NAV5

USER GUIDE
July 2000

VESSEL IDENTIFICATION INFORMATION

Name _____

Call Sign _____

MMSI _____

NAV5 S/N _____

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INTRODUCTION

NAVTEX is a method of transmitting navigational warnings and weather forecasts from designated coast radio stations. All English language transmissions are made on 518 kHz and each station is allocated several time 'slots' during the day, when it is permitted to transmit. These are normally at four hourly intervals. The only exceptions to this are gale warnings and search and rescue messages, which may be transmitted at any time.

Reception of NAVTEX is normally limited to an area of 200 - 300 miles radius around each transmitting station, although considerably greater ranges can be possible at night.

Subject to IMO approval, additional local language transmissions may be made on 490 kHz and tropical transmissions may be made on 4209.5 kHz. This latter frequency has a much greater range and is less susceptible to static noise than the other two frequencies.

The NAV5 has been designed to the latest European and International specifications to provide up to date weather and navigation warning information to commercial vessels. It meets IMO requirements under GMDSS and is designed for simplicity of operation. It will provide reliable printed information day after day within designated NAVTEX coverage areas.

Installation is straightforward. Connect the NAV5 to a 12 or 24 volt DC supply and connect the antenna. Switch it on, and it will start printing NAVTEX messages without further manual intervention.

Left in this state, the NAV5 may overwhelm you with information. It can therefore be set up to print only those stations and message categories you want to receive and which are applicable to the area in which you are sailing.

Normally, routine messages are repeated at four hourly intervals. Provided that the NAV5 is left running 'repeat message' transmissions are not printed again within three days (72hours).

Permanent installation of the NAV5 can be made with the bulkhead-mounting bracket provided. Alternatively, the optional FMT-2 flush panel mounting kit may be purchased.

- A NAVTEX antenna should be mounted 'elevated' clear of metal objects in a location where it cannot easily be damaged.

OPERATION

INITIAL OPERATION

Switch on the NAV5 by pressing the **P** power button

The LCD display back light will come on

The LCD data display will show:-

ICS	NAV-5
LOG	EMPTY

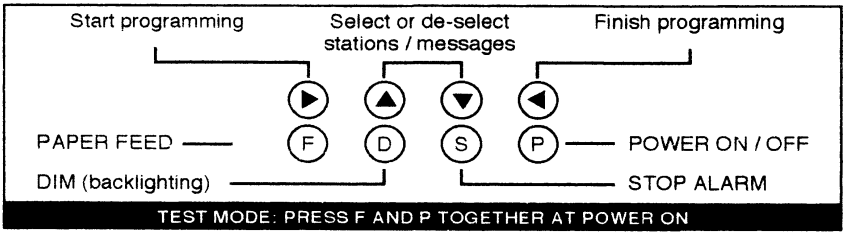
The NAV5 is now ready to receive NAVTEX messages.

The factory default setting is for all NAVTEX stations and message categories to be printed.

To change the settings, refer to **SET UP** section**.**

Set-up controls

The main functions of the front panel controls are shown in the following diagram:-



Changing the Paper Roll

The NAV5 is supplied with one roll of paper fitted. When this paper roll is completely used up, the NAV5 will sound an alarm and printing will stop. Early warning that the paper is about to run out is given by red stripes on the paper.

Should the paper run out in the middle of a message, information will not be lost provided the NAV5 is **not** switched off.

- To remove the remaining paper, open the door by pushing it in to release the door latch. The door will then open downwards.

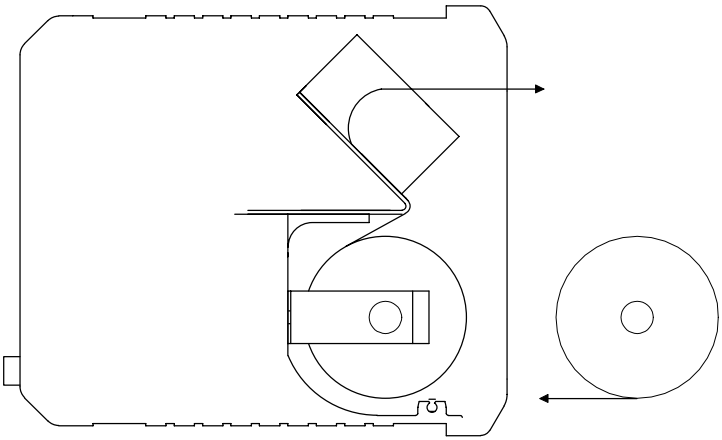
- Remove the old paper roll and tear off the paper where it enters the printer mechanism. Remove the plastic spindle. Press the **F** button to feed any remaining paper through the print mechanism.

DO NOT PULL THE PAPER THROUGH THE PRINTER AS THIS MAY DAMAGE THE PRINT HEAD.

- Place the new roll onto the spindle with the paper emerging from the top of the roll towards you.

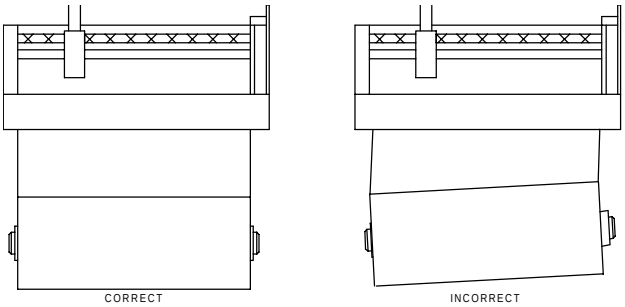
- Turn the paper upwards through 180 degrees and insert it into the slot at the base of the printer mechanism, (which is above the paper roll), as far as it will go.

It is important that the edge of the paper is straight and undamaged and that the paper is dry.



- Push the **F** button to feed the paper until it clears the door exit.
- Push the **S** button, to print any stored messages.

Check that the paper roll is correctly aligned with the print mechanism.



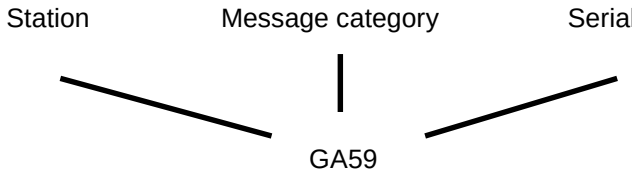
Paper roll type is 'heat sensitive paper' with heat sensitive side outermost. Paper roll size is 80mm wide x 20m total length of paper. Overall maximum diameter of roll not greater than 42mm, roll mounting spindle internal diameter is 12mm.

New supplies of paper rolls can be ordered from ICS dealers or directly from ICS. Quote order code: NAVTEX Rolls. This specifies a box of eight rolls of paper.

NAVTEX Message type selection

At the beginning of each NAVTEX message there is a message header, this identifies the source and nature of message using an identity code.

For example GA59 :-



This identifies which station has transmitted the message and the nature of the message.

It is possible to select the NAVTEX stations you wish to receive messages from and to restrict certain message categories.

NAVTEX stations set up procedure

Enter the NAVTEX set up mode by pressing the ▶ button, this brings up the transmitting station selection display.

STN: ABCDEFGHIJ
KLMNOPQRSTUVWXYZ

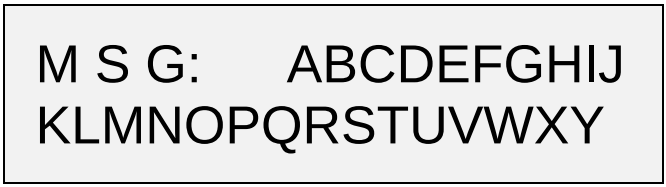
Press ▶ followed by either the ▲ or the ▼ buttons, one push of either button will select, a second push will deselect.
deselected stations are indicated by a 'dash' – .

Each NAVTEX transmitting station has its own identifying letter. A list of these can be found in the NAVTEX Station Designations table section of this manual.

If you do not know which stations cover your area, start by leaving them all stations selected. You will soon find which stations are relevant to you.

NAVTEX message category set up procedure

- Once you have completed the NAVTEX station selection, press ◄ to change to the message category selection screen



Message categories are identified by a single letter.

Press ► followed by either the ▲ or the ▼ buttons, one push of either button will select, a second push will deselect.
deselected stations are indicated by a dash **– .**

- Message categories, A,B,D and L cannot be deselected.

Press ◄ to store the NAVTEX station and message category selections.

NAVTEX message categories types

A	Navigation warnings
B	Meteorological warnings
C	Ice reports
D	Search and rescue information and pirate attack warnings
E	Meteorological forecasts
F	Pilot service messages
G	DECCA information
H	LORAN information
I	OMEGA information
J	SATNAV information
K	Other electronic navaid information
L	Navigational warnings additional to letter A
V	Amplifying details to navigational warnings initially broadcast under A
Z	No messages on hand

Message categories A, B, D and L cannot be de-selected. International regulations preclude these message categories from being de-selected.

SYSTEM ALARMS

The alarm signal within the NAV5 will sound under the following circumstances:-

- INCORRECT KEY PRESSED
- PAPER OUT
- LOW BATTERY (Power supply voltage is less than 9 volts)
- VITAL NAVTEX MESSAGE

Press the **S** key to stop the alarm.

Note:
Remove the cause of the alarm first.

DUAL CHANNEL OPERATION

** Only applicable when the NAV5 second channel option is installed*

Follow these instructions in conjunction with the normal set-up instructions, in some places the following instructions take precedence.

The ▲ and ▼ keys on the keypad are used to switch the LCD display between showing RX-A (the standard 518kHz receiver) and RX-B (the second receiver). The LAST MSG display shows the identity number of the last message received on that receiver and the two-dot signal indicator will flash if there is a signal being received from that receiver.

- Pressing the ▲ or ▼ will display the corresponding information for the other receiver.

When the ▶ key is pressed, the set up mode for the selected receiver will be started. This enables the stations and message types required for that receiver to be set.

The two receivers are set up independently.

Press ▶ followed by either the ▲ or the buttons, one push of either button will select, a second push will deselect or vice versa.
deselected stations / categories are indicated by a 'dash' **– .**

Press ◀ to store the NAVTEX station and message category selections.

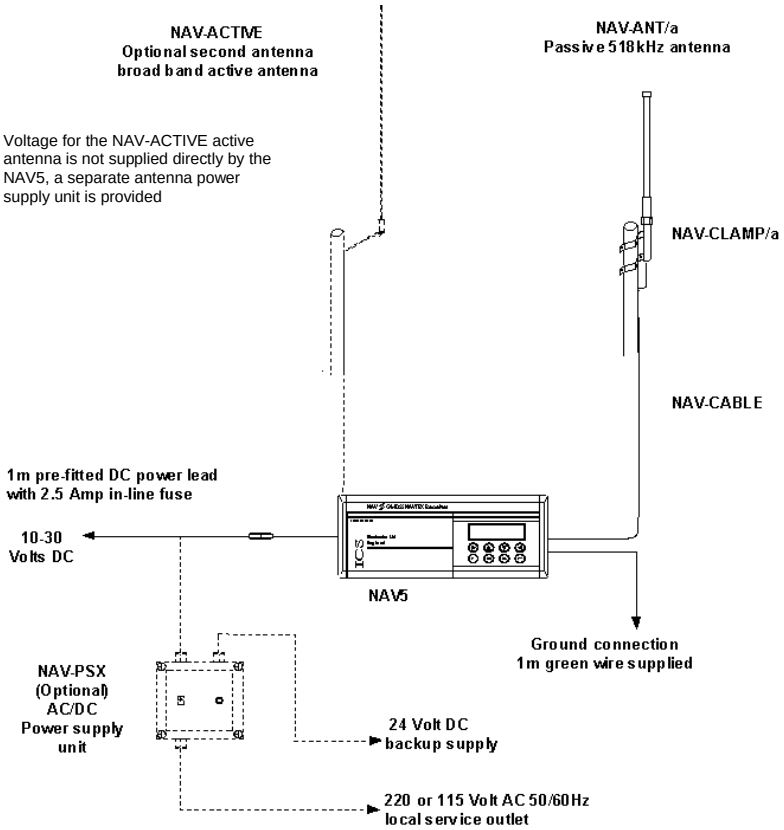
Note:
Although the ▲ and ▼ keys are used to select which receiver is shown on the display, it is important to realise that both receivers are actively receiving signals all the time.

<u>If messages are being transmitted at the same time on both channels, both messages will be received and printed.</u>

Messages from RX-B are identified separately on the printout.

INSTALLATION

NAV5 system overview



MECHANICAL MOUNTING

The standard bulkhead mounting bracket can be used to mount the NAV5 above or below a horizontal (or near horizontal) surface. If the NAV5 is to be mounted through a flat panel, it is advised that you purchase the FMT-2 flush mounting kit option.

DO NOT MOUNT THE NAV5 IN A POSITION WHERE SEA SPRAY CAN REACH IT, OR WHERE IT MAY BE EXPOSED TO DIRECT SUNLIGHT.

ELECTRICAL CONNECTIONS

A connection must be made to a 12 or 24 volts DC supply via a circuit breaker capable of supplying at least 2 amps. Connection should be to the ships 'radio battery' and be in accordance with GMDSS requirements.

- Connections are made directly to the screw terminals on the NAV5 mating connector at the rear of the unit using the 1m length cable provided.
- Use cable ties to restrain the wiring from any vibration, which might weaken it over a prolonged period. The connecting cables should be restrained from movement by securing them to the rear of the NAV5 (bracket) or to adjacent metalwork.

Safety Warning

The ICS NAV5 has been designed and manufactured to be completely safe when used in accordance with the instructions given in this manual. To ensure that the complete installation is safe, it is essential that a fuse or circuit breaker is installed in the supply cable as described in the Installation Section of this manual.

The NAV5 is supplied with a DC power cable and in-line 2.5 amp fuse. It is essential that this fuse is included in the installation and that the Green wire connected to pin 2 (with antenna screen) should be connected to a nearby (hull) grounding point.

INTERFACE CONNECTIONS

The NAV5 rear panel connections are as follows:-

PIN	FUNCTION
1	Antenna A
2	Antenna A screen & Vessels grounding earth point
3	Antenna B
4	Antenna B screen
5	Not Used
6	Not Used
7	Power input negative
8	Power input positive
9	Auxiliary Alarm Contact
10	Auxiliary Alarm Contact

NOTES:

Pin 1 is located closest to the right hand edge of the NAV5 case, looking from the rear.

- When using a second antenna, link terminals 4 to 2 for grounding purposes.
- The auxiliary alarm contact is capable of switching up to 24 volts DC at up to one amp and is volt free.
- The power supply input is isolated from the case and antenna, it must remain within the range 10-30 volts DC at all times.

To ensure the best possible protection of the NAV5 from static electricity or nearby lighting strikes, the pre-fitted green grounding wire (pin 2) must be connected to a nearby (hull) electrical grounding point.

NAVTEX ANTENNA

Several different antenna types are recommended for the NAV5:-

- The NAV-ANT/a passive antenna with NAV-CLAMP/a mounting bracket and NAV-CABLE 20m coaxial cable kit.
- ANT4/a passive antenna with 1" x14 t.p.i. mounting screw thread and 10m of pre-fitted coaxial cable
- NAV-ACTIVE broad band active antenna, with antenna power unit with 20m of coaxial cable. *Recommended for dual channel use.*
- BB-1 long wire or un-tuned whip antenna 50Ω coupling transformer with 15m of coaxial cable.

The NAV5 must be used with a low impedance 50Ω antenna.

A 'miss matched' or 'high impedance' whip or wire antenna should not be used or the operational range of NAVTEX reception will be greatly reduced.

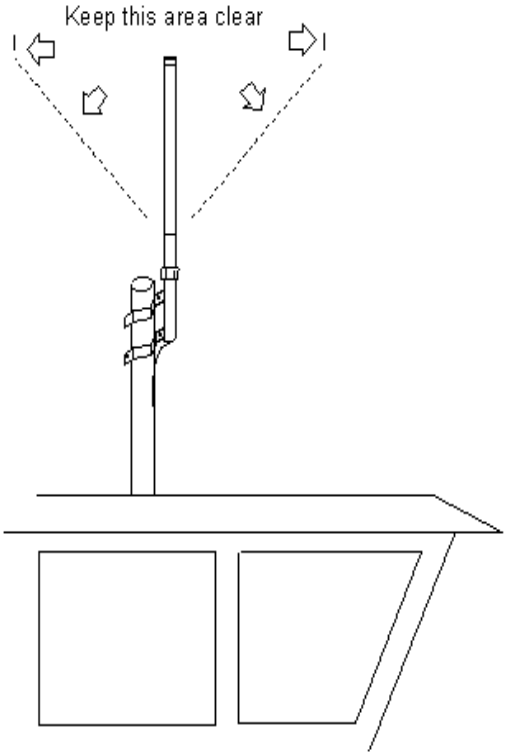
- If a 'Wire' or 'long whip' antenna is used with the NAV5 it must be fitted with a 50Ω matching transformer.

If the NAV5 has a 'Dual Channel' option fitted, refer to the Dual Channel antenna installation instructions near the end of this section.

NAVTEX antenna must be mounted clear of obstructions well away from other antennas by at lest 0.5 metres.
Ensure that they cannot be snagged by mooring warps or running rigging or engulfed by green water.
They should always be mounted vertically.

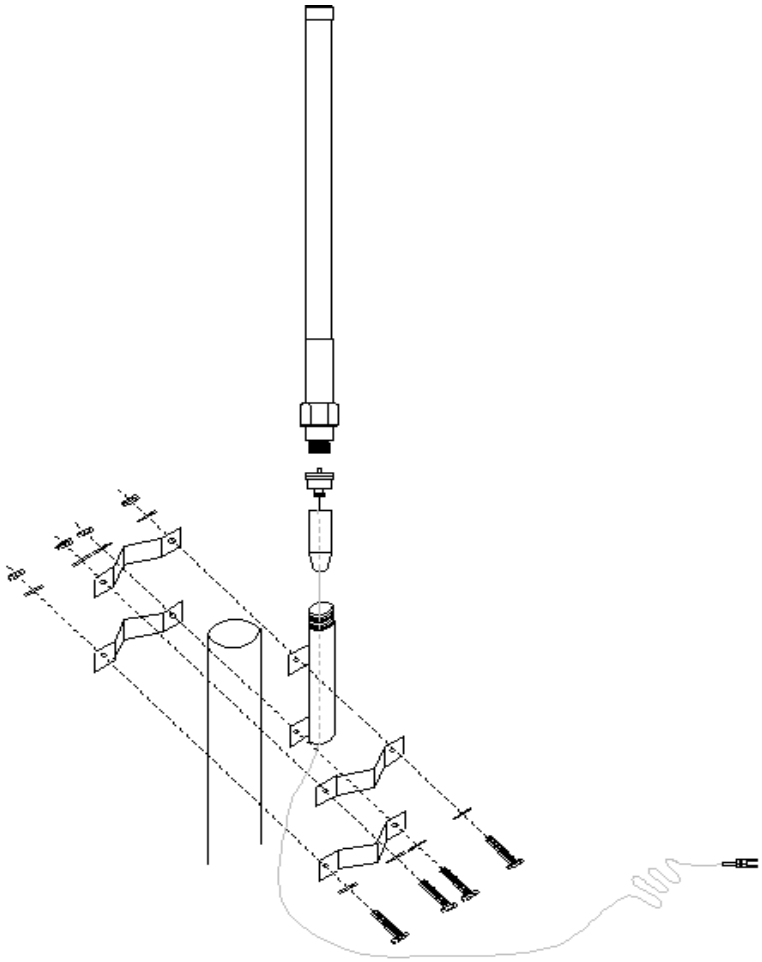
INSTALLATION OF NAVTEX ANTENNA

NAVTEX antenna should be mounted vertically, in an elevated position. Metal, rigging or other antenna must not be located in the 'NO GO cone' surrounding the upper part.



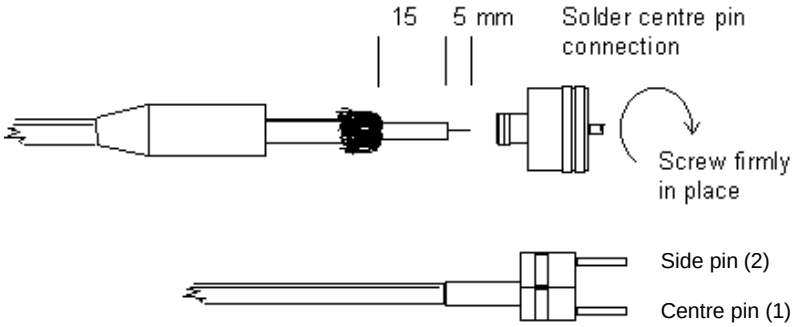
Installation procedure, NAV-ANT/a, NAV-CABLE, NAV-CLAMP/a

Start the antenna cable installation from the NAV5 (lower) end first. Where the cable passes through bulkheads or decks, waterproof deck glands should be installed. Securely fasten the cable against vibration using plastic cable tie wraps.



Typical installation of NAV-ANT/a, NAV-CLAMP/a and NAV-CABLE

Antenna connection
Pass the cable though the 'black plastic boot', prepare the end of the cable as shown in the diagram, folding the cable braid back and screwing the PL259 connector firmly in place. To ensure a good connection it is recommended that the centre pin is soldered.



NAV-CABLE assembly detail

NAV5 connection
Connect the centre pin of the antenna cable to terminal 1 and the side pin to terminal 2 of the NAV5 rear connector.

If required, the NAV-CABLE may be extended with 50ohm coaxial cable and connectors. The maximum cable length should not exceed 100m. Ensure that any cable joints are well secured and waterproofed using self-amalgamating (rubber) tape.

NAV-ACTIVE INSTALLATION

- Securely mount the NAV-ACTIVE antenna to a vertical surface or pole using the bracket provided, route the connecting cable though to the NAV5 using cable glands to pass though bulkheads as required.

Connect the NAV-ACTIVE antenna output coaxial cable centre core to Terminal 1 of the NAV5 connector block and the screen to Terminal 2.

- Connect the ‘positive’ supply brown wire and the ‘negative’ supply Blue wire from the AAX1 Antenna Power Supply Unit to the vessels 12 or 24Vdc power supply. *Refer to the fitting instructions packed with the antenna for further information.*

Note:
The NAV5 does <u>not</u> directly provide power for an Active Antenna.

DUAL CHANNEL NAV5 NAVTEX ANTENNA
Two versions of second channel receiver are currently available for the NAV5, 490kHz(National Language) or 4209.5 kHz (Tropical Area). If one of these options is fitted, the NAV5 must be used with a wide band antenna that covers both 518kHz and the second channels operating frequency.

- Two separate antennas can be connected to the NAV5.

DUAL ANTENNA INSTALLATION
If the NAV5 has been supplied with an ICS NAV-ANT/a 518kHz Passive NAVTEX Antenna: -

Connect the NAV-ANT/a antenna cable to terminals 1 and 2 of the NAV5 rear connector block.

- Connect the second antenna (that covers the operating frequency of the second receiver) to terminals 3 and 4, add a short wire link connecting terminal 4 to terminal 2 for grounding purposes.

DUAL CHANNEL NAV-ACTIVE INSTALLATION
A single NAV-ACTIVE broadband active antenna may be used to feed both receiver circuits:-

Connect the NAV-ACTIVE antenna 'output' coaxial cable centre core to terminal 3 of the NAV5 connector block and the screen to terminal 2.

- Link terminals 1 and 4 with a short length of insulated wire.
- Connect the positive brown wire and the negative Blue wire from the AAX1 Antenna Power Supply Unit to the **+** and **-** terminals of the vessels 12 or 24Vdc power supply. *Refer to the fitting instructions packed with the antenna for further information.*

Note:
The NAV5 does <u>not</u> directly provide power for an Active Antenna.

NAV-PSX

AC MAINS- BATTERY POWER SUPPLY UNIT OPTION

The NAV-PSX power supply is provided to permit operation of the ICS NAV5 NAVTEX receiver from a 220/240v or 110/120v AC supply, with the option of simultaneous connection to a 24volt DC battery supply.

- The equipment will normally draw current only from the AC supply, but will switch automatically to the DC supply if the AC supply fails.

NAV-PSX installation notes
Connect the pre-fitted three-core power supply cable to a local AC service outlet, the brown wire to the 'live' terminal, Blue to 'neutral' and green/yellow to the safety earth.

- The NAV-PSX is normally supplied set for 220/240v operation.
  If required, set the NAV-PSX for 110/120v operation by changing the push-on tags on the side of the transformer. Refer to diagram label fixed inside the NAV-PSX for details.

Connect the NAV5 to the NAV-PSX.
Pass NAV5 power cable(s) through the top cable gland and connected to the terminal strip as indicated.

- Connect the NAV-PSX +OUT and -OUT terminals to NAV5 terminals 8 and 7 respectively.

If a 24VDC back-up supply is required, a cable from the ship's 24volt-battery supply (not supplied) should be connected to the NAV-PSX terminal strip as indicated.

- Back-up battery 24Vdc supply connects to +IN and -IN terminals on the NAV-PSX.

An additional ground wire may be connected between terminal 2 on the NAV5 and the ground terminal on the NAV-PSX.

SELF TEST

If you have any doubts as to whether the NAV5 is working correctly run the self-test.

'Self Test' is selected by holding down the **F** button while the NAV5 is switched on using the **P** button.

The NAV5 will print out the test results, then start normal operation.

If all tests are passed, a printout will appear as shown:

```
pqrstuvwxyz{"}~
HIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmno
!"#$%&'()*+,-./0123456789:;<=>/?@ABCDEFG

ROMDATE          :          May 12 1993
ROM              :    ICS   NAV5  V1.3

DISPLAY          :          PASS
RAM              :          PASS
CPU              :          PASS
RXA-I            :          PASS
RXA-Q                  :          PASS
PAPER SENSOR           :          PASS
HEAD RESISTANCE        :          C   *
```

* Either A,B or C will show here.

The first three lines of this print out are simply a test of the printer. The ROMDATE and ROM lines may change in line with product development. The DISPLAY line tests the LCD display module. The RAM and CPU lines test the memory and central processor. The RXA-I and RXA-Q lines test the two signal paths in the radio receiver.

The PAPER SENSOR tests whether the unit can recognise the presence of paper in the roll holder. The HEAD RESISTANCE letter is for service use only, and should match the head resistance mark on the printer assembly.

This self-test is carried out automatically each time the unit is switched on, but the results are not reported unless a fault is detected.
Three beeps mark the progress of this test.

As an additional receiver confidence test, the NAV5 also flashes two small squares at the right hand side of the display whenever it is receiving a NAVTEX signal, even if the message is not selected for printing.

TROUBLE SHOOTING GUIDE

CHECK THAT:-

- The antenna is mounted vertically, and is sited clear of obstructions.
- The vessel is operating within the coverage area of a NAVTEX transmitter.
- The NAVTEX station(s) selected are transmitting, two small squares at the right hand side of the NAV5 display show whenever a NAVTEX signal is received.
- The required NAVTEX station and message categories have not been de-selected in the NAV5 set-up menu.

ANTENNA
Check that the antenna is clear of obstructions and has not suffered external damage. Check that the antenna cable is not damaged.

RECEIVER
Perform a system self test- refer to SELF TEST section for details.

- Observe at scheduled transmission time for two small squares at the right hand side of the NAV5 display, these flash whenever a NAVTEX signal is received.

PRINTER
If there is no sign of life from the printer after power up and a printer fault is shown on the LCD display, check that there is no paper jammed in the printer.

- If the printer operates but nothing is printed, check that the paper roll is of a type recommended by ICS and that the 'heat sensitive side' of the paper is uppermost (as that paper exits the door, test with a 'hot' item).

PAPER OUT
In the case of a "Paper Out" Alarm, replace paper roll.

DEFAULT RESET
To reset the NAV5 to the factory default settings, 'all' NAVTEX station and message categories to on.

- Turn the unit off
- Hold down the **S** button while pushing the **P** power button.
- The NAV5 will sound a bleep, and load default settings.

SELF TEST
Run the NAV5 self test, refer to 'self test' section for details.

Should any item on the self test fail, turn the NAV-5 off and on again and repeat the system self test. Should any item on the self test list fail a second time, contact your suppler for advice or call the ICS technical help line for assistance.

ICS Technical help line +44 (0) 1903 738706

NAV5 Options list

- NAV-ROLLS box of eight paper rolls
- NAV-ANT/a 518kHz remote passive antenna
- NAV-CLAMP/a mounting bracket for NAV-ANT/a
- NAV-CABLE 20 20m antenna cable kit for NAV-ANT/a, including connectors
- ANT4/a remote passive antenna with 10m or pre-fitted cable
- NAV-ACTIVE broad band active antenna

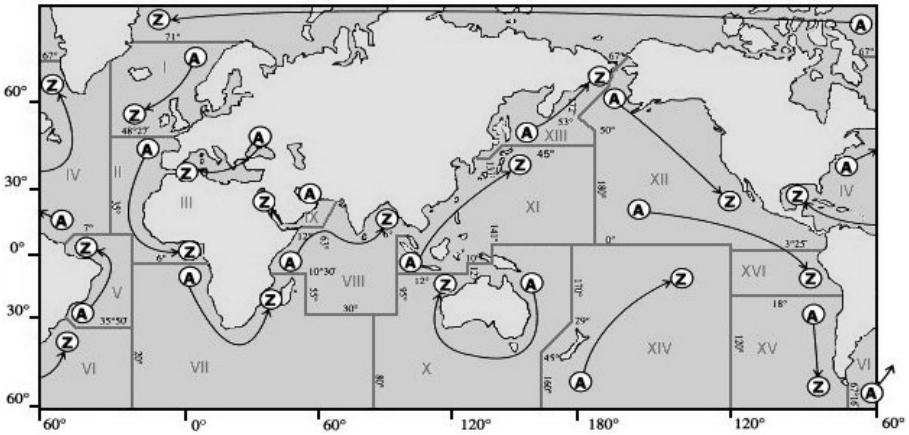
  (required for dual channel operation)
- BB-1 50Ω long wire antenna transformer
- Second receiver modules 490kHz or 4209.5kHz
- Cyrillic language option
- NAV-PSX Mains/battery auto standby power unit (220/110v AC and 24v DC input with 13.8 v DC output)
- FMT-2b flush panel mounting kit
- CIS-CERT Russian Register Certificate
- CHI-CERT Chinese Register Certificate

SPECIFICATION

Receiver	
Receive Frequency:	518 kHz
Sensitivity	<2 microvolts
Frequency Stability	+/- 10 Hz
Antenna Input	50 ohms
NAVTEX reception	
Conforms to	ITU-R 540-2, ETS 300-065,
Environmental	
Meets (relevant parts)	BS EN 60945
Printer	
Type	Thermal, 40 characters per line
Character Matrix	7 x 5
Paper Roll	80mm wide x 20m long
Paper Out	Audible and visual alarms
Front Panel	Two line back lit LCD display Membrane key pad
Controls	Power ON/OFF Display backlight dim Paper feed Stop alarm Four programming keys
Connections	Power in Antenna inputs Auxiliary alarm output
Alarms	Vital message receipt Paper Out
Temperature range	0 to + 40 °C
Humidity	0 to 95% , non-condensing
Mounting	Shelf/bulkhead mount standard, Panel mount option
Weight	1.5 kg
Power	10 - 30 volts DC 1.5 watts in standby 2.5 watts printing

Specifications may be changed without notice.

NAVAREA WORLD MAP



NAVTEX Station Designations

NAVTEX Stations in Area I:

Country	Station Name	Operational	Station ID	Range (nm)
BELGIUM	OOSTENDE	YES	T	110
BELGIUM	OOSTENDE (Thames)	YES	M	110
ESTONIA	TALLINN	YES	U	250
ICELAND	REYKJAVIK	YES	R	550
IRELAND	VALENTIA	YES	W	400
IRELAND	MALIN HEAD	YES	Q	400
NETHERLANDS	IJMUIDEN	YES	P	110
NORWAY	BODO	YES	B	450
NORWAY	ROGALAND	YES	L	450
NORWAY	SVALBARD	YES	A	450
NORWAY	VARDO	YES	V	450
RUSSIA	ARKHANGELSK	YES	F	280
RUSSIA	MURMANSK	YES	C	140
SWEDEN	BJUROKLUBB	YES	H	300
SWEDEN	GISLOVSHAMMER	YES	J	300
SWEDEN	GRIMETON	YES	D	299
UK	CULLERCOATS	YES	G	270
UK	NITON	YES	S	270
UK	NITON (N.France)	YES	K	270
UK	PORTPATRICK	YES	O	270

NAVTEX Stations in Area II:

Country	Station Name	Operational	Station ID	Range (nm)
ACORES	HORTA	YES	F	640
FRANCE	CORSEN	YES	A	320
ISLAS CANARIAS	LAS PALMAS	YES	I	400
MOROCCO	CASABLANCA	NO	M	180
PORTUGAL	MONSANTO	YES	R	530
SPAIN	FINISTERRE	YES	D	400
SPAIN	TARIFA	YES	G	400

NAVTEX Stations in Area III:

Country	Station Name	Operational	Station ID	Range (nm)
BULGARIA	VARNA	YES	J	350
CROATIA	SPLIT	YES	Q	85
CYPRUS	TROODOS	YES	M	220
EGYPT	ALEXANDRIA	NO	N	400
FRANCE	LA GARDE	YES	W	250
GREECE	IRAKLION	YES	H	280
GREECE	KERKYRA	YES	K	280
GREECE	LIMNOS	YES	L	280
ISRAEL	HEFA (Haifa)	YES	P	200
ITALY	AUGUSTA	NO	S	320
ITALY	CAGLIARI	NO	T	320
ITALY	ROMA	NO	R	320
ITALY	TRIESTE	NO	U	320
MALTA	MALTA	YES	O	400
RUSSIA	NOVOROSSIYSK	YES	A	300
SPAIN	CABO LA NAO	YES	X	300
TURKEY	ANTALYA	YES	F	300
TURKEY	ISTANBUL	YES	D	300
TURKEY	IZMIR	YES	I	300
TURKEY	SAMSUN	YES	E	300
UKRAINE	MARIUPOL	YES	B	280
UKRAINE	ODESSA	YES	C	280

NAVTEX Stations in Area IV:

Country	Station Name	Operational	Station ID	Range (nm)
BERMUDA	BERMUDA	YES	B	280
CANADA	FUNDY/YARMOUTH	YES	U	300
CANADA	LABRADOR	YES	X	300
CANADA	SEPT -ILES	YES	C	300
CANADA	ST JOHNS	YES	O	300
CANADA	SYDNEY	YES	Q	300
CANADA	THUNDER BAY	YES	P	300
CANADA	WIARTON	YES	H	300
USA	BOSTON	YES	F	200
USA	MIAMI	YES	A	240
USA	NEW ORLEANS	YES	G	200
USA	PORTSMOUTH	YES	N	280

NAVTEX Stations in Area V:

Country	Station Name	Operational	Station ID	Range (nm)

NAVTEX Stations in Area VI:

Country	Station Name	Operational	Station ID	Range (nm)
ARGENTINA	BAHIA BLANCA	YES	P	280
ARGENTINA	BUENOS AIRES	YES	R	560
ARGENTINA	COMODORO RIVADAVI	YES	O	280
ARGENTINA	MAR DEL PLATA	YES	Q	280
ARGENTINA	RIO GALLEGOS	YES	N	280

NAVTEX Stations in Area VII:

Country	Station Name	Operational	Station ID	Range (nm)
NAMIBIA	WALVIS BAY	YES	B	380
SOUTH AFRICA	CAPE TOWN	YES	C	500
SOUTH AFRICA	DURBAN	YES	O	500
SOUTH AFRICA	PORT ELIZABETH	YES	I	500

NAVTEX Stations in Area VIII:

Country	Station Name	Operational	Station ID	Range (nm)
INDIA	BOMBAY	YES	G	299
INDIA	MADRAS	YES	P	299

NAVTEX Stations in Area IX:

Country	Station Name	Operational	Station ID	Range (nm)
BAHRAIN	HAMALA	YES	B	300
EGYPT	SERAPEUM (Ismaili	YES	X	400
IRAN	BANDAR ABBAS	YES	F	300
IRAN	BUSHEHR	YES	A	299
OMAN	MUSCAT	YES	M	270
PAKISTAN	KARACHI	YES	P	400
SAUDI ARABIA	DAMMAN	YES	G	390
SAUDI ARABIA	JEDDAH	YES	H	390

NAVTEX Stations in Area X:

Country	Station Name	Operational	Station ID	Range (nm)

NAVTEX Stations in Area XI:

Country	Station Name	Operational	Station ID	Range (nm)
CHINA	DALIAN	YES	R	250
CHINA	FUZHOU	NO	O	250
CHINA	GUANGZHOU	YES	N	250
CHINA	SANYA	YES	M	250
CHINA	SHANGHAI	YES	Q	250
HONG KONG	HONG KONG	YES	L	299
INDONESIA	AMBON	YES	B	299
INDONESIA	JAKARTA	YES	E	299
INDONESIA	JAYAPURA	YES	A	299
INDONESIA	MAKASSAR	YES	D	299
JAPAN	KUSHIRO	YES	K	400
JAPAN	MOJI	YES	H	400
JAPAN	NAHA	YES	G	400
JAPAN	OTARU	YES	J	400
JAPAN	YOKOHAMA	YES	I	400
MALAYSIA	MIRI	YES	T	350
MALAYSIA	PENANG	YES	U	350
MALAYSIA	SANDAKAN	YES	S	350
MARIANA ISLANDS	GUAM	YES	V	100
SINGAPORE	SINGAPORE	YES	C	299
SOUTH KOREA	BYUNSAN	NO	W	200
SOUTH KOREA	CHUKPYUN	NO	V	200
TAIWAN	KEELUNG	YES	P	0
THAILAND	KRUNG THEP	YES	F	200
VIETNAM	DA NANG	NO	W	400

VIETNAM	HAIPHONG	YES	P	400
VIETNAM	HO CHI MINH-CITY	YES	X	400

NAVTEX Stations in Area XII:

Country	Station Name	Operational	Station ID	Range (nm)
ALASKA	KODIAK	YES	J	200
CANADA	PRINCE RUPERT	YES	D	300
CANADA	TOFINO	YES	H	300
HAWAIIAN ISLANDS	HONOLULU	YES	O	350
PUERTO RICO	ISABELLA	YES	R	200
USA	ASTORIA	YES	W	216
USA	LONG BEACH (	YES	Q	350
USA	SAN FRANCISCO	YES	C	350
USA	SAVANNAH	YES	E	240

NAVTEX Stations in Area XIII:

Country	Station Name	Operational	Station ID	Range (nm)
RUSSIA	BERINGOVSKIY	NO	E	0
RUSSIA	KHOLMSK	YES	B	280
RUSSIA	MAGADAN	YES	D	0
RUSSIA	PETROPAVLOSK	YES	C	280
RUSSIA	PROVIDENIA BUKHTA	YES	F	0
RUSSIA	VLADIVOSTOK	YES	A	280

NAVTEX Stations in Area XIV:

Country	Station Name	Operational	Station ID	Range (nm)

NAVTEX Stations in Area XV:

Country	Station Name	Operational	Station ID	Range (nm)
CHILE	ANTOFAGUSTA	YES	A	300
CHILE	ISLA DE PASCUA	YES	F	300
CHILE	MAGALLENES	YES	E	300
CHILE	PUERTO MONTT	YES	D	300
CHILE	TALCAHUANO	YES	C	300
CHILE	VALPARAISO	YES	B	300

NAVTEX Stations in Area XVI:

Country	Station Name	Operational	Station ID	Range (nm)
PERU	CALLEO	YES	U	200
PERU	MOLLENDO	YES	W	200

Notes:

All 518 kHz NAVTEX transmissions are in English language.

Local language NAVTEX services are available in some parts of the World on 490kHz and 4209.5 MHz.

No liability can be accepted for any inaccuracies or omissions in this NAVTEX stations table, although every care has been taken to make it as complete and accurate as possible.

For updated NAVTEX station listings information refer to the current UK 'Admiralty List of Radio Signals, Volume 5' or equivalent national publications.

- ICS maintains a world-wide NAVTEX stations database that can be accessed via the ICS Internet Web site: *www.icselectronics.co.uk*

Certificate of Type Approval

Telecommunications Act 1984 (c.12): Section 84

Radiocommunications Agency

Page 1 of 2

APPROVAL No. : **10163**
ISSUE No. : 1

ORIGINAL CERTIFICATE DATE : 26 March 93

SUBMITTED BY :
ICS ELECTRONICS LTD
UNIT V, RUDFORD INDUSTRIAL ESTATE
FORD, ARUNDEL
WEST SUSSEX
BN18 0BD

MANUFACTURED BY :
ICS ELECTRONICS LTD
UNIT V, RUDFORD INDUSTRIAL ESTATE
FORD, ARUNDEL
WEST SUSSEX
BN18 0BD

EQUIPMENT TYPE : APPROVED EQUIPMENT
EQUIPMENT CATEGORY : MARINE
TRADE NAME : NAVTEX RECEIVER
TYPE No. : NAV-5

TEMPERATURE RANGE : 0°C to +40°C

SPECIFICATION(S)	EMISSION CLASS(ES)	CHANNEL SEPARATION(S)
ETS 300 065:1991		

TOTAL UNITS : 1

UNIT No. 1 TYPE : RECEIVER FIXED

POWER CHARACTERISTICS -
R.F. POWER :

FREQUENCY CHARACTERISTICS -
RECEIVER : 518kHz

COMMENTS : THE NAVTEX RECEIVER CONFORMS WITH IMO RESOLUTION A.525(13) AND A.694(17) AND IS SUITABLE FOR USE IN THE GMDSS.

TOTAL NUMBER OF VARIANTS : 0

CTA1 The Radiocommunications Agency is an Executive Agency of the Department of Trade and Industry DWA

Certificate of Type Approval

Telecommunications Act 1984 (c.12): Section 84

Radiocommunications Agency

APPROVAL No. : 10163
ISSUE No. : 1 ORIGINAL CERTIFICATE DATE : 26 March 93

THE SECRETARY OF STATE FOR TRADE AND INDUSTRY APPROVES FOR THE TIME BEING UNDER SECTION 84 OF THE TELECOMMUNICATIONS ACT 1984 THE EQUIPMENT DESCRIBED ABOVE PROVIDED IT COMPLIES WITH THE ABOVE SPECIFICATIONS AT ALL TIMES FOR THE PURPOSES OF : LICENCES GRANTED UNDER SECTION 1 OF THE WIRELESS TELEGRAPHY ACT 1949 AND/OR ANY EXEMPTION REGULATIONS MADE UNDER THAT SECTION.

SIGNED ON BEHALF OF THE SECRETARY OF STATE :

MARCEL ROCCIA
05 July 94

ADDRESS FOR QUERY : Radiocommunications Agency, Room 514, Waterloo Bridge House Waterloo Road, London, SE1 8UA

END OF CERTIFICATE

DECLARATION OF CONFORMITY

We, ICS Electronics Ltd.
Unit V Rudford Industrial Estate
Ford
Arundel
West Sussex
BN18 0BD

declare under our sole responsibility that the product

ICS NAV 5 (name, type or model, lot, batch or serial number)

to which this declaration relates conforms to the protection requirements of Council Directive 89/336/EEC on the approximation of the laws of the member States relating to Electromagnetic Compatibility.

A R Clemmetsen Managing Director

Ford, Arundel 23 March 1994
Place & date of issue

A R Clemmetsen B.Eng.,C.Eng., M.I.E.E.
Name and signature of manufacturer of responsible person. Identification of signatory.

NAV 5 is in general conformity with the following standard(s) or other normative documents(s).

IEC945: 1988	General requirements for marine navigational equipment
ETS 300 065	September 1992 - Radio Equipment and systems (RES): Narrow-band direct printing telegraph equipment for receiving meteorological or navigation information (NAVTEX) . Technical characteristics and methods of measurement.
ETS 300 339	June 1993 - Radio Equipment and Systems (RES) ; General Electro-Magnetic Compatibility (EMC) for radio equipments.
IEC 1000-4-2	Electrostatic discharges.
IEC 1000-4-3	Radiated, radio frequency electromagnetic field.
IEC 1000-4-6	Conducted disturbances induced by radio frequency fields.

IMMUNITY GRADE - Category C (ETS 300 339).

TECHNICAL CONSTRUCTION FILE Ref. 94/6 Date. 07 March 1994

TECHNICAL REPORT / CERTIFICATE Date. 21 March 1994

COMPETENT BODY. JRS Associates (Wireton Ltd)
59 Titchfield Road
Stubbington
Fareham
Hants
PO14 2JF
Tel / Fax +44 (0) 329 665549

(In accordance with provisions of EN 45014 and UK EMC Regulations, Statutory Instrument 1992 No. 2372).

DERA

NOTIFIED BODY
No 0191

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

CERTIFICATE OF TYPE APPROVAL

(EC Certificate of Type Examination - 96/98/EC Directive)

Applicant:-
ICS ELECTRONICS LIMITED
Unit V, Rudford Industrial Estate
Ford, Arundel
West Sussex, BN18 0BD

Manufacturer:-
ICS ELECTRONICS LIMITED
Unit V, Rudford Industrial Estate
Ford, Arundel
West Sussex, BN18 0BD

This is to certify that the applicant having submitted details of a:-

GMDSS NAVTEX RECEIVER

Of a system type known and designated as:-

ICS Navtex Receiver - Type - NAV-5

(Comprising Component parts and having technical characteristics shown on sheet 2)

having been tested and assessed; is CERTIFIED as complying with the relevant parts of:

ETS 300-065 : 1992 "Narrow-band direct-printing telegraph equipment for receiving meteorlogical or Navigational information (NAVTEX)"

BS EN 60945 : 1997 "General Requirements for marine equipment" - EMC Clauses

(being specifications for Technical Characteristics and Methods of measurements), published by the European Telecommunications Standards Institute and the British Standards Institute.

It is also RECOGNISED that the equipment conforms to performance standards not inferior to those adopted by the International Maritime Organisation, and which are contained in the relevant parts of Resolution A525(13) and Resolution A694(17).

The issue of this certificate grants approval for the time being under Section 84 of the Telecommunications Act 1984, the equipment described above, provided that it complies with the above specification at all times, for the purposes of UK licences granted under Section 1 of the Wireless Telegraphy Act 1949

The conditions of issue of this certificate are printed on the attached schedule which forms an integral part of this certificate

SIGNED

S D Roylance
Approved Signatory

DATE 1 OCT 99

Certificate Number DERA-MED-68/99-01

This Certificate is Valid for 5 Years from Date shown

DERA Fraser
Marine Type Approvals
Fort Cumberland Road, Eastney
Portsmouth, Hampshire. PO4 9LJ

Sheet 1 of 2

mca
Maritime and Coastguard Agency
The MCA is an Executive Agency of the Department of the Environment, Transport and the Regions

Under the terms of the United Kingdom Statutory Instrument, No 1957 : 1999, the Defence Evaluation and Research Agency has been Notified to the European Commission by the Maritime and Coastguard Agency as a Body authorised to conduct Type Examinations under the provisions of the European Council Directive 96/98/EC on Marine Equipment and issue Certificates of Type Approval.

DERA MED1-08/99

The DERA is an Agency of the Ministry of Defence

Certificate of Type Approval - Schedule of equipment

The applicant declared that the following units comprise the radio equipment of the designation given on page 1. These units have been assessed & tested, and satisfactory details of these units were included in the technical file. These units form systems consistent with the Item Description A1/5.3, given in Annex A1 of Directive 98/85/EC

MAIN UNIT Comprising:-

NAVTEX Receiver C/W Printer	NAV-5 (915.01)
Passive NAVTEX Antenna	NAV-ANT/A

Note:-

1. Production Facility;
   Offshore ElectronicsLimited
   Guelles Lane
   St. Peters Port
   Guernsey
   GY1 2RA CI

Technical Characteristics

FREQUENCY OF OPERATION	TRANSMIT:	N/A
	RECEIVE:	518kHz
CHANNELS		N/A
MODULATION		N/A
DSC CLASS		None
TEMPERATURE RANGE		-15°C to +55°C - Internal Units -25°C to +55°C - Antenna Unit
POWER CHARACTERISTIC		None (Receive only)

Conditions of Issue of this certificate are printed overleaf.

DERA Fraser
Marine Type Approvals
Fort Cumberland Road, Eastney
Portsmouth, Hampshire. PO4 9LJ

Sheet 2 of 2 Certificate Number DERA-MED-68/99-01

DERA MED1-08/99

The DERA is an Agency of the Ministry of Defence