



# NAVIGATION

Newsletter of the Australian Institute of Navigation Incorporated

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## Northern Sea Route

**Global warming is shrinking the Arctic ice cap to such an extent that, according to some predictions, in only three years the Northern Sea Route, will be ice free in the summer enabling the Asia-Europe sea route over the top of Russia to be a reality.**

In 1932 a Soviet expedition was the first to successfully navigate the entire length of the route. In 1987 the Northern Sea Route was officially opened up by Russia to international shipping. The Northern Sea Route is approximately 40 per cent shorter than the present route through Suez. Russia presently has a fleet of six powerful nuclear icebreakers with further construction planned.

Global warming is shrinking the Arctic ice cap to such an extent that, according to some predictions, in only three years the Northern Sea Route, sometimes called the North East Passage, will be ice free in the summer. It will enable the Asia-Europe sea route over the top of Russia to be a reality by allowing commercial transport during the summer months, thereby fulfilling the 300 year old dream of Peter the Great

A Soviet expedition led by O.Y. Schmidt was the first to successfully navigate the entire length of the route Archangel to the Bering Strait in 1932. It was not until 1987 however, that the Northern Sea Route was officially opened up by Russia to international shipping. Con-

straints such as mandatory icebreaker escort proved to be prohibitively expensive resulting in few if any takers. Circumstances have now changed allowing suitable ships to traverse the route on their own.

The Russian shipowner Sovcomflot is planning to commence shipment of oil this summer along this route using their ice-classed, double-acting 70,000 dwt shuttle tankers.

The Northern Sea Route is approximately 40 per cent shorter than the present route through Suez, that's around 4,000 nautical miles shorter between the ports of Ulsan, Korea and Rotterdam, Netherlands as an example. Against this is the requirement of special vessels with ice classification and if tankers, to be double hulled, to operate in these waters. Inevitably some vessels will get trapped by the ice and need assistance. It is therefore reassuring that Russia presently has a fleet of six powerful nuclear icebreakers with further construction planned.

Source Captain Mick Costello

## Back-up Ideas for Aviation GPS Sought

The United State Federal Aviation Administration will hold a three day public meeting in August 2010 in Stamford, California to gather industry ideas on alternative positioning, navigation and timing methods that could be used if global navigation satellite serves are interrupted.

At present the Federal Aviation Administration claims it uses a variety of non- global navigation support systems equipment, including distance measuring equipment such as VHF radio, instrument landing systems and radar surveillance for alternative positioning, navigation and timing for this purpose.

However, the agency notes that with the coming of it space-based next generation air transport system (NextGen), legacy back-up systems will not provide the minimum level of alternative positioning, navigation and timing services needed.

"Therefore the FAA is collecting information regarding research, development and potential implementation of

systems, avionics, processes and procedures that minimise the impact to system capacity and efficiency during periods of global navigation support system interference," this US federal agency has claimed.

The FAA plans to have a limited number of 30 minute closed door sessions with manufacturers in cases where propriety information is discussed.

An updated version of the Long Range Aids to Navigation (LORAN) system was proposed several years ago as an alternative positioning, navigation and timing arrangement some years ago.

Airbus and Boeing have noted that flight management and inertial measurement systems on board their modern aircraft were able to provide sufficient stopgap performance to land an aircraft safely in the event of a global positioning system outage, negating the need for an independent back-up system.

Flight International

# The Australian Institute of Navigation Incorporated

(ABN 16 875 718 961)

Established 1949

Patron

**Her Excellency Ms Quentin Bryce AC**  
**Governor General of the**  
**Commonwealth of Australia**

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## Meeting Schedule

### General Meetings

are held on the second Wednesday of the month at the NSW Sports Club 10-14 Hunter Street Sydney, 1800 for 1830 dinner followed by 1930 General meeting with Guest Speaker. Please inform the Administrator if you are intending to have a meal.

### Meetings for 2010 are scheduled as follows:

11 August, 8 September, 13 October, 10 November, and 8 December.

### Council meetings

are held in the Hunter Room commencing at 1600 and are scheduled for 2010 as follows:

11 August, 13 October and 8 December.

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## President's Report

It is very pleasing to record that the Institute monthly Technical/General Meetings have continued to be well supported by members and guests.

We have been most fortunate to have the following presentations in recent months.

In April: Harry Hughes educated and amazed us with a first hand description of "Air Navigation Over Europe 1941 – 1945"

In May: Capt Mike Downes [ex RN and RAN] gave us a thorough insight into " 'Q' Ships in World War II"

In June: James [Teddy] Herbert-Read, presently studying for a PhD in Collective Animal Behaviour, addressed what humans might be able to learn about navigation from the "expert animal navigators".

In July: Commander Peter Cooke-Russell gave us a very informative and personalised presentation on "The History of Oceanography in the RAN".

The close link of our Institute with HMAS Watson and their Navigation Faculty has continued. I have been pleased to represent the AIN at three Graduation Ceremonies [an Intermediate Nav, a Long Nav and an Advanced Nav Course] congratulate the graduates and present our prize to the Dux of each course.

As the weather warms up in this later part of the year your council look forward to your continued support of the Lecture/Dinner Meetings.

*Best regards,*

*Ian Watkins*  
*President*



The First of the new Swedish Coast Guard boats is due for delivery in the Spring of next year. Steel cutting has begun at Germany's Peene-Werft on a series of four versatile, multi-purpose boats for the Swedish Coast Guard costing a combined €86.3m.



## Somalia pirates' clash with Russian navy reveals a gap in rule of law

By Anne Applebaum  
Tuesday, May 18, 2010

The pirates attacked the merchant ship early on the morning of May 5. The crew locked themselves in the engine room with a stock of food and water. A naval destroyer came steaming to the rescue and demanded that the pirates give up the ship. When they refused, the destroyer attacked with guns and cannons and, after a brief fire fight, the pirates surrendered. Had this been a story from a children's book -- the kind with a skull and crossbones on the cover and a foldout treasure map inside -- the pirates would then have walked the plank. But it wasn't. This was 2010. The merchant ship was not a schooner but a Russian tanker, carrying 86,000 metric tons of crude oil worth \$52 million. The pirates were not colorful figures with cutlasses but Somalis led by professionals who knew what this cargo was worth.

As for the Russian destroyer, it was not operating according to an 18th-century code of honor but according to international law, such as it is. Theoretically, the captain was supposed to hand the detainees and the evidence over to the regional police. Not wanting to involve himself in legal wrangling, however, he decided to "release" the pirates instead. And thus they were "set free" in a tiny inflatable raft, with no navigation equipment, 350 miles off the coast of Yemen. The raft has disappeared. In the 21st century, this is how pirates walk the plank.

In fact, the Russian destroyer wasn't the first to hit upon this solution. Asked last weekend, the commander of the European naval force that co-ordinates military operations of the Somali coast said there had been "similar instances" involving Dutch and Danish ships but declined to elaborate. He also noted that of 400 pirates captured in the past three months, only 40 have been prosecuted. The rest have been released. Or "released."

Why? Pirates are hard to convict because evidence at sea is hard to collect, because ship captains have other priorities and because the nearest working courts, in Kenya and the Seychelles, are overwhelmed by pirate cases. Pirates are also being released because they are learning to work the international legal system: Last month, pirates captured by the German navy sued the German government on the grounds that they could not be guaranteed a fair trial in Mombasa Kenya. As for So-

malis who have landed in Germany itself -- or the Netherlands, or Britain -- they are rapidly learning that they can claim political asylum. Captured pirates can also be brought to the United States, of course, but that is expensive, time-consuming and at some level absurd. Eleven Somalis were indicted in Norfolk last month -- all men who cannot speak English, cannot read or write any language, and do not know their birth dates. When asked their dietary preferences, they requested camel or buffalo meat. How can they be judged by a jury of their peers, as American law requires?

In fact, captured Somali pirates present the Western world with a perfect storm of legal complications: As the legal scholar Ruth Wedgewood put it, they leave us "tangled in a postmodern confusion over the law of armed conflict human rights law, solipsistic views of national criminal jurisdiction and, above all, a stunning lack of common sense". It is simply illogical to treat them as domestic criminals or to try them in national courts: They should be considered a special category of international terrorist, not as domestic criminals. On the other hand, there are no international courts or international prisons equipped to cope with them: Last month the U.N. Security Council called upon the secretary general to look into the idea of creating some, but of course any U.N. system would take months or years to come into being.

In the meantime, we have a few other options. We can take the Somali pirates more seriously as a military and terrorist threat, go after their backers in the Persian Gulf and East Africa, and systematically attack the "motherships" from which they launch pirate boats. We can step up the international coordination of navies in the region: Russians help Russian tankers and the U.S. Navy helps U.S. ships, but there are many countries with ships and sailors in the region -- Greece comes to mind -- without real navies. A few months ago, a Greek-flagged tanker was ransomed for \$7 million. That sort of money buys a lot of new Kalashnikovs around the Gulf of Aden.

But until we, together with the Russians, the Chinese, the Europeans and others, can reach some agreement about what we call them and how we treat them, each captured pirate -- like each captured terrorist -- will invariably be dealt with ad hoc. Leaving them to float away on a rubber dinghy might not be the best solution, but it's the only one we've got.

applebaumletters@washpost.com  
Source Washington Post

## Shen Neng 1 ships out

**DISABLED** coal carrier **Shen Neng 1** was towed out of Hervey Bay's waters late yesterday afternoon, ending the 10-day coal off-loading operation without environmental incident.

Conservation, tourism and fishing groups had been concerned about the risk of damage to the Great Sandy Marine Park while almost 19,000 tonnes of coal was off-loaded near the northern beaches of Fraser Island to make the Shen Neng 1 safe to tow overseas.

The Shen Neng 1 ran aground on the Great Barrier Reef on April 3 and after attempts to take the ship into Gladstone Port failed, new plans were made to partially unload the stricken carrier in Hervey Bay's waters.

Maritime Safety Queensland general manager Patrick Quirk said a raft of precautions, such as setting cargo tarpaulins between the vessels to minimise the risk of coal spilling into the sea, pollution response vessels standing by and twice daily observation flights, had been taken to protect the environment.

"I feel happy that we've met our aim of having a minimal impact on the environment," he said.

Wide Bay Burnett Conservation Council president Roger Currie said he was pretty happy with the way the Shen Neng 1 operation was handled but that the council would have preferred it if the ship had not been brought into the marine park and serious contingency planning was needed to stop it happening again.

Greenpeace has warned of more shipping incidents due to the state's massive expansion of coal and gas exports risking unique marine life and the livelihoods of people in the tourism, hospitality and fishing industries.

"Worryingly for the residents of Hervey Bay – and all those who thought marine park status meant protection – it appears the decision to bring the Shen Neng to the area to unload its cargo may be the only contingency plan in such a situation," Greenpeace chief executive Linda Selvey said.

An e-petition calling for the State Government to strategically assess the likely environmental impacts of mining and exporting coal and gas has been launched.



*Shen Neng 1 being unloaded*

Mr Currie said an assessment was necessary to ensure the Shen Neng 1 incident was not repeated and that the risks from coal and gas export to the regional economic, ecological and social values were identified and mitigated accordingly.

Source Fraser Coast Chronicle

## U.S. Navy sends home 10 Somali pirates

The Navy on Friday released 10 accused Somali pirates who had spent more than six weeks in custody aboard a U.S. warship in the Indian Ocean, Navy officials said.

US officials said they tried to find a country willing to prosecute the alleged pirates, who were captured April 5 in the Arabian Sea by the McFaul, a U.S. guided missile destroyer. The McFaul apprehended the pirates after they had hijacked an Indian cargo ship and taken nine crew members hostage, Navy officials said.

The prisoners were removed from the McFaul on Friday and were being transported back to Somalia, Navy officials said.

U.S., European and other foreign navies that patrol the Indian Ocean have been reluctant to return captured pirates to Somalia -- a practice known as "catch-and-release" -- because the weak government there has little power to do anything about the problem.

-- Craig Whitlock

## Kongsberg—New High-speed Simulator for Royal Norwegian Naval Academy

Tuesday, June 1st, 2010

*Advanced new simulator for one of the world's fastest warships*



The official inauguration of the new Kongsberg Maritime delivered Polaris ship's bridge simulator at the Royal Norwegian Naval Academy in Bergen took place this Tuesday, 25th May 2010. The specially developed

1:1 simulator features a 240 degree visual system offering highly realistic scenarios for officer training. It is designed as an exact replica of the bridge aboard the Skjold class MTB (Missile Torpedo Boats), which are regarded as one of the fastest warships in the world with speeds of more than 60 knots/h (110 km/h).

The Skjold simulator features advanced software that simulates the Skjold MTB movements at sea and is interfaced to real navigation equipment, also delivered by Kongsberg Maritime, comprising: 3 x multifunction displays including Kongsberg ECDIS and radar, 2 x operator chairs, AP 2000 adaptive autopilot, custom made bridge consoles and a voyage data recorder (VDR) in addition to the operator panels and control systems for four gas turbines.

"The Skjold simulator is one of the world's most advanced simulators for realistic training of high speed navigation and ship handling. In the hands of the skilled personnel at the Royal Norwegian Naval Academy, it will allow for world class training," commented Vice President of simulation and training in Kongsberg Maritime, Mr. Lars Erik Hilsen during the official inauguration of the simulator. "This delivery represents a relationship that Kongsberg Maritime is very proud of. The Royal Norwegian Naval Academy is a highly knowledgeable and demanding client, which gives us new insight and technological inspiration. We look forward to continuing this collaboration and are certain that there are many great possibilities ahead."

The Royal Norwegian Naval Academy is a University College providing bachelor's degrees in military studies for officers in the Royal Norwegian Navy.

The program is recognised for its combination of theory and practical exercises, and the Skjold simulator will be essential for training officers in navigation, tactical manoeuvring, decision making and routines onboard the vessels.

"The increasing focus on safety and reduced acceptance for mistakes at sea, make the Skjold simulator a very useful training tool," said manager of the MTB training centre, Captain Rune Andersen. "The high speed of the Skjold class vessels makes it difficult to carry out all of the necessary training onboard so the simulator allows realistic training scenarios that would otherwise have been impossible to carry out. We can now expose the crew to greater risks in a safe environment."



Although the official opening took place this week, the simulator has already been tested for three weeks and has used the equivalent of 950.000 NOK in fuel, illustrating the cost savings compared to onboard training. As an experienced MTB operator himself, Andersen confirms the realism of the simulator: "For one particular exercise, we had initially planned to perform 1/3 of the training on the simulator and 2/3 onboard. However, the simulator functioned so well that we decided to change the ratio to 2/3 simulator training and 1/3 onboard," he said.

The Skjold simulator is a result of a long working relationship with the Royal Norwegian naval Academy. Kongsberg Maritime has previously delivered 6 x Polaris ship's bridge simulator, 1 x frigate trainer and 1 x desktop engine room simulator to the school. Both parties will also collaborate on the forthcoming European Simulator User Conference and Agent Conference, which takes place in Bergen, 21st - 24th September 2010.

Source: The Maritime Executive

## U.S. Navy Seal? No, it's a sea lion and he took less than a minute to find a mine (and even LEG-CUFFED a pretend saboteur)

He is one of the elite of the American fighting forces and trained to the limits by the U.S. Navy. But he's not a Navy Seal, he's actually a sea lion.

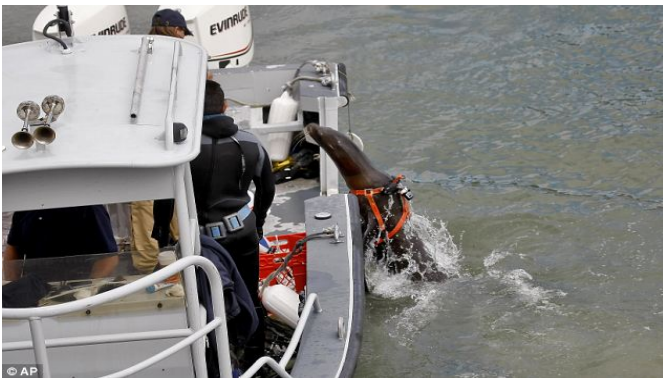
He was being put through his paces along with the team from the Navy Marine Mammals squad, based in San Diego, in a day of anti-terrorism training exercises held at ports throughout California.

And he took less than a minute to find a fake mine under a pier while a fellow recruit, a dolphin, quickly located a terrorist lurking in the black water. Then another sea lion, using a device carried in its mouth, cuffed the pretend saboteur's ankle so authorities could reel him in.

It was all part of California's annual, two-day homeland security and disaster preparedness exercises started by Governor Arnold Schwarzenegger in 2004.

The drills include a fake attack on a container ship at the Port of Oakland, a bomb explosion at the Port of Redwood City, and terrorist attacks in waters off Los Angeles, Long Beach, Sacramento and San Diego.

California is home to 11 ports that handle 60 percent of the nation's container shipping traffic, said Tom LaPuzza, a spokesman for the Navy Marine Mammals programme.



*Above. The sea lion jumps onto a U.S. Navy patrol boat to receive fresh instructions from his instructors*

'Security is of vital importance,' he said.

'Humans are very slow in the water. Sea lions can see five times as well. And dolphins can use their sonar to spot items that would take humans days or weeks to find.

'We have trained sea lions to attach a leg cuff, just like hand cuffs, but fitted on a diver's thigh. The device works in the same way as handcuffs. Once they are on, they cannot come off.

'A line is attached to the cuffs and the other end is held by security forces on a nearby boat. The human forces can then reel in the intruder and take him or her aboard for questioning.'

Other NATO members are considering enlisting the animals, which the US is using in Washington State to patrol for terrorists as part of a drive launched after the 9/11 attacks.

During training the sea lions are also conditioned to recognise various shapes of water mines.



*Above. One of the dolphins in the Navy Marine Mammals programme jumps onto a boat during training*

The animals can be fitted with a special harness attached to a lead, which allows trainers to keep track of them while they are hunting for underwater objects.

Cameras can be fitted to the harness giving military staff live video images from under the surface.

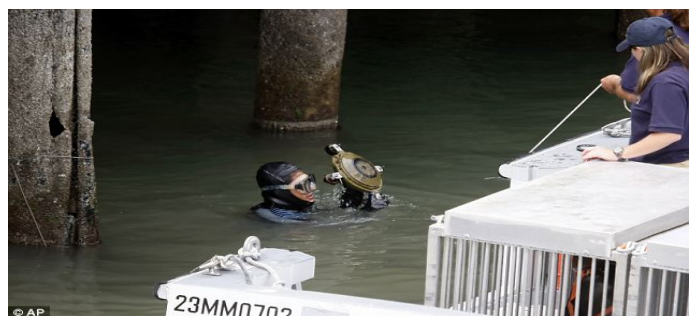


*Left. San Francisco police officers reel in suspected terrorist divers after they were tracked and 'cuffed' by the sea lions*

The marine mammal program is several decades old. La Puzza said dolphins and sea lions were used during the Vietnam War and Operation Iraqi Freedom.

None of the animals have been harmed in the anti-terrorist work and they never have to carry live mines.

Instead, they find the devices and place markers on them before Navy divers retrieve and defuse the devices.



*Above. A diver shows shows the fake mine used in the anti-terrorism training exercise.*

Source Captain Mick Costello



## IMO safety committee adopts historic ship construction regulations

IMO's Maritime Safety Committee (MSC) has instigated an historic change in the way international standards for ship construction are to be determined and implemented in the future. The adoption of so-called "goal-based standards" (GBS) for oil tankers and bulk carriers by the MSC, yesterday (20 May 2010), means that newly-constructed vessels of these types will have to comply with structural standards conforming to functional requirements developed and agreed by the Committee. This means that, for the first time in its history, IMO will be setting standards for ship construction. The Committee also adopted guidelines that, equally for the first time, give the Organization a role in verifying compliance with SOLAS requirements. The guidelines establish the procedures to be followed in order to verify that the design and construction rules of an Administration or its recognized organization, for bulk carriers and/or oil tankers, conform to the adopted GBS. The verification process consists of two main elements: self assessment of the rules by the entity submitting them to IMO for verification; followed by an audit, to be carried out by experts appointed by the Organization, of the rules, the self-assessment and the supporting documentation

Since the beginning of the 2000s, Governments and international organizations had expressed the view that the Organization should play a larger role in determining the structural standards to which new ships are built. The philosophy underpinning this move has been that ships should be designed and constructed for a specified design life and that, if properly operated and maintained, they should remain safe and environmentally friendly throughout their service life. The MSC formally adopted International Goal based Ship Construction Standards for Bulk Carriers and Oil Tankers, along with amendments to Chapter II-1 of the International Convention for the Safety of Life at Sea (SOLAS), making their application mandatory, with an entry into force date of 1 July 2012.

The new SOLAS regulation II-1/3-10 will apply to oil tankers and bulk carriers of 150m in length and above. It will require new ships to be designed and constructed for a specified design life and to be safe and environmentally friendly, in intact and specified damage conditions, throughout their life. Under the regulation, ships should have adequate strength, integrity and stability to minimize the risk of loss of the ship or pollution to the marine environment due to structural failure, including collapse, resulting in flooding or loss of watertight integrity.

The MSC further adopted Guidelines for the information to be included in a Ship Construction File.

The notion of "goal-based ship construction standards" was introduced in IMO at the 89th session of the Council in November 2002, through a proposal by the Bahamas and Greece, suggesting that the Organization

should develop ship construction standards that would permit innovation in design but ensure that ships are constructed in such a manner that, if properly maintained, they remain safe for their entire economic life. The standards would also have to ensure that all parts of a ship can be easily accessed to permit proper inspection and ease of maintenance. The Council referred the proposal to the 77th meeting of the MSC in May/June 2003 for consideration.

The MSC commenced detailed technical work on the development of goal-based ship construction standards at its 78th session in May 2004, when a comprehensive general debate of the issues involved took place and the Committee agreed to utilize a five tier system initially proposed by the Bahamas, Greece and the International Association of Classification Societies (IACS), consisting of the following:

Tier I - Goals? High-level objectives to be met.  
Tier II - Functional requirements? Criteria to be satisfied in order to conform to the goals.

Tier III - Verification of conformity? Procedures for verifying that the rules and regulations for ship design and construction conform to the goals and functional requirements.

Tier IV - Rules and regulations for ship design and construction? Detailed requirements developed by IMO, national Administrations and/or recognized organizations and applied by national Administrations, and/or recognized organizations acting on their behalf, to the design and construction of a ship in order to conform to the goals and functional requirements.

Tier V - Industry practices and standards? Industry standards, codes of practice and safety and quality systems for shipbuilding, ship operation, maintenance, training, manning, etc., which may be incorporated into, or referenced in, the rules and regulations for the design and construction of a ship.

The goal-based standards adopted at this session reflect tiers I to III.

IMO Secretary-General Efthimios E. Mitropoulos has described the adoption of GBS as "a significant and important breakthrough for the Organization, not only in terms of how future regulations will be developed, but also with respect to the role that IMO will play in verifying compliance, in this particular case, with SOLAS requirements." He added, "the concept that IMO should state what has to be achieved, leaving classification societies, ship designers and naval architects, marine engineers and ship builders the freedom to decide on how best to employ their professional skills to meet the required standards is a sound one and I congratulate the Committee on the painstaking and hard work carried out to turn the concept into reality."

Source: IMO

## Oceanlinx told to clean-up sunken energy generator

**The company responsible for a wave energy generator which snapped off from its pylons at Port Kembla earlier this month has been asked to remove the wreckage as soon as possible.**

Oceanlinx says the project, which feeds electricity back into the grid, proved its ability after being installed earlier this year, despite it sinking in big seas two weeks ago.

The Port Kembla Port Corporation (PKPC) has demanded Oceanlinx remove 170 tonnes of wreckage from the port's eastern breakwall amid concerns it could shift.

PKPC chief executive Dom Figliomeni says there are fears the generator could become a shipping hazard and the developer has been asked to put together a salvage plan.

"We need to make sure that it doesn't migrate into the shipping channels and pose a hazard to the safe navigation of boating and as such, removal is probably the best option, we just do not wish to take any risks," he said.

Mr Figliomeni says it is possible the damaged machine may move into the shipping channels in the next big swell.

"[The hazard is] not only in relation to shipping, it could be other recreational boating, so we just need to make sure that we manage the waters as safely as possible, we would definitely like it done as soon as possible."

Oceanlinx says it is continuing discussions with its insurance company about the wreckage.

A spokesman says it is yet to receive advice on a way forward.

Oceanlinx says it is too early to say what parts of the wreckage could be re-used.

Source ABC News 25 May 2010

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