

# Larkin Safety Minute

Helping supervisors do better safety meetings:

*Larkin Safety Minute*

World's best safety research

Illustrated for supervisors' safety talks



Dr TJ Larkin & Sandar Larkin  
Larkin Communication

**LARKIN SAFETY MINUTE #4**  
The High Risk Employee

**Some Employees are Much More Dangerous Than Others**

3% of employees account for 22% of accidents.

7% of employees account for 46% of OSHA recordable injuries.

These high-risk employees are about 10 times more likely to be involved in an accident than an average employee.

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# *Larkin Safety Minute*

Giving Supervisors What They Need  
To Do Good Safety Talks

## **Sample** **The High Risk Employee**



# LARKIN SAFETY MINUTE #4

## The High Risk Employee

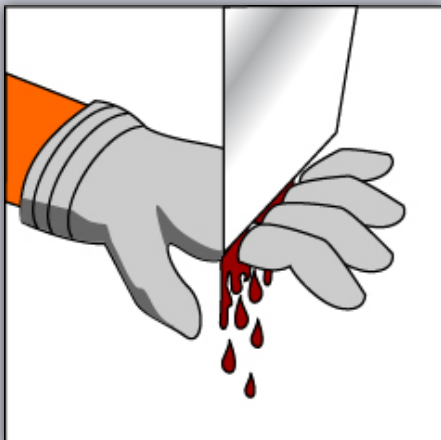
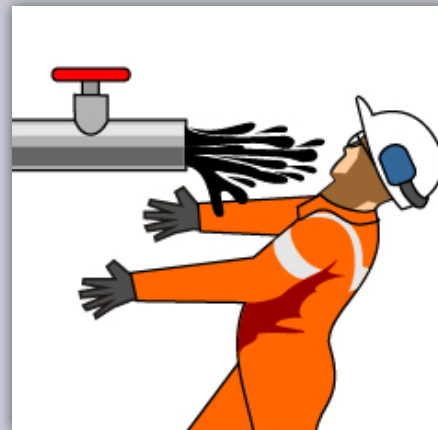
### Some Employees are Much More Dangerous Than Others



3% of employees account for 22% of accidents.



7% of employees account for 46% of OSHA recordable injuries.



These high-risk employees are about 10 times more likely to be involved in an accident than an average employee.

The High Risk Employee

# Talking Points

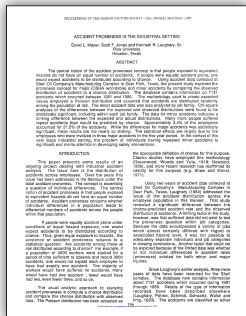
We plan carefully for high risk work.

Do plan as carefully for high risk employees?

Do we know which of our employees is high risk?

Do we assign lower risk work to these higher risk employees?

Supervisors! When high risk employees are working—are you careful about keeping your eye on them...



Researchers looked at 5 years of accident data at Shell's Manufacturing Complex at Deer Park, Texas.

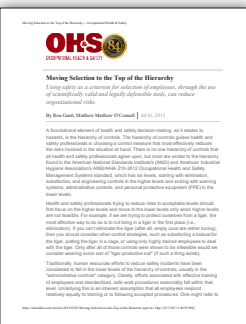
Their data included 7,131 accidents (1981 to 1986).

- 392 major injuries
- 6,382 minor injuries
- remaining accidents had no injuries

Major conclusion: 3.4% of employees accounted for 21.5% of accidents.

Mayer, David L.; Scott F. Jones and Kenneth R. Laughery, "Accident Proneness in the Industrial Setting," *Human Factors and Ergonomics Society Annual Meeting*, vol. 31, no. 196, 1987, p. 196-199.

<https://journals.sagepub.com/doi/abs/10.1177/154193128703100213>



Researchers looked at 400 workers in 3 different organizations: oil & gas, paper products manufacturing, and construction materials manufacturing over a 36-month period. During the 3 years, there were 59 OSHA recordable injuries.

Major conclusion: 7% of employees "accounted for almost half (46%) of all OSHA recordable injuries."

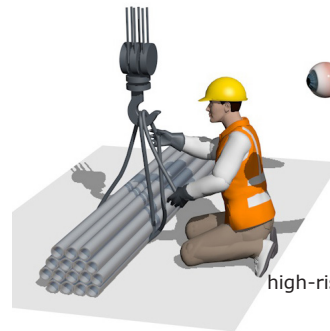
Gantt, Ron and Matthew O'Connell: "Moving Selection to the Top of the Hierarchy," *OH&S, Occupational Health & Safety*, July 1, 2013.

<https://ohsonline.com/articles/2013/07/01/moving-selection-to-the-top-of-the-hierarchy.aspx>

normal employee



supervisor



high-risk employee

# *Larkin Safety Minute*

Giving Supervisors What They Need  
To Do Good Safety Talks

## **Sample**

**Overriding Safety Devices is a Killer**



# LARKIN SAFETY MINUTE #7

## Overriding Safety Devices is a Killer

Employees intentionally disable one-third of all safety devices installed on machinery.

### EXAMPLE

#### *Skid-Loader Incident*

Employee was climbing into a running skid-steer loader (Bobcat).

He pressed his hand onto the seat as he climbed in.

He slipped and his foot accidentally pressed the foot pedal raising the lift arms.

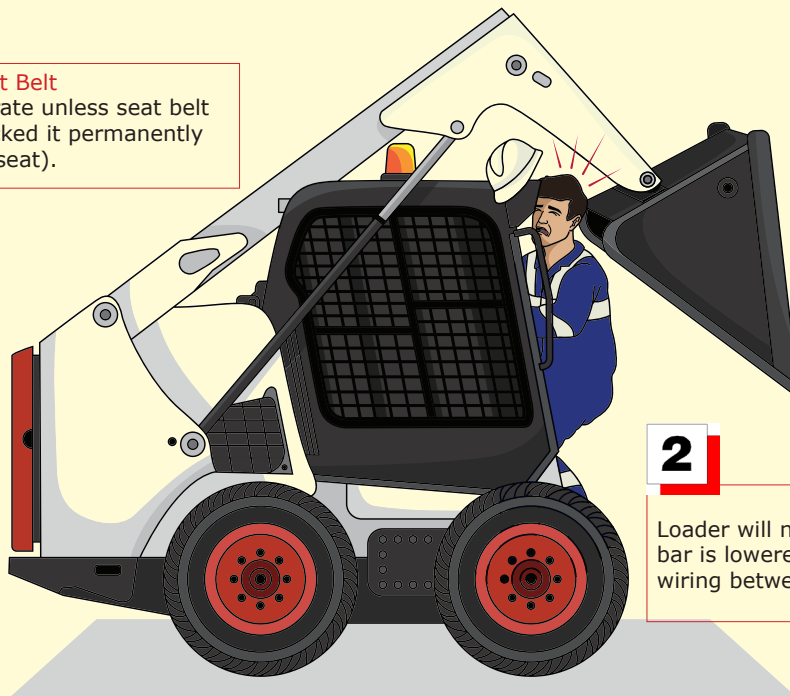
The bucket went up and pinned his head against the cage front edge.

### He Overrode Three Safety Devices

**1**

#### Seat Belt

Loader will not operate unless seat belt is buckled. (He buckled it permanently behind the driver's seat).



**2**

#### Restraint Bar

Loader will not operate unless restraint bar is lowered. (He disconnected the wiring between the bar and the ignition).

**3**

#### Driver Must Be Seated to Operate

Loader will not operate unless driver is seated. "Seated" means 35 lbs. of pressure on the seat. (Entering, he didn't use the hand grips. Instead, he supported his weight by pressing his hand on the seat).

Overriding Safety Devices is a Killer

# Talking Points

Research shows 1/3<sup>rd</sup> of all machinery safety devices are disconnected by employees.

Are we doing that?

Let's talk about the safety devices in our area that we know are bypassed.

If we bypassed these safety devices for a good reason, can we get the machinery modified to better meet our needs?

If we bypassed for no good reason, let's remove the bypass and get the safety device working properly again before one of gets killed.



German-based project team studied intentional overrides of safety devices in machinery.

The team examined 200 pieces of machinery.

The team collected data from a questionnaire circulated to 1,000 occupational safety experts.

The results were around 1/3 of all safety devices on machines were disabled.

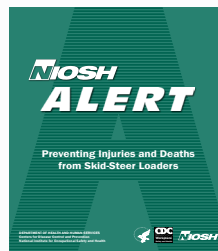
This report is available only in German.

IFA, Manipulation von Schutzvorrichtungen an Maschinen (Report) 2005

<https://www.dguv.de/ifa/publikationen/reports-download/bgia-reports-2005-bis-2006/report-manipulation-von-schutzvorrichtungen/index.jsp>

A website in English, "Stop-Defeating" discusses many of the issues in this German report:

<https://stop-defeating.org/en/>



Report by NIOSH studied skid-steer loader fatalities.

Using research from three safety organizations, the researchers found around 8 fatalities each year (USA) from skid-steer incidents.

CDC: "NIOSH Alert: Preventing Injuries and Deaths from Skid-Steer Loaders," DHHS (NIOSH) Publication Number, 2011-128, December 2010.

<https://www.cdc.gov/niosh/docs/98-117/default.html#:~:text=CF01%E2%80%9494During%20the%20period%201992,the%20lift%20arms%20and%20frame.>



The skid-steer loader incident described on page 1 is not a fatality, but a near miss.

The details are from:

WorkSafe NB: Hazard Alert: "Worker Injured When Bypassing Safety Devices," October 2014.

[https://www.travailsecuritairenb.ca/media/1573/ha\\_worker-injured-when-bypassing-safety-devices-1.pdf](https://www.travailsecuritairenb.ca/media/1573/ha_worker-injured-when-bypassing-safety-devices-1.pdf)

# *Larkin Safety Minute*

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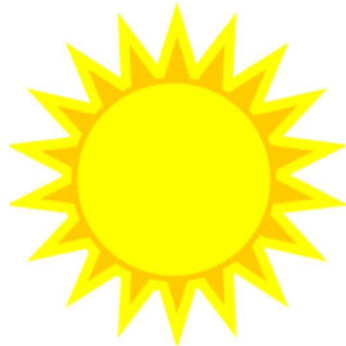
## **Sample** **Too Stupid to Know It**



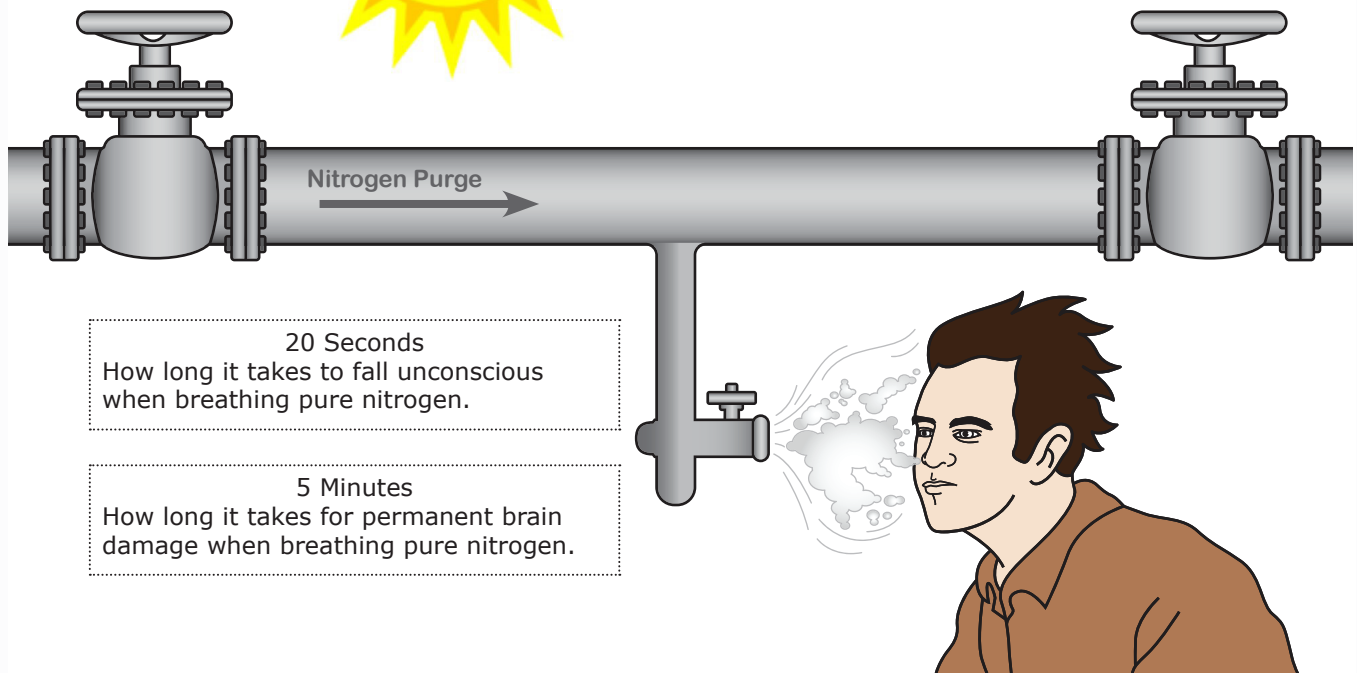


# LARKIN SAFETY MINUTE #15

## Too Stupid to Know It



On a hot summer day, this employee found a good way to cool down.



### The Research

More than 20 years of research into incompetence shows:

- Bottom 10% of performers think they are in the top 40%.
- They are simply too incompetent to know how incompetent they really are.
- Social scientists call this the: "Dunning-Kruger Effect"

Research includes:

doctors/nurses	engineers
lab technicians	psychologists
computer programmers	college students

### The Solution

The bottom performers do not know they are at the bottom.

They think they are simply doing the job in a "different" way.

Often they think their way is actually, "better" "smarter" "faster" "easier."

The only solution is to confront them directly with facts showing them they are not "different" they are "dangerous."



Too Stupid to Know It

# Talking Points

Are we being too subtle?

Are we trying too hard to avoid embarrassing anyone?

Are we avoiding conversations we know need to happen?

This research shows:

- average performers know they are average
- slightly above and slightly below average performers know roughly where they are at
- BUT worst performers (bottom 10%) have no idea they are that bad
- they know too little to know how bad they are

Let's do the hard conversations before someone gets hurt.

CHAPTER FIVE

**THE DUNNING-KRUGER EFFECT: ON BEING IGNORANT OF ONE'S OWN IGNORANCE**

David Dunning

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© 2011 American Psychological Association

Dunning, David: "The Dunning-Kruger Effect: On Being Ignorant of One's Own Ignorance," *Advances in Experimental Psychology*, vol. 44, 2011, p. 247-296.  
<https://www.sciencedirect.com/science/article/pii/B9780123855220000056>

Dunning found:

- average and near average performers know they are near average
- it's at the extremes (top and bottom) where people are wrong about their performance levels
- top performers DO NOT KNOW they are top performers - they think they are slightly above average
- bottom performers DO NOT KNOW they are bottom performers - they think they are near the top (the bottom 10% think they are in the top 40% of performers)
- this is why the conversation with bottom performers must be very blunt:
  - 1<sup>st</sup>, they need to understand they are bottom performers
  - 2<sup>nd</sup>, they need to learn the correct way to do the work

# *Larkin Safety Minute*

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## **Sample** **Not Sleeping Doubles Errors**



# LARKIN SAFETY MINUTE #25

## Not Sleeping Doubles Errors



### Losing One Night's Sleep Doubles Error Rate

Researchers studied how well people completed a multi-step paper/pencil task.

With normal sleep: *15% errors*

No sleep the night before: *30% errors*

Without sleep, people:

- took longer to do a task
- repeated some steps over and over
- skipped some essential steps
- after an interruption, took a long time to return to the right step in the task

## Not Sleeping Doubles Errors

### Talking Points

**Not sleeping is dangerous.**

**Everyone needs 7 to 8 hours a night to perform their best. Everyone.**

**When people don't sleep—they make more mistakes.**

**If employees are tired, supervisors need to assign them to lower-risk work; or supervisors need to send others to double check their work.**

Canada & Australia allow pilots to nap in cockpit

Following extensive sleep research, these countries allow one of the two pilots to take a 40-minute nap in the cockpit.

Not sleeping same as being drunk

17 hours without sleep = same impairment as 0.05% blood alcohol level.

Most night shift workers sleep on the job

More than half of night shift workers report that they nod off or fall asleep at least once per week when working the night shift.

Sleep-deprived doctors double their errors

Doctors sleeping only 2 or 3 hours the night before, double their errors reading electrocardiographic strip results.

Most dangerous time for errors:  
4 a.m. to 6 a.m.

Human's biological time clock (circadian rhythm) is at its slowest just before sun rise; especially dangerous if already sleep deprived.

Everyone's performance improves with 7 to 8 hours sleep

While true that some people perform better than others when sleep deprived—everyone performs *better* with 7 to 8 hours sleep.

# Building a *Larkin Safety Minute*

## 1. We Study Safety Research—Looking for Results Relevant for Supervisors



Risk: Health, Safety & Environment	Accident Analysis and Prevention	Human Factors	Journal of Safety Research	Risk Analysis: An International Journal
Journal of Occupational Health Psychology	Journal of Health Communication	International Journal of Environment and Health	Health, Risk & Society	Journal of Accident Investigation
Implementation Science	Fire Safety Journal	Annals of Occupational Hygiene	International Journal of Workplace Health Management	New Solutions
EHS Journal	Reviews of Human Factors and Ergonomics	Risk Management	Work and Stress	African Newsletter on Occupational Health and Safety
Proceedings of the Human Factors & Ergonomics Society Annual Meeting	Indian Journal of Occupational and Environmental Medicine	Scandinavian Journal of Work, Environment, and Health	Journal of Health, Safety and Environment	Risk, Decision and Policy

## 2. Condense Results Into One Useful Conclusion



*Employees intentionally override one-third of all safety devices installed on manufacturing machinery.*

## 3. Illustrate the Conclusion In a Easy-to-Talk-About Design

**LARKIN SAFETY MINUTE #7**  
Overriding Safety Devices is a Killer

Employees intentionally disable one-third of all safety devices installed on machinery.

**DANGER!**  
Employee was disabling the warning and then faster (Bypass). He engaged and he had accidentally pushed the foot pedal using the lift arms. The forklift went up and overran the edge against the wall.

**He Overrides Three Safety Devices**

1. Disables the warning horn.
2. Disables the lift arm interlock.
3. Disables the lift arm safety device.

## 4. Talking Point and Links to Research on a Second Page

**LARKIN SAFETY MINUTE #7 - Background Information**  
Overriding Safety Devices is a Killer

**Talking Points**  
Research shows 1/3rd of all machinery safety devices are disconnected by employees.

Are we doing that?  
Let's talk about the safety devices in our area that we know are bypassed.

If we bypassed these safety devices for a good reason, can we get the machinery modified to better meet our needs?  
If we bypassed for no good reason, let's remove the bypass and get the safety device working properly again before one of gets killed.

# Communication Research Behind the Design

## Front Page

**LARKIN SAFETY MINUTE #28**  
Complex Procedures Can Hurt Safety

**What Does This Graph Say?**  
At the beginning, when you add length and details to a procedure—errors go down. As you add more details—errors increase—from medium to high—

**Medical Errors**

Procedure Complexity	Medical Errors (Estimated)
Low Complexity	16
Medium Complexity	8
High Complexity	18

**Procedure Complexity**  
(Includes Procedure's Length and Number of Detailed Steps)

**Study Details:**  
632 nurses and doctors; 3 hospitals, 47 medical units (e.g. surgery, anesthesiology, cardiology, orthopedics)  
Medical errors were mistakes that injured patients (e.g. wrong medication, patient falls from bed because railing not raised, inaccurate labeling of test results).

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Point Size  
large enough to read if projected onto a screen

Line Length  
3½ inch (9 centimeters) best length for reading ease and accuracy

Color  
increases time spent on page by 21%

Picture-Based  
increases attention, comprehension, and recall (improvement over text alone is between 100% and 600%)

Complexity  
writing is grade level 8 (50% of adults read at this level)

## Back Page

**LARKIN SAFETY MINUTE #28 - Background Information**  
Complex Procedures Can Hurt Safety

**Talking Points**

This research says...  
When employees have no written procedures - giving them some helps, accidents go down.  
But, as the procedures' length and details increase—safety gets worse, accidents actually go up.  
This research was done with doctors and nurses and if it applies in industry, then making our procedures more complex could be hurting safety.  
Can we work with management to reduce the size and complexity of our procedures?  
And, if we do, will that decrease accidents?

**Larkin Interpretation of this Research**  
When employees have no procedures, they make many mistakes. However, as the procedures become excessively long and overly complicated procedures, employees are most likely to get injured. Employees not using the procedures has the same effect as employees not having the procedures. With complex procedures, mistakes return to the same rate as before the procedures existed.

**Why do procedures get more complex?**  
The study found a typical reaction to a serious medical error was writing the procedure, adding length and detail. Over time, these well-intended changes increased the procedure's complexity and led to an unexpected increase in medical errors.

**Larkin Suggested Fix**  
The best fix is to the problem of long and overly complicated procedures. Our solution is Procedure Snapshots.  
These are one-page color pages for your meeting procedures. Procedure Snapshots do not replace your procedures, they sit on top of your meeting procedures. Procedure Snapshots highlight the parts of a procedure employees are most likely to get injured. The sample on the right is a Procedure Snapshot for "Line Break". Procedure Snapshot brochure and more samples can be downloaded from our website: [www.Larkin.Biz](http://www.Larkin.Biz)

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Designed for Discussion  
Your frontline employees don't learn by reading—they learn by talking.  
Supervisors can project this *Safety Minute* onto a screen, or hand it out, and talk about it.  
This communication is specifically designed for "talking" more than "reading."  
That's why it works in a safety meeting.

Actions  
what they can do to fix the problem

Original Research  
links to open the research papers

Background Info  
helps supervisor lead discussion and answer questions

Talking Points  
helps supervisor get conversation started



# What to Do Next

## Try Samples With Your Supervisors

We know *Safety Minutes* work, but try them yourself.



Feel free to extract the five sample *Safety Minutes* from this brochure. Or, email us, and we'll give you five separate PDFs.

## Suggest a Topic

What is your #1 safety concern?

Let us know, we'll try making a *Safety Minute* on that topic.

*"Start-up is Dangerous"* is a subscriber suggestion.



## Request Price

\$ € ¥ £

Email TJ & Sandar and ask for the price table.

- monthly subscription fee based on the number of employees in your company
- Four *Larkin Safety Minutes* each month (one a week); pay monthly
- no contracts, cancel at any time
- *Larkin Safety Minutes* available in five languages: English, (additional fee for: Arabic, Spanish, Hindi, and Portuguese)

## Call US

Want to talk?  
Give us a call.

Let's talk about your safety communication:

Communicating major incidents

Communicating procedures

Tool box talks

Communicating SMS (safety management systems)

Improving: Permits, JHAs, & risk documents

If you wish, make it a conference call.

## SUBSCRIBE

Request a subscription and start receiving a *Larkin Safety Minute* every Monday



# The Larkins

Since 1985, we have been helping large companies improve communication with employees



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New York City  
Based in NYC since 1990



Sandar

Originally from Burma  
Long Term Credit Bank  
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Our Book:

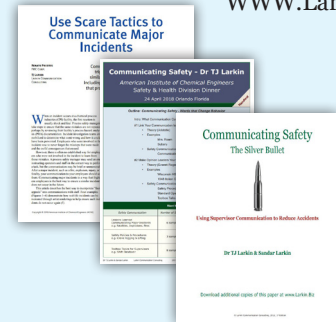
*Communicating Change*  
MCGRAW-HILL



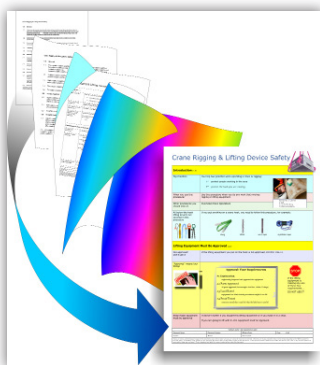
Our paper:

*Reaching and Changing  
Frontline Employees*  
HARVARD BUSINESS REVIEW

Download papers from our website:  
[WWW.Larkin.Biz](http://WWW.Larkin.Biz)



## What We Do



ReWrite Your  
Communication



Implementation

Come to your company for 2  
weeks.

Join your team.

Help communicate a specific  
change.



Presentations



Workshop for Your  
Leadership Team

**END**