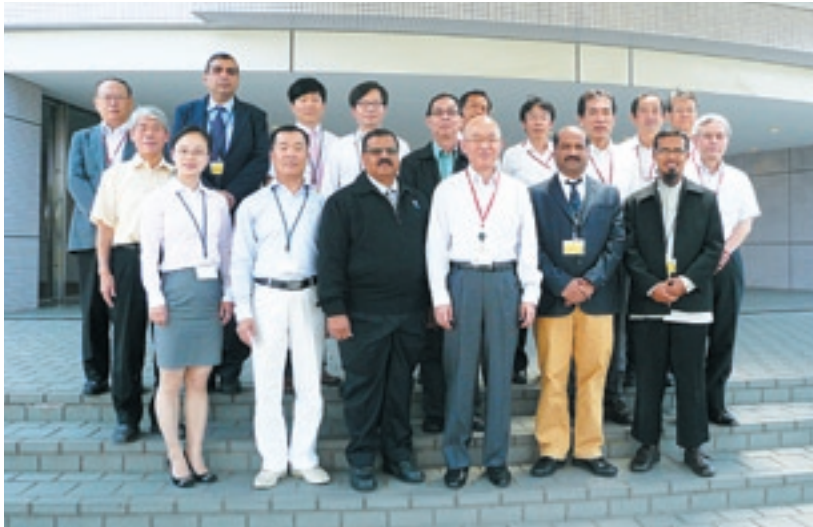


Safety Culture in TOYO Group

■ TOYO Group Safety Meeting

TOYO is aiming to provide uniform level safety management irrespective of countries and regions where it operates.

In order to realize this situation, it is definitely essential to unify group companies with management leadership and promotion of safety culture within all group members supported by preparation of standard documents and its compliance. Based on this principled philosophy, the designated heads of HSSE of TOYO group companies conduct periodical meetings at pre-decided locations, exchange experience and ideas, and maintain close communication for improvement of safety management activities.



TOYO Group HSSE Meeting in Japan

Following TOYO group companies participated.

- Toyo-Japan
- Toyo-Korea
- Toyo-China
- Toyo-Malaysia
- Toyo-India
- IKPT (Indonesia)

Safety

■ Safety Campaign

TOYO holds “Safety Campaign” at all its group companies and construction sites for promoting safety awareness for one month starting July 1 every year and various safety programs take place during this period.

Major Campaign Program

- Message of CEO and top management of respective TOYO group company
- Display of poster, banner, flag
- Training of personal protection equipment
- Introduction of safety activities in relation with accident at construction sites
- Lecture on safe/unsafe working
- Video show in safety awareness
- Morning radio exercise
- Safety Award



Training of safety belt/harness



Mass safety meeting during campaign



Rescue training



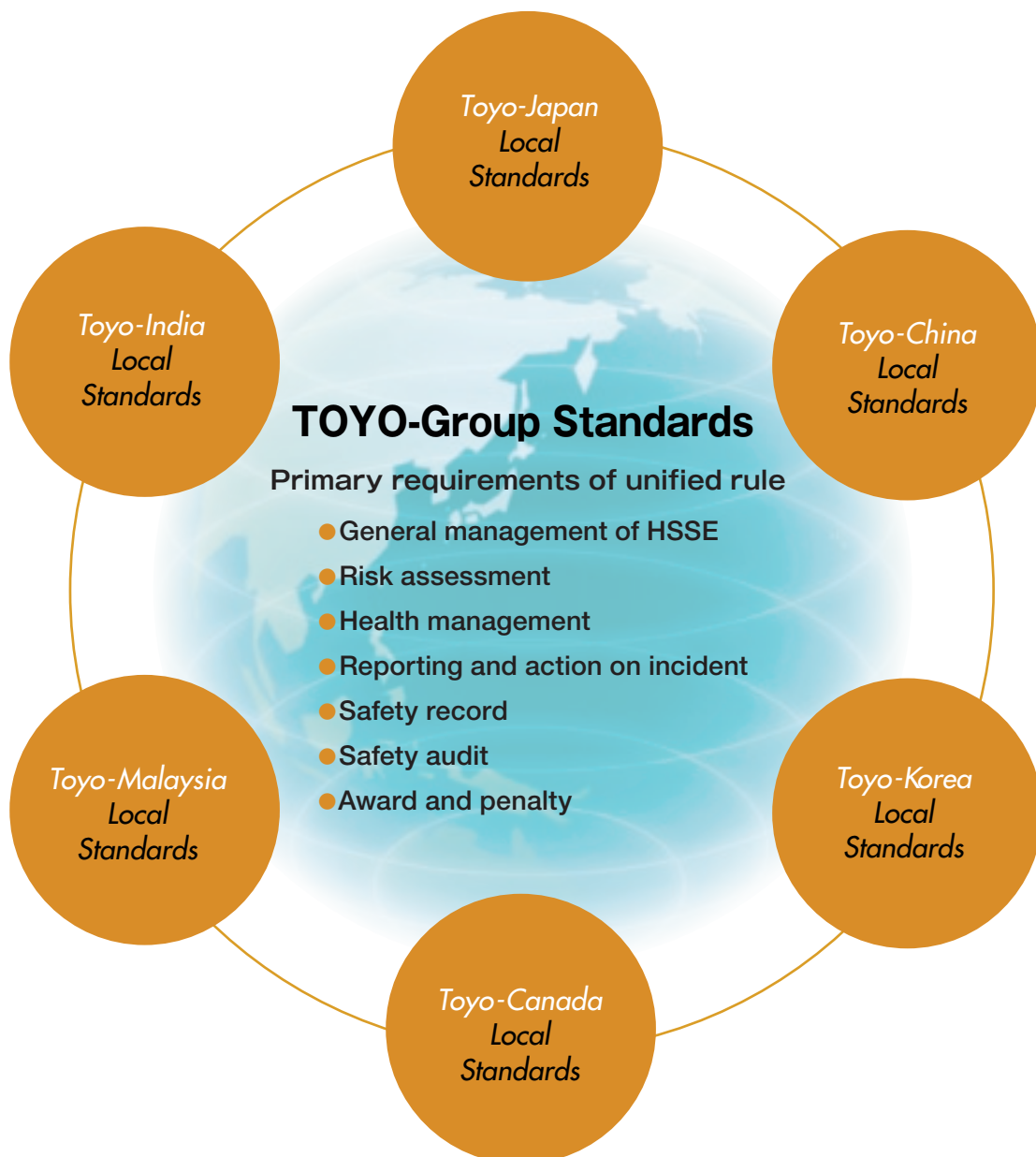
Traffic safety campaign



Safety Management Rules

■ TOYO-Group Standards

TOYO establishes TOYO-Group Standards to ensure that safety management is implemented at the same level irrespective of country and region throughout TOYO group companies.





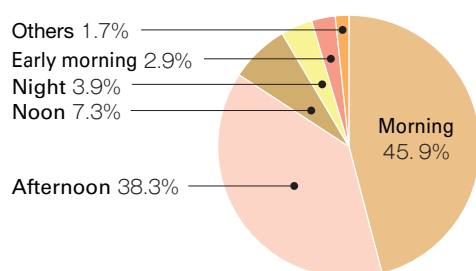
Analysis of Near-miss Incidents (Hiyari-Hatto)

Hiyari-Hatto or “near-miss” is an incident which was prevented just before its actual occurrence to avoid an accident. It is said that frequent near-miss indicates impending serious accident.

The Hiyari-Hatto data collection and management system, developed by TOYO, has been employed since January 2008. Hiyari-Hatto data at construction sites is collected and analyzed at the Head Office, then fed back to construction sites. In the following report, 5,012 incidents from 2008 to 2013 are analyzed.

Summary of Analysis Results

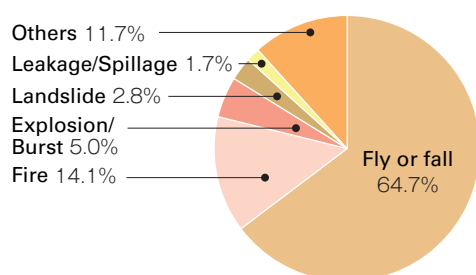
1 Time of Occurrence



Countermeasures for higher occurrence during morning

- Be sure to implement morning meeting, KYK (Note 1) and TBM (Note 2) and confirm work procedures before start of morning work
- Let all workers see around the work places to identify the conditions before work commences.
- By conducting alcohol check, avoid unsafe action

2 Root Cause (Material)

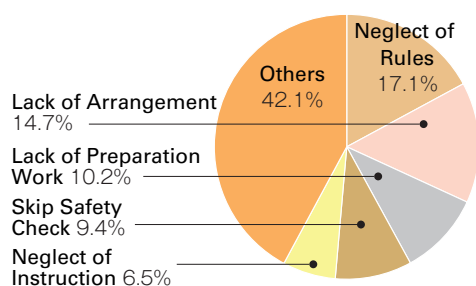


Countermeasures for higher occurrence

“Fly and Drop” accidents

- Prohibit up-down operation
- Don't leave tools and materials on floor of scaffolding
- While working at high elevations, secure tools with a rope to prevent falling down

3 Why Accident Was about to Happen (Human)



Countermeasures for preventive measure failures

- Implement one-person KY (Note 3) using KY card before starting work
- Training referring to rule and operation procedure
- After finishing day's work, encourage clean-up and house-keeping, to keep everything in order for next day

(Note 1) KYK stands for “Kiken Yochi Katsudou” (risk prediction activity), or activities for predicting work-related risks before the work is started.

(Note 2) TBM stands for “Tool Box Meeting” or activity to briefly discuss the contents, methods, arrangements, and problems of the work of the day before starting the work at the workplace.

(Note 3) One-person KY means KYK that each worker carries out prior to starting work using the “KY cards” (self-questioning cards for risk prediction).



Lessons Learned from Accidents

Among some incidents occurred at TOYO Group construction site in the past, selected cases regarding “falling down” and “get trapped between” are reviewed below.

■ Falling Down

Situation

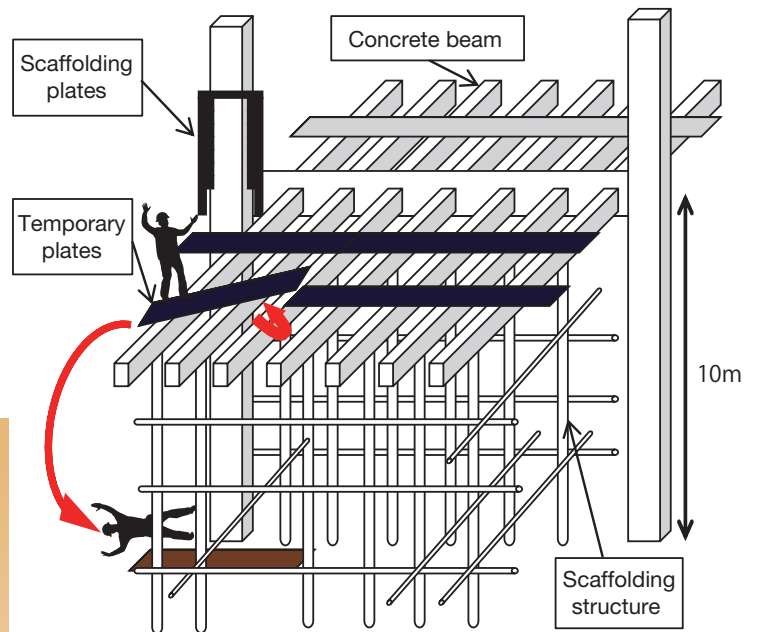
During erection of cooling tower, the incident occurred at elevation of 10m above grade level. While moving the scaffolding plank to adjacent floor, the worker fell down from temporary plates along with scaffolding plank, hitting his body to the ground. The medical examination showed dislocation of both of his wrists.

Causes

- Harness was used but it was single yard run and hook was detached for moving ahead.
- Walking surface was not uniform level (work place level and worker feet level were not uniform and was not checked.)

Countermeasures

- Safety re-orientation for working at high elevation place.
- Instruction about using of correct harness
- Inspection of all scaffolding and improve unsafe conditions
- Implementation of basic rules: rearrange, clean, tidy work place
- Sharing incident report including countermeasures for prevention of similar accidents



■ “Get Trapped Between” Accident

Situation

One worker was trying to move grating (square grid metal cover) in the horizontal direction for fit-up operation together with another two workers, during which his little finger got trapped between the beam and the grating and resulted in wound.

Causes

- Improper operation procedure
- Lack of communication
(not checking work start)
- Lack of enforcing TBM/KYK

Countermeasures

- Routine training about work sequence and procedure
- Execution of TBM/KYK continuously
- Intensive communication before and during operation
- Elimination unsafe behavior
- Implementation of basic rules: rearrange, clean, tidy work place
- Sharing incident report including countermeasures for prevention of similar accidents



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