ICPC Recommendation

Recommendation No. 5

Standardization of Cable Awareness Charts

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Available by request at http://www.iscpc.org or secretariat@iscpc.org

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1. INTRODUCTION

Before, during and after cable installation, one of the first steps necessary to protect a submarine cable from external aggression is to communicate the cable location to sea bed users that engage in activity that may endanger the cable. An essential step is to communicate the cable route to the appropriate national Hydrographic Offices, so that cables will be shown on government produced and commercially available nautical charts.

More recently nautical charts are being converted into electronic format, suitable for loading into chart plotters and navigational systems. In addition, a common and successful method to communicate cable route information to the sea bed users who need it is through the production and distribution of charts or flyers, depicting the cable route. These charts are known by various administrations as "Cable Warning Charts", "Cable Protection Charts", "Cable Awareness Charts" or similar names. Whether these charts are produced by overprinting onto government charts or are printed independently, they possess advantages over the standard government produced charts in that they can be produced, updated and distributed rapidly and customized to highlight cable routes and important additional information. Also, the size and format of the charts can be customized to increase acceptance by specific user groups such as fishermen, oil & gas industry, offshore renewable energy development, ocean mining, merchant fleets, etc.

Given the far reaching distribution of international fishing fleets and merchant vessels, it is envisioned that some degree of standardization for the production of Cable Awareness Charts is desirable to avoid confusion among sea bed users who may obtain such information from various ICPC members. In addition, given that many ICPC members now have maintenance responsibilities for cables in identical geographic regions with other ICPC members, some degree of co-operation among ICPC members in the production and distribution of cable route information is desirable.

2. CHART SPECIFICATIONS

ICPC members may wish to consider the following recommendations when issuing cable route information in chart form:

2.1. Name/Title

It is suggested that the charts are named "Cable Awareness Charts" (CAC's) rather than Cable Warning or Cable Protection charts.

2.2. Format

The size and format of the chart shall be chosen with the ultimate goal of ensuring its use by the intended sea bed users. In producing the chart, members must first choose between overprinting cable routes and information onto existing, commercially available nautical charts (paper or electronic) or producing an entirely original chart, customized to meet the specific needs of the members and the intended users.

Sample portions from both format types are attached. It is suggested that members survey the intended user groups to ascertain the appropriate format. If a government chart is modified or reproduced, members are advised to obtain any government permissions that may be required.

Members shall consider that space in the bridges and wheel-houses of many vessels is limited, and some captains prefer a small size custom chart or document such as a leaflet or flyer from which they can transfer relevant information to their navigation charts or plotters.

An additional advantage of custom produced charts is that they can be designed to specifically cover designated fishing grounds or cable areas. For example, in European waters, charts can be produced to correspond with government fisheries regulation zones such as the International Council for the Exploration of the Sea (ICES) areas, which are well known to fishing industries. Members may find that both formats are necessary, depending on all the conflicting uses of the sea bed at the cable grounds.

Charts shall be kept as simple as possible with no unnecessary features as these may detract from the cable information. For custom charts, the addition of navigation gridlines shall be carefully considered, weighing the accuracy of such grids and the distraction from the intended purpose of the chart such grids may create. On overprinted charts, care must be taken not to obscure any information that the intended users may find valuable. For example, it may not be appropriate to obscure submarine canyons or fishing banks with overprinted text, logos or symbols.

2.3. Date

Charts shall be clearly marked with a date and issue number.

2.4. Cable Coverage

Accurate positions of all known cables shall be depicted, however certain cables may be depicted differently to enhance the utility of the chart.

2.5. Position Lists

A Route Position List may be provided so that cable route information can be easily be transferred to electronic navigation plotters.

2.6. Symbols

Wherever possible, the use of standard symbols, such as those approved by the International Hydrographic Organization (IHO) shall be used. When non standard symbols are used, their meaning shall be conveyed by a clear legend.

Examples of IHO symbols include:

2.6.1. In Service Submarine Telecommunications Cables - IHO monochrome "wavy line".

2.6.2. Out of Service Submarine Telecommunications Cables - IHO broken monochrome "wavy line".

2.6.3. Submarine Power Cables - IHO "wavy line with flash".

Suggested non IHO symbols:

2.6.4. Recovered Cables - Recovered cables would not generally be shown on custom charts, unless the purpose of the chart is to communicate the recovery to sea bed users. On overprinted charts, it may be necessary to over print the route originally depicted on the government chart with a symbol indicating cable recovery, until the chart is re-issued by the government with the cable route removed. Suggested symbol - heavy dotted line.

2.6.5. Planned Cable/Cable Under Installation - A "short dash" line. Additionally, the cable may be labelled as "Planned" or "Under Construction" with an appropriate date.

2.6.6. Cable Protection Zone or Cable Buffer Zone - Members may wish to designate a safe working distance on either side of the cable route or a Government may legislate an enforceable protection zone. Such a zone indicates the recommended distance that sea bed users who conduct activity likely to cause damage to a submarine cable shall keep away from the cable. The depiction of this zone also serves to highlight the location of the cable. The width of the zone can be determined by the cable owner, taking into account such factors as water depth, navigational accuracy and estimated accuracy at the time of cable installation. Suggested symbol in most coastal areas - translucent red zone two nautical miles wide (one nautical mile to either side of the cable). For a protection zone encompassing multiple cables the zone usually forms a rectangle with one nautical mile boundary on the outermost cables.

2.7. Supplementary Information

Members may wish to print various types of supplementary information on their charts, including:

2.7.1. Emergency contact information and other useful contact information.

2.7.2. Instructions to assist mariners who may become entangled in a cable or other emergency procedures

2.7.3. Chart ordering information.

2.7.4. Legal Disclaimers such as "Not To Be Used For Navigation".

2.7.5. System construction information or other cable specifications. Illustrations or diagrams to convey visual information.

2.8. Logos

The ICPC logo and individual company logos may be printed if desired.

2.9. Paper Quality

Chart paper, finish and ink shall be suitable for use in the marine environment.

3. REFERENCES

Document Number	Title

4. DEFINITIONS

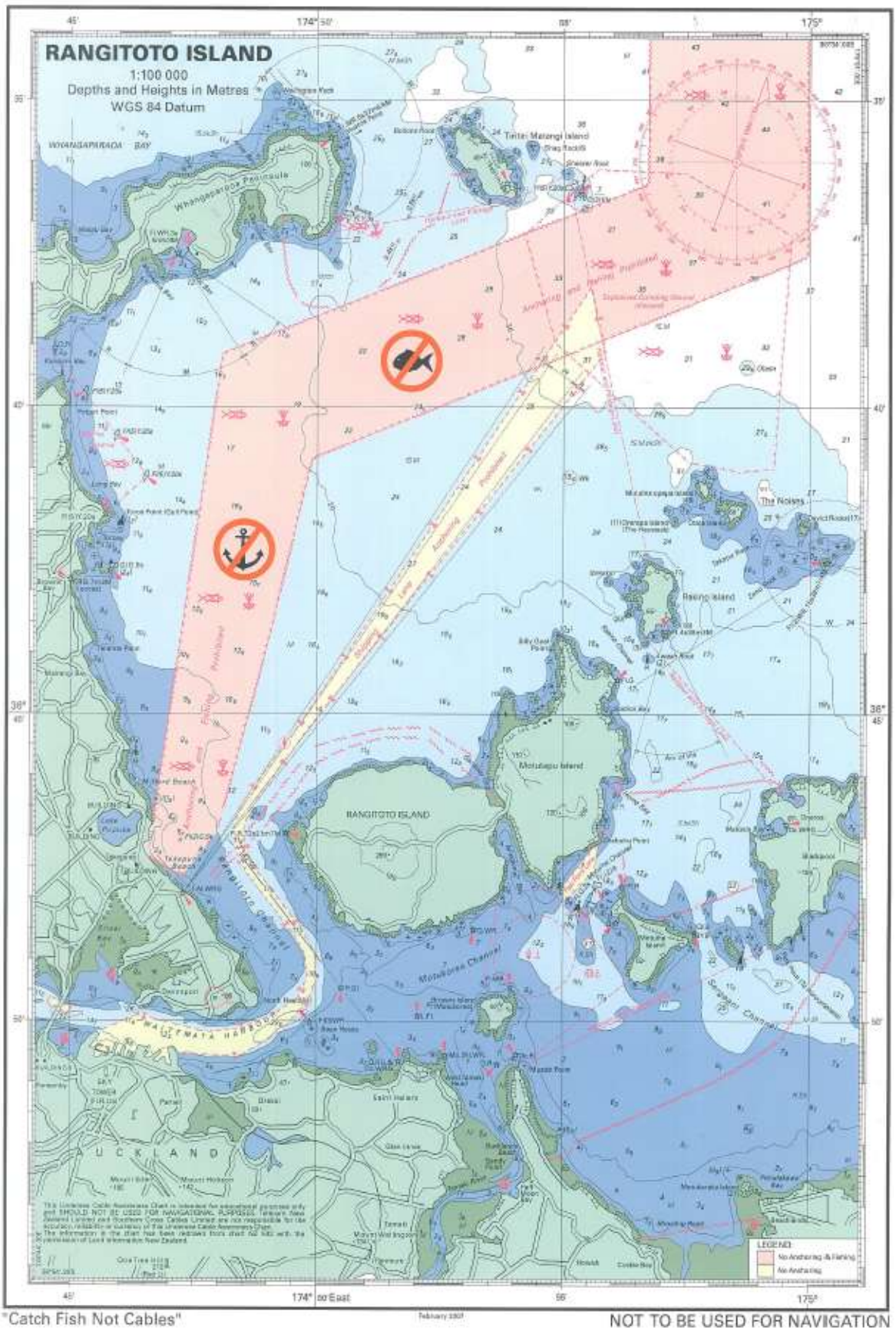
The following words, acronyms and abbreviations are referred to in this document.

Term	Definition

5. ATTACHMENTS

Document Number	Title
-	Chart Samples from Sprint and Kingfisher Charts Charts from Telecom New Zealand and Southern Cross Cables

Cable Awareness Chart example 1 – Front Page



Cable Awareness Chart example 1 – Back Page

Cable Awareness Chart example 2

Australian Government
Australian Communications and Media Authority

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Australia's regulator for broadcasting, the internet, radiocommunications and telecommunications www.acma.gov.au

Submarine Cable Protection Zones Off Sydney

Submarine communications cables are important to Australia, keeping us in touch with the rest of the world. They allow us to email friends, phone family and conduct business across the globe. These cables lie on the sea floor and damage caused at sea can have serious consequences for the flow of information to and from Australia.

Key submarine cables land at Narrabeen Beach and Clovelly/Tamarama Beach off Sydney. To protect this vital communications infrastructure from damage, two new cable protection zones have been declared by the Australian Communications and Media Authority (ACMA) and come into effect on 1 October 2007. The two zones are:

The Northern Sydney Protection Zone - *Submarine Cable (Northern Sydney Protection Zone) Declaration 2007*

Extending from Narrabeen Beach out to about 40 nautical miles offshore or 2000 metres water depth, this zone protects the northern branches of the Australia Japan Cable and the Southern Cross Cable, and covers an area one nautical mile either side of each cable as well as the area between the cables.

The Southern Sydney Protection Zone - *Submarine Cable (Southern Sydney Protection Zone) Declaration 2007*

Extending from Clovelly/Tamarama Beach out to about 30 nautical miles offshore or 2000 metres water depth, this zone protects the southern branches of the Australia Japan Cable and the Southern Cross Cable, and covers an area one nautical mile either side of each cable as well as the area between the cables.

In protection zones, activities that may cause cable damage are prohibited or restricted. ACMA consulted extensively with marine users to develop the prohibitions and restrictions and many activities may continue in the zones. Some activities are restricted depending on gear specifications, such as anchor weight, trip release mechanisms or line breaking strain.

It is an offence to cause damage to any submarine cable in a protection zone or to engage in prohibited activities or contravene a restriction. From **1 October 2007, penalties of up to $66,000 and/or imprisonment for up to 10 years** will apply to offences committed in both the Northern Sydney Protection Zone and the Southern Sydney Protection Zone.

In addition, civil damages may be claimed by parties who suffer loss or damage as a result of someone damaging a cable in a protection zone, or engaging in prohibited activities or contravening a restriction.

ACMA recommends that parties seek independent legal advice about compliance and have regard to the Zone Declarations and their Explanatory Statements to ascertain whether planned activity will be affected.

Further information about the zones, including brochures, a complete list of prohibitions and restrictions, location information (geographic coordinates and GIS shape files) and maps are available on the ACMA website at **www.acma.gov.au/subcables** or by calling **1300 856 337**.

WHAT ARE SUBMARINE CABLES?

Submarine telecommunications cables are cables that lie on the sea floor and connect Australia with other countries. Australia's submarine communications cables carry over 99 per cent of our international voice and data traffic and are a vital component of our national infrastructure.

WHY ARE SUBMARINE CABLES IMPORTANT?

Submarine cables are vulnerable to damage and breakage, which can cause serious consequences for the flow of information to and from Australia. In recent years, trawling and anchoring have severed key submarine cables off Sydney. Cable damage can cause data loss, significant delays of data transmission and severe financial loss to businesses, cable owners and individuals who rely on communication links with other countries.

WHAT ARE THE SUBMARINE CABLE PROTECTION ZONES AND WHY DO WE NEED THEM?

Schedule 3A of the *Telecommunications Act 1997* gives ACMA the power to declare protection zones over submarine cables of national significance. Within these protection zones, activities that could damage submarine cables are prohibited or restricted.

ACMA HAS DECLARED TWO PROTECTION ZONES OFF NORTHERN AND SYDNEY BEACHES

From 1 October 2007, two protection zones declared by ACMA over nationally significant submarine cables landing in Sydney will commence. The two zones are:

The Northern Sydney Protection Zone

This zone extends from Narrabeen Beach to 40 nautical miles off shore and protects the Northern branches of the Australia Japan Cable and Southern Cross Cable, including the area between these two cables.

The Southern Sydney Protection Zone

This zone extends from Tamarama and Clovelly Beaches to 30 nautical miles off shore and protects the Southern branches of the Australia Japan Cable and Southern Cross Cable, including the area between these two cables.

These high capacity cables are vital to our national interests as they connect Australia with Japan, Asia, New Zealand and Northern America.

SOME MARINE ACTIVITIES WILL BE AFFECTED BY THE PROTECTION ZONES

The prohibitions and restrictions for the two Sydney zones are designed to minimise the risk of damage to submarine cables and have been developed through extensive consultation with marine users. Many recreational fishing and diving activities will be unaffected by the protection zones.

A list of what you can and can't do in the Sydney zones is set out in the tables over the page. It is recommended that you read the zone declarations, the *Submarine Cable (Northern Sydney Protection Zone) Declaration 2007* and the *Submarine Cable (Southern Sydney Protection Zone) Declaration 2007* to determine if your planned activity is a prohibited or restricted activity.

PENALTIES APPLY

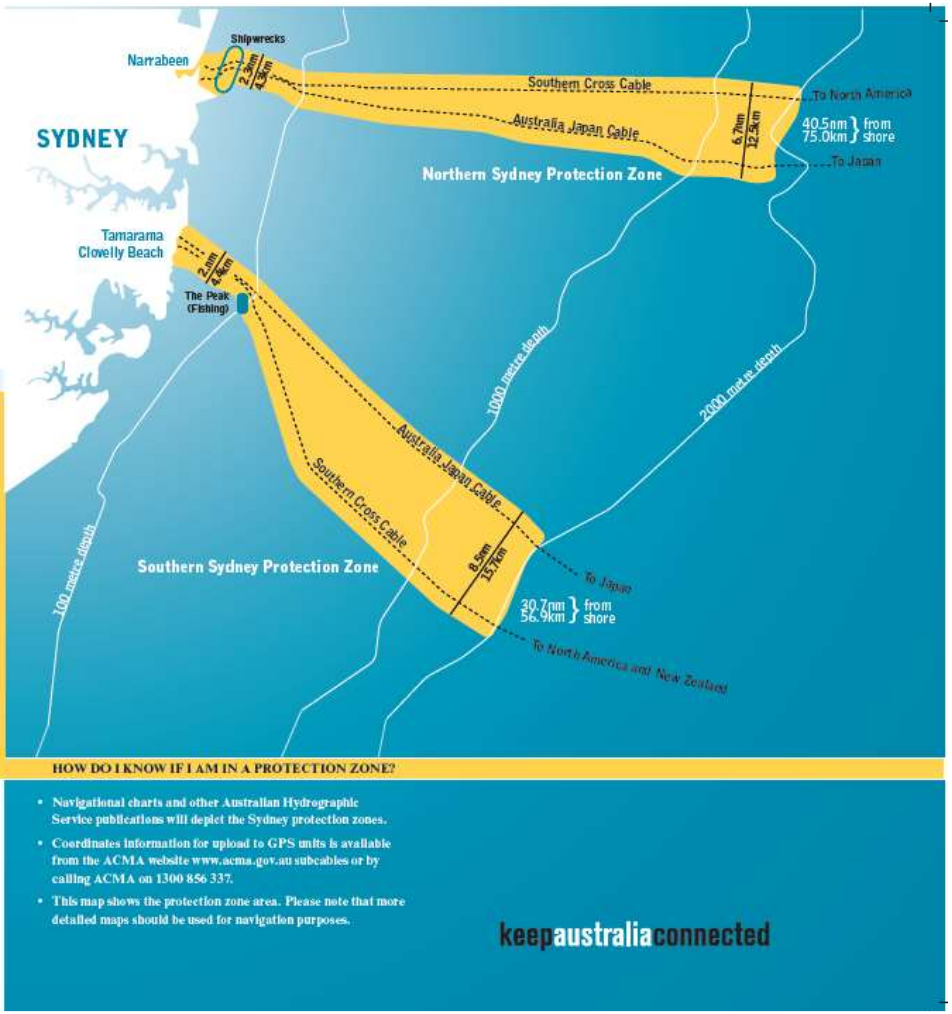
Within the Sydney protection zones, there are other communications cables as well as the Australia Japan Cable and the Southern Cross Cable. It is an offence to cause damage to any submarine cable in a protection zone. It is also an offence to engage in conduct that is prohibited or contravenes a restriction in a protection zone. Penalties for contravention include fines of up to $66,000 for an individual (or up to $330,000 for a corporation) and/or ten years imprisonment for an individual. The Australian Federal Police are responsible for enforcing these offences.

Parties who suffer loss or damage as a result of a person causing damage to a cable in a protection zone, or engaging in prohibited conduct or contravening a restriction in a protection zone, may also claim civil damages in the Federal Court of Australia against that person.

ACMA recommends that the parties seek their own independent legal advice about compliance and have regard to the relevant legislation such as the Zone Declarations and their Explanatory Statements to ascertain whether planned activity will be affected.

NEED FURTHER INFORMATION?

For more information about the Sydney protection zones please phone **1300 856 337** or visit **www.acma.gov.au/subcables**.



HOW DO I KNOW IF I AM IN A PROTECTION ZONE?

- Navigational charts and other Australian Hydrographic Service publications will depict the Sydney protection zones.
- Coordinates information for upload to GPS units is available from the ACMA website www.acma.gov.au subcables or by calling ACMA on 1300 856 337.
- This map shows the protection zone area. Please note that more detailed maps should be used for navigation purposes.

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Cable Awareness Chart Example 3

Cable Awareness & Emergency Procedures

Please keep clear and do not damage submarine telecoms cables. You risk the loss of your gear and catch, and international communications can be disrupted. These cables carry high voltages and can be dangerous to life. It is an offence to wilfully damage submarine cables.

The coasts of the United Kingdom, Ireland and Europe have a large number of submarine cable systems. When fishing gear fouls a cable the results can be expensive and dangerous. Many cables have high breaking strains, some over 70 tonnes.

If gear is caught in these you may cause damage to nets and lines as well as disrupting international communications.

If you suspect that you have fouled a submarine telecoms cable the following action should be taken

1. If weights are excessive and you suspect you are fast to a cable, DO NOT endanger your vessel and crew by attempting to recover your gear.
2. Carefully plot your ships position as accurately as possible.
3. Advise your Coastguard station of your situation or call the 24 hour Emergency Number and state that an incident is occurring concerning an underwater Submarine Telecommunications Cable.

This chart is provided to indicate the route positions of the TAT 14 K submarine telecommunications cable system. It is given for assistance and guidance. The Sea Fish Industry Authority nor Sprint accept liability for any inaccuracies however caused.

Kingfisher®

Special Charts Services

Produced by the Kingfisher Information Service of the Sea Fish Industry Authority on behalf of Sprint.

www.kingfishercharts.org

Useful Addresses

NetWork Services
(Sprint Fisheries Liaison)
Tel: +44 (0) 1404 46323
Mob: +44 (0) 7702 693660
Email: colinrichards@networkmarine.fsnet.co.uk

The Kingfisher Information Service
Sea Fish Industry Authority
Humber Seafood Institute
Origin Way, Europarc
Grimsby, DN37 9TZ
Tel: +44 (0) 1472 252307

SFPA Fishery Office (Peterhead)
Keith House, Seagate, Peterhead, AB42 1JP
Tel: +44(0) 1779 472254

SFPA Fishery Office (Inverness)
Longman House, 28 Longman Road, Inverness, IV1 1SF
Tel: +44(0) 1463 713955

SFF
24 Rubislaw Terrace, Aberdeen, AB10 1XE
Tel: +44(0) 1224 646944

HM Coastguard

Shetland MRSC
The Knab, Knab Road, Lerwick, Shetland, ZE1 0AX
Tel: +44 (0) 1595 692976

Aberdeen MRCC
Marine House, Blaikies Quay, Aberdeen, AB11 5PB
Tel: +44 (0) 1224 592334

Stornoway MRSC
Clan Macquerrie House, Battery Point, Stornoway
Isle of Lewis, HS1 2RT
Tel: +44 (0) 1851 702013

24hr Emergency Contact No:
+44 (0) 8457 555 999

www.kis-orca.eu

SUBMARINE CABLE AWARENESS CHART

Sprint

TAT 14 (Segment K) North Western Approaches

Edition August 2013

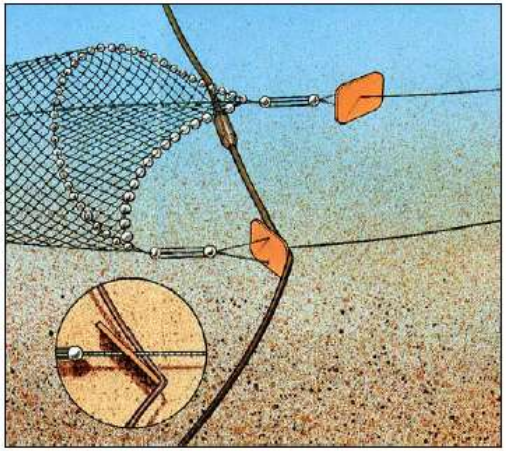
Submarine Cables and the Risk of Snagging

Subsea (submarine) telecommunications cables have been laid on the seabed since the eighteen fifties and although the target is to bury the cable (ideally to a depth of 0.8 metres), this is not always possible because of seabed conditions and the entire cable route should, therefore, be treated with the utmost caution.

The vessels most at risk are those with towed gear, bottom and beam trawls and dredges. Static gear, whilst not entirely free from risk, is less likely to be affected.

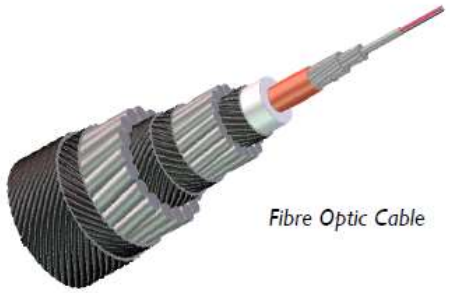
In the event of becoming entangled with the cable there is a high probability of damage to or loss of fishing gear as well as fishing time and catch. If attempts are made to lift the cable to the surface or to pull the gear free there is the very real risk of loss of stability eventually leading to capsize with resultant loss of life.

Trawl door fouling a cable



Submarine Cables and Repair Hazards

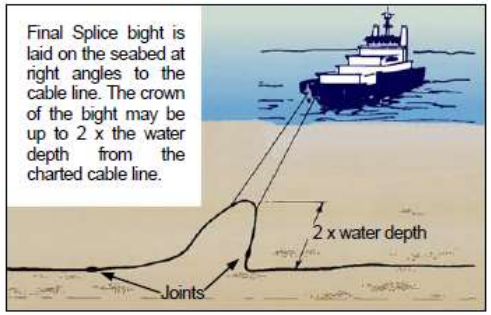
Fibre Optic cable consists of an inner optical core encased within a copper clad high tensile steel wire rope insulated with polyethene. In water less than 1500 meters deep, protection is added against fishing and anchor damage in the form of external steel wire armour.



Fibre Optic Cable

If a cable is broken by fishing, anchoring or other seabed activities it will be repaired. The damaged section is recovered to the surface and a new section spliced in. This spliced area represents a risk to fishermen, there will be slack cable on the seabed equal to approximately twice the water depth and post repair burial is not as effective as installation burial.

Plan View of Typical Repair



How to Reduce the Risks Associated with Submarine Cables

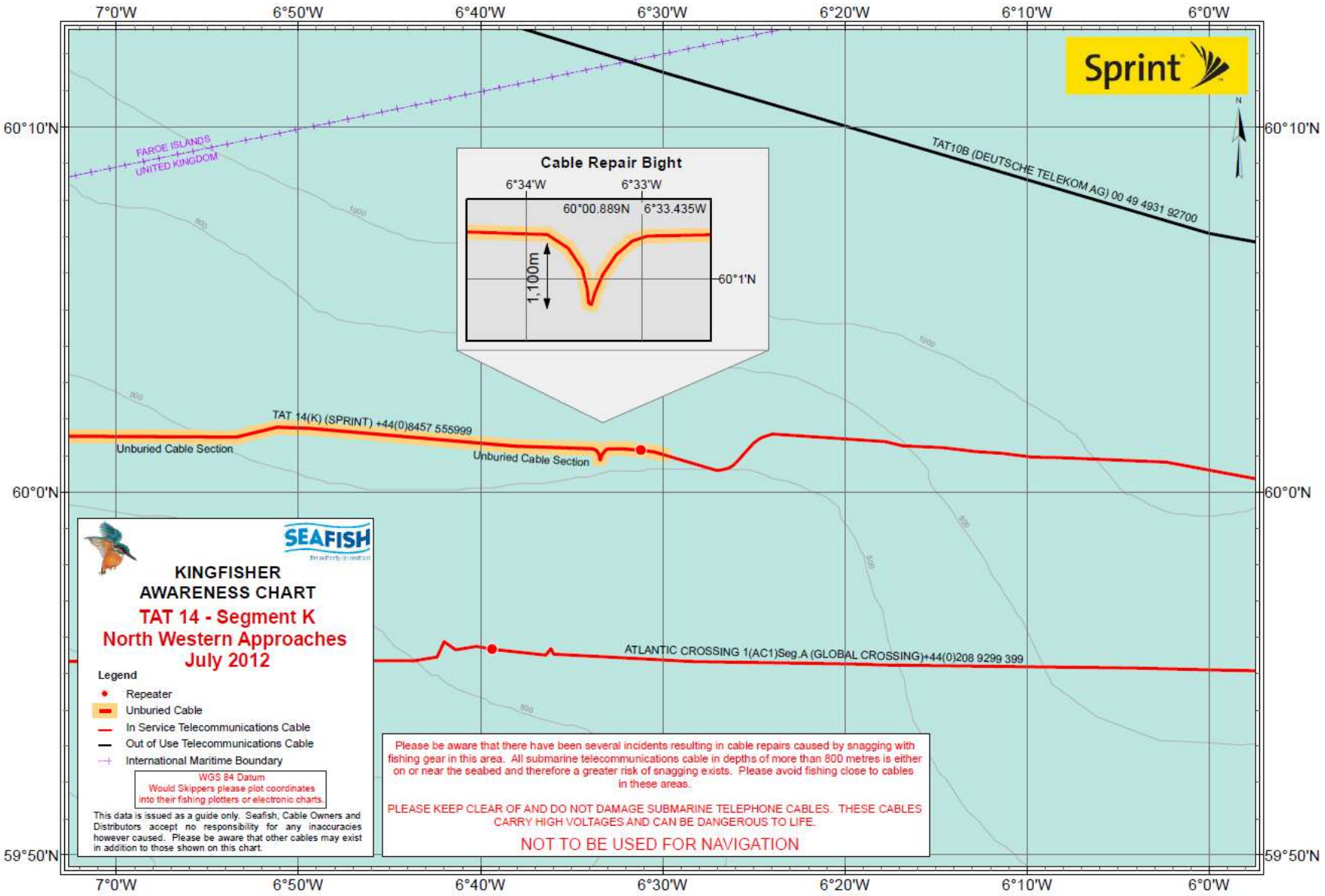
1. Immediately plot the route co-ordinates on your paper charts and/or enter them into your fishing plotter.
2. Avoid fishing directly over the cable route with heavy bottom contact gear.
3. Remember that areas of bare or outcropping rock and where the cable crosses other cables and pipelines, are the areas where the cable is most likely to be least buried.

The closer to the surface a telecommunications cable is lifted when fouled by fishing gear, the more danger there is to the fishing vessel

If it is thought prudent to slip or cut one of both warps or bridles in an attempt to clear a cable from the fishing gear, always lower the gear to the seabed first. Never attempt to slip anything bearing excessive weight.

Cable Maintenance Vessel

Vessel: **CS Léon Thévenin**


7°0'W
6°50'W
6°40'W
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60°0'N
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Sprint
FAROE ISLANDS
UNITED KINGDOM
TAT10B (DEUTSCHE TELEKOM AG) 00 49 4931 92700
Cable Repair Bight
6°34'W
6°33'W
60°00.889N
6°33.435W
1,100m
60°1'N
TAT 14(K) (SPRINT) +44(0)8457 555999
Unburied Cable Section
Unburied Cable Section
ATLANTIC CROSSING 1(AC1)Seg.A (GLOBAL CROSSING)+44(0)208 9299 399
SEAFISH
KINGFISHER
AWARENESS CHART
TAT 14 - Segment K
North Western Approaches
July 2012
Legend
Repeater
Unburied Cable
In Service Telecommunications Cable
Out of Use Telecommunications Cable
International Maritime Boundary
WGS 84 Datum
Would Skippers please plot coordinates into their fishing plotters or electronic charts.
This data is issued as a guide only. Seafish, Cable Owners and Distributors accept no responsibility for any inaccuracies however caused. Please be aware that other cables may exist in addition to those shown on this chart.
Please be aware that there have been several incidents resulting in cable repairs caused by snagging with fishing gear in this area. All submarine telecommunications cable in depths of more than 800 metres is either on or near the seabed and therefore a greater risk of snagging exists. Please avoid fishing close to cables in these areas.
PLEASE KEEP CLEAR OF AND DO NOT DAMAGE SUBMARINE TELEPHONE CABLES. THESE CABLES CARRY HIGH VOLTAGES AND CAN BE DANGEROUS TO LIFE.
NOT TO BE USED FOR NAVIGATION