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# WRITING PORTFOLIO

BY KATRINA BALMACEDA UY

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## 1 – NEWS FEATURE

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Article based on a talk during the 2015 National Dementia Congress in Australia.

## 2 – PERSONALITY PROFILE

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Article about hang glider Jonny Durand. This was written for *Jetgala* magazine and conforms to the publication's writing style, which is straightforward, as its readers comprise UHNWI with presumably limited leisure reading time.

## 3 – ORGANISATIONAL PROFILE

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Article on Flying Eye Hospital, also written for *Jetgala* magazine.

## 4 – TECHNICAL ARTICLE

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The topic, hypersonic aircraft, is highly technical but is presented in a 'friendlier' tone. That is to say, the readers may not be pilots, but they are aviation enthusiasts and understand some jargon.

## 5 – LITERARY ESSAY

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Creative non-fiction. This was published in a Philippine newspaper, and thus uses American English spelling (e.g., 'favorite' instead 'favourite').

## 6 – CASE STUDY

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This was created for an Australian engineering firm based on very limited information. I conducted archival Internet research and a brief interview to get the data. Note that this has been slightly edited by the company, and may contain certain grammatical decisions that I do not agree with.

## OTHER SAMPLES AVAILABLE ON REQUEST

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I have written video scripts, SlideShare text, academic papers for MA courses, thought leadership blogs for CEOs, book previews, news stories, technical real estate analyses, and marketing emails. I can provide such samples upon request.

Article based on Kate Swaffer's talk at the February 2015 National Dementia Congress in Australia.

Written by Katrina A. Balmaceda

Imagine being told, at the age of 49, to go home and “get your affairs in order” — common doctor's speak for “prepare to die”. Many people would say the only choice you'd have would be to live the rest of your days in depression or make the best out of the time you have left.

But if Kate Swaffer could recreate the day six years ago when her neurologist confirmed that she had younger onset dementia, she would have preferred not to be told how to prepare to die. She would have liked to learn how she could live positively with the disease — a message she has been spreading through her blog and online support groups, and which she shared to an audience of healthcare professionals at the recent National Dementia Congress organised by Informa Australia.

Swaffer calls for a change of mindset not only among healthcare professionals and researchers dealing with dementia, but also among the families of those living with the disease, and the people experiencing it themselves. Upon diagnosis, she — and hundreds of other people she had talked to — were told to “give up work, to give up study, to get my end-of-life affairs in order, to get acquainted with age care, and to go home and live for the time I had left”. This “prescribed disengagement”, as she calls it, creates a cycle of learned helplessness as patients give up what they had always loved doing and let their families take over their tasks for them.

She recalls, for instance, having attended forums for people living with dementia and for their families. The families would speak about the condition during the workshop sessions while those experiencing the disease would only speak — albeit fluently — during the breaks. Asked why, they would say: “I can't be bothered; I just get talked over.”

It's this conversation about them, but without them that frustrates people living with dementia. They are the best resource speakers about their own condition, and yet they're rarely included in international conversations about dealing with the disease. Popular stigma expects them to not be able to function well. Swaffer cites, for instance, the stereotype of them taking their clothes off in elevators or sitting in a corner, dribbling down the front of their shirts.

But slowly, they are defying such clichés. After being diagnosed with younger onset dementia, Swaffer went on to complete three tertiary-level degrees and a Master of Science degree in Dementia Care. She has convinced her neurophysiotherapist in Adelaide to give her a proper rehabilitation programme, partly done at his clinic and partly at a brain injury unit. Once every fortnight, she undergoes speech pathology — a service strikingly absent in most dementia care plans in Australia despite speech impairment being a common symptom of the disease.

There are other non-pharmacological interventions that people living with dementia can practice either to slow down the progression of the disease or to live positively with it. Emerging research focuses on exercise and a change in diet, while the field of neuroplasticity suggests that cognitive activities like studying can help open new neurological pathways in the brain. Swaffer practices transcendental meditation three times a day; some researchers believe 20 minutes of this equates to two hours of deep sleep. To relieve pain that she experiences from other chronic illnesses, she uses the techniques of self-hypnosis and mindfulness. And even though she no longer remembers how to play the piano, she still practices her scales twice a day “for the sheer pleasure” of sitting at the instrument she used to enjoy so much.

Laughter is essential, too. Swaffer's husband thinks of having dementia in the family as a threesome — two's company, three's a crowd. The couple have even given it a human name, albeit not a very flattering one — Larry, from the *Three Stooges*. In fact, Swaffer plans to write a comedy on the disease based on the slapstick trio — a stark opposite to most movies that emphasise suffering.

This is not to deny the bad moments, of course. There are days when she can't remember what to do in the shower. Cooking and traveling by herself place her at great risk. These are things that family and friends must deal with — and unfortunately, many don't know how, and consequently disappear from the lives of those who have the disease.

This could be why Swaffer's list of "20 things not to say to a person with dementia" has spread throughout social media. Or why the mass media is learning not to refer to them as 'sufferers' and 'victims' who are 'afflicted' and 'demented'. Language is a powerful tool that can trigger negativity and isolation, but it can also empower an individual and serve as a bridge among healthcare professionals, researchers, the people living with dementia, and their loved ones. It can break the stigma of the disease and lead to recognition of the symptoms as disabilities, thus opening the door for better care and protection against discrimination at work.

In 2014, Alzheimer's Disease International claimed that every four seconds, someone in the world is being diagnosed with dementia. It's every six minutes in Australia. Of the more than 332,000 people living with the disease in Australia, about 25,000 of them have younger onset dementia. It is not an immediate cure they demand — as with many forms of cancer, none has been found — but improved healthcare tailored to their symptoms and situations. Not just the typical bingo and art classes — but if you love bingo and art, then hey, go for it — but engaging activities that give them a sense of purpose. They ask that local and international communities continue to show concern and support not only through holding dialogues about them, but more importantly, with them.

[958 words]

*[This article was not submitted for publication and is included here for portfolio purposes only.]*  
logues about them, but more importantly, with them.

JONNY DURAND

by Katrina Balmaceda



# SKY WALKER

A YOUNG PILOT FROM DOWN UNDER  
SURFS TO THE TOP RANKS OF HIS SPORT



## “HANG GLIDING IS A SPORT WHERE YOU NEED TO ACCESS YOUR SUBCONSCIOUS NATURALLY”

TO TOURISTS, MOUNT CUCCO IN SIGILLO TOWN, Italy, is just a good-looking pleasure park. But to a special fraternity of flyers, it is a battlefield. This July, the world's top hang gliding pilots will flock to Mount Cucco to win the Fédération Aéronautique Internationale (FAI) championship title. Australian pilot Jonny Durand will be one of them.

Much is at stake for Durand who, at 30 years, is young for a professional hang glider — especially young for a world number one. Durand claimed the top spot last year, no easy feat as rankings are updated each month. This year he ranks second. This constant threat to his title makes the prospect of a 2011 FAI championship all the more intense.

Monthly competition aside, hang gliding may well be one of the most challenging sports around. One glides at the mercy of the weather. Draughts, currents and wind shear can compromise flight, as will rain and low visibility. If the wind is too weak or the rain pours, a scheduled flight may not happen at all.

Aside from practice, Durand stays on top of his game by relaxing. This, he believes, is the best way to prepare for any

task. “Hang gliding is a sport where you need to access your subconscious naturally,” he explains. Perhaps there are other forces at play: “I have some superstitions about clothes so I will choose the right shorts sometimes when I need extra help.” But you can be sure his skill comes from plenty of experience, too.

Durand entered the world of hang gliding in September 1995 at just 15 years of age. He credits this to parental influence: “My father was already hang gliding and I had spent the last five years travelling around, helping him out in competitions. I just had to wait until I was big enough to lift a hang glider off the ground.” Having joined his first competition in 1997 and gained his first open class win in 2000 at the Australian NSW State Titles, it looked like the top place was a goal within reach. >>



| In 2010, Durand won 9 out of 13 competitions he joined and placed second in two of them

## THE MORNING GLORY CLOUD IS THE LITMUS TEST FOR CHAMPION GLIDER PILOTS AND DESCRIBED AS A TSUNAMI IN THE SKY

>> But his biggest challenge came nearly a decade later. Through a partnership with Red Bull, he got the chance to ride the apex of many a hang glider's dreams — the Morning Glory cloud. Considered the litmus test for champion glider pilots, this rare phenomenon is preceded by a sudden strong gust of wind and wind shear. It rolls across the sky at 60 km/h at an altitude of 100 to 200 metres above the ground — much lower than typical clouds.

The Morning Glory can stretch 1,000 kilometres long and two kilometres high. The air amid the cloud is turbulent, while a strong vertical movement at the front of the cloud pushes air upwards. It is often described as a tsunami in the sky. The sight is spectacular, but the risks are real. “The Morning Glory has many dangers,

from crocodiles on the ground to extreme turbulence and down draughts in the sky. The fact that so many unknown dangers can happen is what makes the Morning Glory so dangerous,” says Durand.

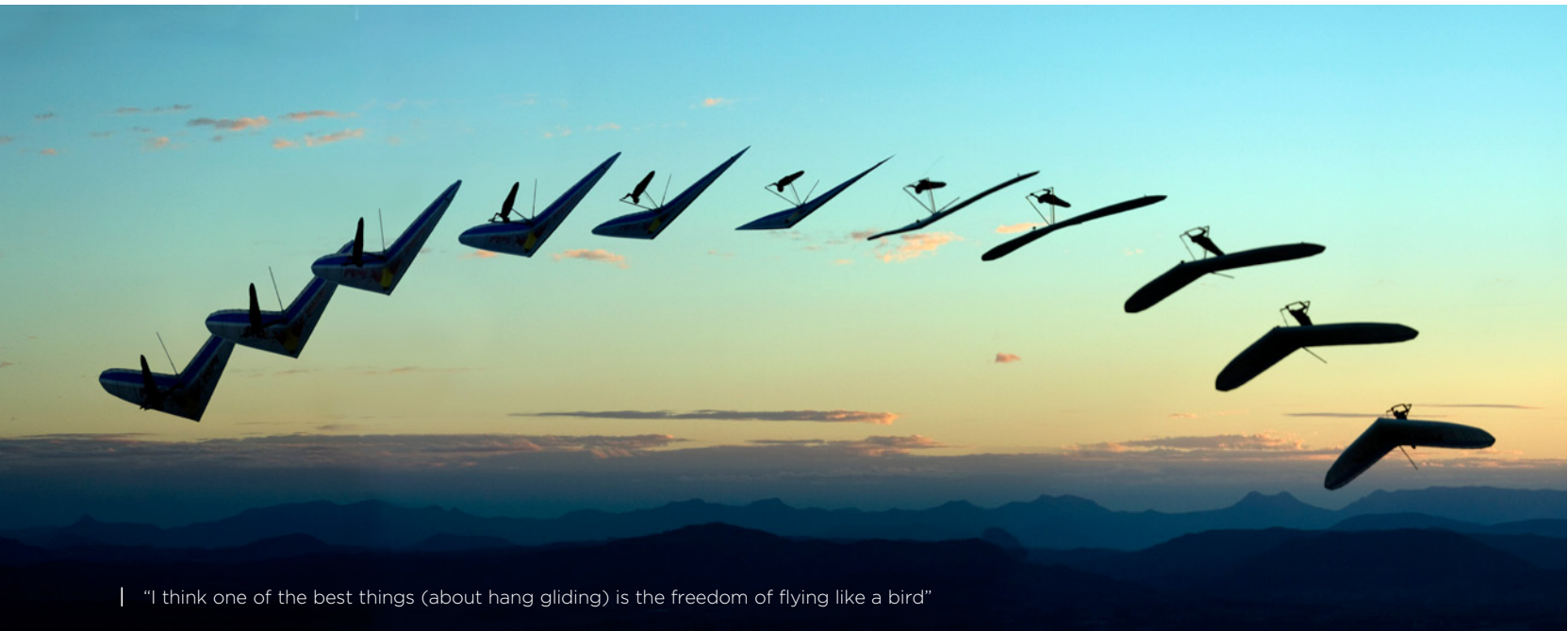
Australia's Gulf of Carpentaria is one of the few remote regions in the world where the Morning Glory phenomenon occurs. As many as eight clouds in a row can roll over an area during the season from August to November. It was here, in the salt flats of Burketown in Queensland, where Durand faced the cloud. After several dawns, it finally rolled in on 20 and 21 September 2009. With the Red Bull team present to capture the adventure on video, an ultralight airplane lifted Durand up to the cloud and released him to ‘surf’ the sky's big wave.



| Durand takes on the Morning Glory, a rare cloud formation whose exact magnitude and cause remain a mystery

All photos courtesy of Incite Images/Red Bull Content Pool






| “I think one of the best things (about hang gliding) is the freedom of flying like a bird”



| Durand achieved a world record in 2009 for the longest foot-launched flight in the world from any aircraft, flying 317 km without an engine

“This was the most amazing experience I have ever had in a hang glider,” Durand recalls. “It felt so surreal riding this monster cloud in one of the most remote areas of Australia. Even after nearly two years have passed, I can close my eyes and vividly remember every detail.”

Having surfed the Morning Glory, Durand may have already flown the most extreme flight he may ever take. But it does not need to remain his greatest achievement. Having placed second last year in the FAI Pre World Championship, only one pilot stands between Durand and the sweet number one spot this year. If Durand gets his way — and, perhaps if he chooses his shorts right — he may soon be basking in another wave of international glory. 



## CLOUD-BASED CHARITY

Glider pilot Jonny Durand is an active supporter of the Cloudbase Foundation, a non-profit organisation formed by hang gliding and paragliding pilots around the world. The group uses donations from persons and parties outside the pilot community to fund charities that benefit children wherever they fly. This includes the US and countries like Ghana and Ecuador. The funds are also used to support existing missions, schools and hospitals in these areas. The pilots involved actively help to find donors wherever their competition is located. In May 2011 alone, pilots competing in the US raised over USD4,000 for the foundation.

by Katrina Balmaceda

# SEEING THE WORLD

A MISSION TO PREVENT BLINDNESS,  
ONE FLIGHT AT A TIME





Orbis Flying Eye Hospital's aircraft can be identified by its new sky and clouds livery

#### OPPOSITE

The Flying Eye Hospital is a fully equipped, self-contained eye hospital with rooms for surgery, recovery and lectures. Its medical director is Dr. Ahmed Gomaa (top left)

IN THE MID-1990s, A MEDICAL STUDENT WHO HAD A PASSION FOR FLYING realised that his two interests could complement each other. Flipping through a magazine published in Kuwait, he read about a non-profit organisation that travelled around the world to combat preventable blindness by treating eyesight-related diseases. In 2005, after completing master's studies in community health in London, the man, Ahmed Gomaa — already a doctor — joined the organisation he read about: Orbis International, which operates the Flying Eye Hospital. Having started out as a staff ophthalmologist, he is today the hospital's medical director.

What makes the Flying Eye Hospital successful is that it not only visits countries to treat patients, but also to transfer its skills to the medical community of the locality it is visiting. This is made possible with a 48-seat classroom onboard the current aircraft, a McDonnell Douglas *DC-10*, where local eye professionals receive lectures and participate in discussions. They also observe surgeries and ask questions of the operating surgeons through a two-way audio-visual system that uses 17 cameras, eight microphones and 54 video monitors. Surgeries may also be broadcast live outside the aircraft — to a local hospital, for example — and recordings are edited and duplicated in DVDs for the local community.

Volunteer faculty Dr. Jaime Brandt, a glaucoma specialist, uses a telemedicine platform called Cyber-Sight to communicate with local trainee doctors before each programme and learn more about their skills and his possible patients. The actual programme itself begins on a Sunday, with the staff getting acquainted with the local team. Monday sees them screening a dozen to 25 patients in each speciality. "What we are trying to accomplish is find patients that we can help, but also cases that are appropriate for skills transfer," says Dr. Brandt. He spends the rest of the week in the operating room either on the aircraft or at the local hospital, and conducts lectures and one-on-one trainee interaction between surgeries. Even after the team has left, Dr. Brandt continues communicating with his trainee doctors through Cyber-Sight.


"WHAT WE ARE TRYING TO ACCOMPLISH IS FIND PATIENTS THAT WE CAN HELP, BUT ALSO CASES THAT ARE APPROPRIATE FOR SKILLS TRANSFER"

## NEW BIRD

The current Flying Eye Hospital houses rooms for laser and examination, operation, sterilisation and recovery, as well as a classroom and audio-visual room. A new aircraft is on the way — a McDonnell Douglas *DC-10* donated by FedEx in 2012. It is being fitted with nine customised modules similar to cargo containers, which may be removed from the aircraft for ease of maintenance and upgrades. The aircraft comes with an upgraded avionics package that requires only two pilots, and will reduce — in some cases eliminate — fuel stops.

The staff comprises a variety of medical professionals, including specialised ophthalmologists, ophthalmic nurses, anaesthesiologists, biomedical engineers, and ophthalmology residents and fellows. A recent visit to Jinan, China, showed just how crucial it is to work as a team. While screening an elderly female patient who had been diagnosed with glaucoma, the doctors found out that her condition had been caused by a cataract that needed urgent removal. "Our glaucoma specialist consulted our cataract surgeon and we arranged an emergency operation for her that lowered the pressure in her eye and restored her sight," says Dr. Gomaa.

It was the Flying Eye Hospital's second visit to Jinan and its 39th to China, a country that accounts for 18 per cent of the world's blind and 400,000 of the estimated one million children suffering from blindness in Asia. While eye-care needs vary from region to region, the country's overall major causes of blindness — cataract, glaucoma and corneal disease — reflect global trends. Also on this year's itinerary are Makassar in Indonesia, Davao and Pampanga in the Philippines, Ulaanbaatar in Mongolia, and Trujillo in Peru. Dr. Gomaa says that these places, as well as most of the areas in which the Flying Eye Hospital operates, face the same challenges: a burden of disease beyond the capacity of local health services, a shortage of trained personnel, and high cost of the required medical care.

The Flying Eye Hospital has visited 78 countries since 1982. While volunteer faculty typically spend about two weeks a year participating in medical programmes, Dr. Brandt says that "each day is a different adventure". Many may have started out the same way as Dr. Gomaa, who says he joined Orbis because he believed "this was the best way to take my studies into action and also see the world". A fair trade for those who work to restore eyesight, giving many others a chance to see their worlds. 





HYPERSONIC FLIGHT

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by Katrina Balmaceda Uy

THE GREED  
FOR SPEED

AVIATION'S QUEST TO RUN FIVE  
TIMES FASTER THAN SOUND



OPPOSITE PAGE

The *Bell X-1* flown by pilot Chuck Yeager, the manned plane that first broke the speed of sound

FROM TOP

The *Lapcat-II* Mach 5 vehicle at take-off  
The North American *X-15* was a hypersonic rocket-powered aircraft operated by the US Air Force and NASA

**WHEN AMERICAN PILOT CHUCK YEAGER BROKE THE SOUND BARRIER (MACH 1) IN 1947, HE DIDN'T FEEL A THING.** “Grandma could be sitting up there sipping lemonade”, he later said of the relatively smooth flight. Not so for Major Robert White and his successful attempts to go hypersonic — or five times the speed of sound, at Mach 5. “The airplane got so damned hot that it popped and banged like an old iron stove. It spewed smoke out of its bowels and it twitched like frog legs in a skillet”, wrote White.

This was in the early 1960s. And while rockets, experimental aircraft, and the Space Shuttle have long since surpassed Mach 5, engineers today have yet to find a way to make it safe, comfortable, and efficient for humans to fly that fast. The commercial appeal is obvious. At such speed, crossing the Pacific Ocean takes less than two hours. But flying at Mach 5 also exposes aircraft and humans to extreme conditions.



**DUE TO THE EXTREME HEAT, HYPERSONIC AIRCRAFT TYPICALLY USE SUPERSONIC-COMBUSTION RAMJET OR ‘SCRAMJET’ ENGINES**





LEFT

The *SpaceLiner* by the German Aerospace Centre consists of a large unmanned booster and a manned stage designed for 50 passengers and two crew members

NASA's *X-43A* is the fastest aircraft on record at approximately Mach 9.2, shown here with a scramjet attached to the underside

Before going hypersonic, a vehicle needs to reach an altitude of at least 60,000 feet, where the air is thin and atmospheric pressure is very low (a hypersonic vehicle below 60,000 feet will explode from pressure). The interiors need to be highly pressurised, as the lack of atmospheric pressure will cause exposed bodily fluids, such as saliva, to boil at the human body's normal temperature.

At Mach 5 and beyond, aircraft experience aerodynamic friction so intense that the heat it produces — somewhere in the range of 1,000 degrees Fahrenheit — can melt steel. When White flew NASA's *X-15* research aircraft beyond Mach 5 in the '60s, its outer windshield layer cracked due to heat distortion and gravity pressures four times more than normal upon atmospheric re-entry.

Due to the extreme heat, hypersonic aircraft typically use supersonic-combustion ramjet or 'scramjet' engines, which forcefully compress air from the atmosphere to cause combustion. Such engines are not made to move from a standstill, and require take-off assistance, usually from a rocket or an aircraft launcher. Most hypersonic aircraft, then, are designed to rely more on lift than on wings.



The Soviet Tupolev *Tu-144* was the world's first commercial supersonic transport aircraft


Watch the video here:



## AT SUCH SPEED, CROSSING THE PACIFIC OCEAN TAKES LESS THAN TWO HOURS

This is why most hypersonic vehicles have been tested unmanned. In November 2004, NASA's *X-43A* unmanned experimental aircraft reached a speed of at least Mach 9.2. Primarily fuelled by hydrogen, its scramjet engine was aided by a Pegasus rocket launched from a Boeing *B-52 Stratofortress* bomber. In August 2014, a China-made hypersonic glider flew at Mach 10.

Other developments include the *SpaceLiner* concept by the German Aerospace Centre, designed to be propelled by 11 rockets into the mesosphere until the passenger vehicle can separate and fly independently at Mach 25. *Lapcat-II* by the European Space Agency aims for Mach 5, while a design by Airbus targets an altitude of at least 100,000 feet. Meanwhile, the Japanese Aerospace Exploration Agency has begun engine tests for a hypersonic vehicle to be called *Hytex*.

Engineers have yet to figure out how to safely land such powerful vehicles, and are far from making them comfortable enough for grandma to enjoy a lemonade. But they appear to be on their way to proving that passenger hypersonic transport is no more just a flight of fancy. 



## THE AURORA PROJECT

When a trophy-winning international aircraft recognition specialist fails to identify an aircraft, conjectures fly. In the case of specialist Chris Gibson in 1989, a sighting of an isosceles triangle-shaped delta aircraft fuelled on-going rumours of 'black' missions and secret aviation projects by the US. In 1990, a magazine found an entry named *Aurora* in the 1985 US budget, which allocated \$455 million for "black aircraft production". In the following years, unusual sonic booms and contrails helped solidify the legend, as did intercepts of radio transmissions involving an aircraft seemingly flying at 67,000 feet. The US government, though, says all evidence related to the *Aurora* is circumstantial or pure conjecture, and denies it ever existed.

## Solitary Pleasure on a Favorite Chair

It is my belief that when men reach a certain age, they choose a favorite chair in the bedroom or *sala* and spend the rest of their days sitting on it.

Six years ago, my Lolo (grandfather) came home from the U.S. Every day, he sat on a chair in his room. Last year our *sala* was renovated. He has been sitting there ever since.

Crossword puzzles take up most of my Lolo's time. He wakes when his alarm clock tells him to, eats whenever his stomach grumbles for his attention and sleeps only when his eyelids hint at heaviness. He begs to go to the mall at least five times a day.

When the lack of a companion to the mall or of appetite or of puzzles gets him bored, he indulges in a solitary pleasure: memories.

But the moment an equally bored grandchild engages him in conversation, the solitude of his reverie ceases and he invites his grandchild to a walk down the diary of his youth.

He was a *guerilla* during the Japanese war. He was twenty-four, a medical student in Manila, when he came home one day to find his boarding house emptied of people and belongings. All the students were going back to their provinces to avoid being forced into the army. But my Lolo was caught in Bataan.

He walked the Death March. During the march, the Japanese never allowed them to have food or drink, not even a sip from the filth-laden canals by the road. My Lolo eventually fainted from malaria. The Japanese thought he was dead and threw him into a pit of corpses. As one Filipino laborer started digging a grave, he noticed Lolo's eyelids moving. They quickly sent him to heal in the Filipino barracks. That brush with death became Lolo's chance to live.

One day I learned who my Lolo's best friend was. It originated by my complaining about a certain Piping who often called the house for my Lolo. Piping had been his best friend since college. But the fact is, Piping never spoke to him – he *shouted* over the phone for him.

I soon discovered that when one gets old, his hearing ability weakens. He then believes that other people have the same dilemma, so he stops talking and starts shouting. One day I realized that I hadn't answered a call from Piping in a while. I congratulated myself for knowing when to answer the phone and when to let my sister deal with the eccentricity and hearing ailment of my Lolo's best friend.

But the truth was, Piping had passed away.

When I was ten years old, I met another friend of my Lolo. This man, our neighbor, told me and my sister that Lolo had always been chased by girls when they were in college. Years later, when



This essay was published in the Youngblood section of the Philippine Daily Inquirer, the most widely-read newspaper in the Philippines.



Lolo came home from the U.S., I asked him if it was true. Often, during conversations with his grandchildren, he recalls the same thing. He chuckles and blames all his past love affairs on the women's advances. He was only a poor, cute guy who was too weak to resist and was prevailed upon by force. I grin and think, *Yeah, right.*

But a man adopts an aloof façade only because he has a tender heart to hide. During his Golden Wedding anniversary, Lolo danced to "To All the Girls I've Loved Before." Sometimes, amid pauses in his crossword-solving, I hear him whistle the tune.

Because when one gets old, the music that nurtured his teenage soul stays with him. For my Lolo, the names of his grandchildren blur more than that of Ol Blue Eyes Sinatra's.

When one gets old, he returns to his reservoir of memories and, if he is fulfilled, turns it into a river of stories – stories replete with lovers and friends, *barkadas* (friends) and broken families, seven kids and twenty-four grandchildren.

When one gets old, he will dedicate his songs to Rose who was the first love, to Natividad who bore his first child, to Andrea with the beautiful body, and, finally, to Crispina, whose hands he held when young and tender and firm; whose hands have now been softened and wrinkled by half a century of marriage.

And he will thank God for Piping who grew old and half-deaf with him and for the stranger who never dug his grave.

But while one is young, he must live in a way that he can, without remorse, invite his future grandchildren to accompany him down memory lane. He must drink life and "drain the cup to its dregs". He must dance in mountaintop rain and run against the ocean's waves. He must muddy himself in childhood soil and dine finely at his wedding reception. He must seek the sting of medicine when he stumbles and wear his scars like badges and take the time to laugh at himself.

When one is young, he must involve himself with people not out of mere curiosity but also out of concern. When a man is young, he must throw himself without reserve into the widespread arms of his God and know the paradoxical bliss of surrender.

Because, after all, my Lolo has had Alzheimer's Disease for nearly a decade now. His memory is fading away. The reservoir has been infiltrated with leaks. These memories of his youth may just be among the last to indulge him in solitary pleasure as he daily sits on his favorite chair.

# Eliminating Damage

How a Plasterboard Supplier Reduced Damage  
and Saved Its Business



This case study was written for Olitek Pty Ltd.  
Information contained in this study is factual.



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# A Fragile Necessity

One in every eight plasterboard sheets bought and delivered to a construction site gets damaged, says environmental solutions company Envirowise. While the study may have been limited to the UK, the widespread use of plasterboard (also known as drywall or gypsum board), coupled with its fragility, leaves little room to doubt that the same is happening around the world. Gypsum Recycling International estimates that more than 15 million tons of gypsum waste is landfilled annually in Europe, USA and Asia.



To understand this level of waste, we look past the construction site to the manufacturing plant, and to the first processes that present major opportunities for damage: moving, loading and transporting plasterboard. The damage incurred at this stage, long loading times, and insufficient container capacity utilisation amount to hundreds of thousands of savings lost in operations. (Tip: Use this [online Damage Cost Calculator](#) to calculate construction materials damage cost.)

This case study details how an Australia-based plasterboard supplier reversed this trend and drastically reduced damage levels within one year, in the process saving more than half a million dollars per annum.



*“High damage levels gave Supplier J a reputation as a ‘supplier of second-hand plasterboard”*

## **A Plasterboard Supplier’s Reputation Suffers Due to High Damage Levels**

In 1990, an Australia-based building and construction company, which we’ll call Supplier J, acquired an independent plasterboard reseller to form a plasterboard-supply company in Western Australia. After 2000, however, declining margins and profitability, coupled with rising costs, led Supplier J to leave its large-scale commercial contracting and fibrous plaster manufacturing businesses. Further squeezing the market, builders within Supplier J’s market area started establishing large-scale ‘in house’ residential contracting businesses.

To make matters even worse, plasterboard supplied by Supplier J frequently got damaged during transit, reaching damage levels as high as 15-16%. This created a reputation for the company as a ‘supplier of second-hand plasterboard’. Supplier J also reported that supply of plasterboard into the Western Australian market was being compromised by poor shipping methods, a single unreliable supplier, and high costs. A large corporate group of construction companies ceased trading with Supplier J. All these plus poor debtors collections resulted in an operating loss in 2003.



## Trying to Become a Reliable Supplier of Plasterboard and Accessories

Supplier J knew it had to make drastic changes to stay in business. Dan, the company's national logistics manager at that time, led the reforms, starting by redefining the business mission as simply becoming 'A Reliable Supplier of Plasterboard and Accessories'.

Reforms included:

- exiting remaining residential contracting activity
- consolidating bulk warehousing into one port warehouse
- consolidating and outsourcing warehousing tasks
- mapping internal service culture to identify threats to achieving dynamic alignment with customers.

But the one reform that created significant improvement was Supplier J's **re-engineering of its freight methodology using a new container loader, the Tynecat.**

*“Supplier J knew it had to make drastic changes, including re-engineering its freight methodology, to stay in business”*

## Meanwhile, in Queensland... Freight Forwarders Seek a One-Shot Loader

At the time Dan was seeking a way to re-engineer Supplier J's freight methodology, a Queensland-based engineering firm had begun production of a new container loader called **Tynecat**. Development of the loader had begun in 2001, spurred by talks with Paccon Logistics, which had expressed its need to bulk-load containers in a single shot without having to send any of the loading equipment along with the container.

The discussions led to the design of a single-shot loader that came with a computer control system to detect the position of the load relative to the container walls, avoiding collision and damage. It was designed to work with auxiliary equipment such as rotator stacking machines. “This lent itself to fast container turnaround, long loads, and the possibility of being able to load containers with products that would not previously have been achievable, safe or cost effective,” says James Oliver, engineering manager at Olitek.







**Tynecat at a Glance (click image to view video)**

- hydraulic lifting and position feedback sensing system
- single operator control
- 30T 15m long x 2.4m wide container loading
- single-shot loading in less than 10 minutes
- ability to load the container within 20mm of each wall

In the beginning, the **Tynecat** development team had imagined that freight forwarding and logistics companies would use the **Tynecat**. It also had a Big Hairy Audacious Goal of the loader being used in “every wharf in the world”. But they had not pictured manufacturing companies to be using the loader in their own factories.

As it turns out, some of the most difficult to load materials include sheeting material, plywood, roof iron, demountable buildings, steel products... and plasterboard. And one plasterboard supplier in Western Australia was in dire need of a loading solution.

## Success in Western Australia: How One Piece of Equipment Helped Save the Business

In March 2004, Supplier J bought three **Tynecat** loaders. Using the loaders reduced the damage levels of plasterboard during ingress, egress and transit from 16% to a mere 1%

### How long did it take to achieve that result?

“Instantly,” says Gordon, current inventory manager for Western Australia at Supplier J.

In 2005, a year after Supplier J began using the **Tynecat**, its re-engineered freight methodology resulted in:

- savings of \$650k per annum
- reduced supply chain lead times (the **Tynecat** could load a 20-foot and 40-foot shipping container with a load size of 8m x 3m x 3m and 28 tonnes in less than 10 minutes)
- improved product presentation and quality
- increased container capacity utilisation (the **Tynecat** helped minimise dunnage loss).

Packing and loading plasterboard using the **Tynecat** container loader — paired with a **Tynecat** rotator stacking machine — also proved to be environment-friendly. It helped to:

- eliminate significant landfill waste
- generate less waste packaging
- increase the reuse of packaging materials.

Workers no longer needed to enter the dark confines of containers or climb onto trucks to load materials as the **Tynecat** required a single operator, thus reducing the risk of injuries.

## **The Development of the Tynecat**

- 2001** Development begins
- 2002** 1st prototype created
- 2003** 14T lift capacity upgraded to 20T lift capacity
- 2004** Introduction of auxiliary equipment such as rotator stacking machines
- 2005** 12m Tynecat designed
- 2006** Introduction of mobile Tynecat platform with improved usability, fast setup and container positioning
- 2007** Introduction of heavy duty lift trolleys; upgrading the machine to 24T lift capacity
- 2012** 15m Tynecat designed
- 2012** Updates to lift trolleys to enable 28T lift capacity
- 2014** Updates to steering system to increase serviceability and machine lift
- 2015** Updates to onboard computer and controls system to latest technology and assist in larger scale manufacturability
- 2015** Improvements to aesthetics of design
- Planned 2015** Slim line Tynecat loader allowing 120mm or less dunnage loss due to stillage and lift requirements, allowing more container packing density

By the end of 2007, Supplier J reported that its plasterboard business “had become PAF positive, had excellent debtors collections, and had recovered its market share, all as the only scale operator bringing products from interstate, competing against two local manufacturers”. Its freight re-engineering project was recognised as a finalist in the company’s excellence awards programme.

## **That Piece of Equipment Continues to Deliver ROI Today**

Today, Supplier J continues to use **Tynecat** loaders, filling six containers per shift in WA alone with a range of lengths up to six-metre-long pieces of plasterboard every day. It boasts **less than 1% – virtually zero – damage** to the product during shipping. In comparison, other methods of transportation, such as train and road freight, lead to more than 10% damage.

Loading with the **Tynecat** has saved Supplier J **\$5,000 per container**, which comes from:

- being able to load into a standard shipping container, enabling more efficient (sea) freight costs between Perth, Melbourne and Brisbane
- less time required to load a shipping container compared to loading plasterboard onto alternative freight methods.

And that’s before considering damage savings. (Tip: Use this [online Damage Cost Calculator](#) to calculate construction materials damage cost.)

## **Reputation Restored**

Today, Supplier J distributes plasterboard across 12 countries in Asia, Australasia and the Middle East through a joint venture with one of the largest plasterboard suppliers in North America.

Supplier J has submitted budget for approval in 2015-2016 to expand and keep its **Tynecat** fleet up to date.

**Companies that use Tynecat loaders and equipment include:**

*Jindal SAW  
P&O Shipping  
Mackenzie Transport  
Emmerson Transport  
USG Boral  
MWD Transport  
NZ Express Transport  
Seacargo Logistics  
Dove Transport  
A.R Southwell & Co  
Earthtrans  
ADV Agetrad  
Paccon Logistics  
Rolyn Logistics*

**About Olitek**

Olitek specialises in engineering design and manufacture, including concept design, finite element analysis, rapid prototyping, in-house CNC machining, fabrication, casting, welding, electrical and control systems. Proudly Australian owned, Olitek can uniquely provide the complete solution in-house for design and manufacturing processes to clients throughout Australasia.

Members of the Olitek Team developed the Tynecat at the request of the freight and logistics industry, who worked with Olitek Engineers to create safe, efficient and cost effective container loading.

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*“The Tynecat was developed at the request of the freight and logistics industry”*

