Aviation

ENGLISH

For ICAO compliance

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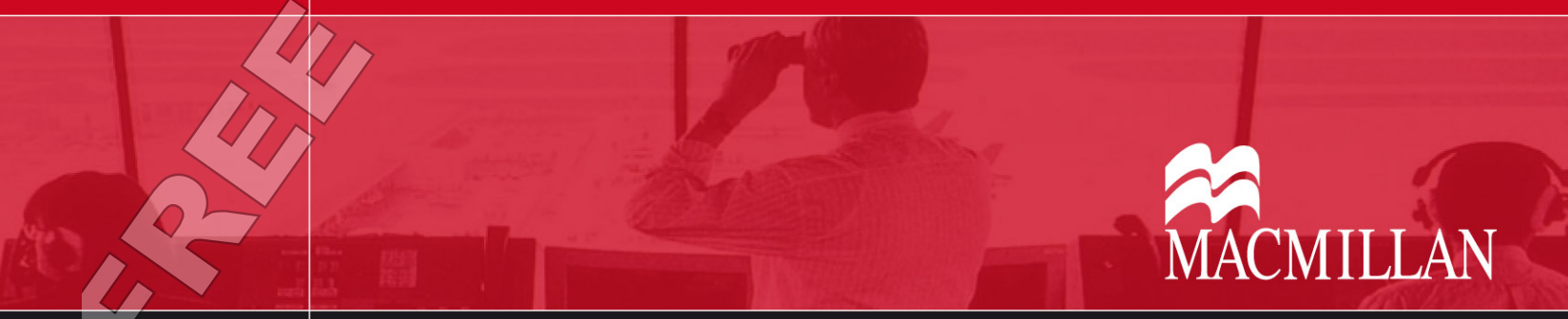


MACMILLAN

UNIT 2

LOST

Section one – Across the Pacific

1 Work in pairs. Look at the map and photograph. What particular problems could a pilot of this type of aircraft have on a long flight across an ocean?

2 Match the words below with the definitions a–f.

calculate **track** **fix** **endurance** **chart** **compass** **destination** **en route**

a the longest time an aircraft is able to fly without stopping _____
b a map used for planning and marking a route _____
c on the way; on the line that your journey follows _____
d a piece of equipment that shows your direction _____
e the line on a map that an aircraft follows _____
f the place you are travelling to _____
g a position in space, usually on a flight plan _____
h to use mathematics to find out something _____

3 Read the text about the flight on the opposite page. Label the pilot's route on the map.

4 Complete the pilot's flight plan.

5 Read the text again and answer the questions.

1 Who did the pilot work for?
2 What navigational equipment did he have on board?
3 Why did he leave Pago Pago at 0300?
4 Why did he fly on his compass from Ono-I-Lau to Norfolk Island?
5 When did the pilot realize there was a problem?

Flight plan

AIRCRAFT	(1) _____
FLIGHT ORIGIN	Oakland, California
FLIGHT DESTINATION	Australia
PERSONS ON BOARD	1
ENDURANCE	(2) _____
ESTIMATED FLIGHT TIME	(3) _____
CRUISING SPEED	(4) _____
TIME OF DEPARTURE FROM PAGO PAGO	(5) _____
DISTANCE TO NORFOLK ISLAND	(6) _____

Solo flight to Norfolk Island

In 1978, pilot Jay E. Prochnow was working for an aircraft sales company in Oakland, California. An experienced civil and military pilot, Prochnow was given the task of delivering a Cessna 188 single-handed from Oakland, to Australia. Because the flight covered thousands of miles over open ocean, the aircraft was fitted with extra fuel tanks for the journey. Apart from charts and a compass, the only navigation equipment he had was an ADF for picking up the HF signals of NDBs scattered across the tiny islands of the Pacific Ocean. At the time, this crossing was a long trip even for big jets. For a single-engine aircraft with one crew, this was a long and dangerous mission.

After a stopover in Hawaii, he completed the second leg of the journey on schedule, and arrived on the Samoan island of Pago Pago without incident. The pilot rested for one day before he began the third leg of the trip, and he spent his time on the island preparing for the long and tiring flight ahead. The charts showed a distance of almost 1,500 nm to Norfolk Island. Prochnow calculated a flying time of 15 hours minimum, cruising at 110 kt in good VFR conditions with a light wind. He decided to carry maximum fuel and he filled the tanks to give a total endurance of 22 hours.

He planned his flight well. He departed Pago Pago at 0300, and with 15 hours of daylight in front of him, he could make visual contact with the fixes and his destination below him.

Using the NDBs, Prochnow navigated successfully to the fix of the island of Ono-I-Lau, almost directly en route. Now his task was to fly the remaining 850 nm of empty ocean to Norfolk Island with no navigation aids at all. Now he flew by compass alone. A few hours later he came into range of the Norfolk NDB, and he followed the heading indicated by the ADF. As he approached the ETA he looked carefully for the island, but it wasn't in sight.

6 Work in pairs. What tips can you think of for pilots planning to fly long-distance in a light aircraft? Make a list. Then compare with the other pairs.

Functional English – Explaining abbreviations

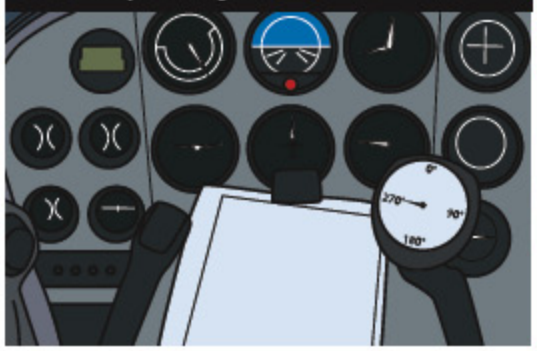
1 Here are some common expressions for asking or saying what abbreviations mean. Do you know what these abbreviations stand for?

What does NDB ***stand for****?* *It* ***stands for*** _____ – _____ _____.
What does ADF ***mean****?* *It* ***means*** _____ _____ _____.
What is VFR ***short for****?* *It's* ***short for*** _____ _____ _____.

2 Work in pairs. You are going to practise saying and explaining abbreviations. Student A go to p 104. Student B go to p 107.

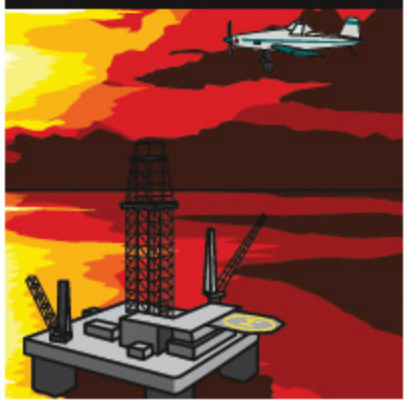
Section two – Finding Flight N45AC

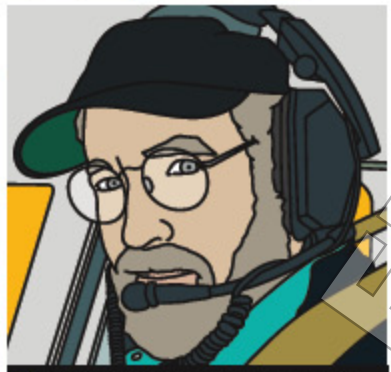
a Wilco. My heading is 274°.



b The sun is setting now, and it is 0752 zulu.

c I can see a light. I think it's an oil rig.





d MAYDAY. MAYDAY. MAYDAY. Auckland Control. N45AC. I'm lost.

e We received news of your situation. We are offering assistance.

1 Look at the pictures of what happened next in the Prochnow story. Put them in the correct order.

1___ 2___ 3___ 4___ 5___

2 07,08,09 Listen and check your answers.

3 07,08,09 Listen again and circle the correct answer.

1 Prochnow contacted
   a other aircraft in the area
   b Auckland ATC for help.

2 A commercial jet made
   a radio contact
   b visual contact.

3 Both aircraft flew towards the sun to establish their
   a heading
   b position.

4 Captain Vette tried to establish Prochnow's exact position using Prochnow's
   a radio signal
   b transponder.

5 They established the co-ordinates for
   a Prochnow
   b Norfolk Island.

Vocabulary – Co-ordinates

1 Listen again and complete the co-ordinates.

08

Vette Turn towards the sun and report your heading.

Prochnow Wilco. My heading is (1) _____.

09

Vette N45AC. Sunset on Norfolk Island is 0730 zulu. That means you are (2) _____ and (3) _____ of Norfolk Island.

Vette Your coordinates are (4) _____. You are (5) _____ from Norfolk Island.

2 10 Listen and repeat these directions and co-ordinates.

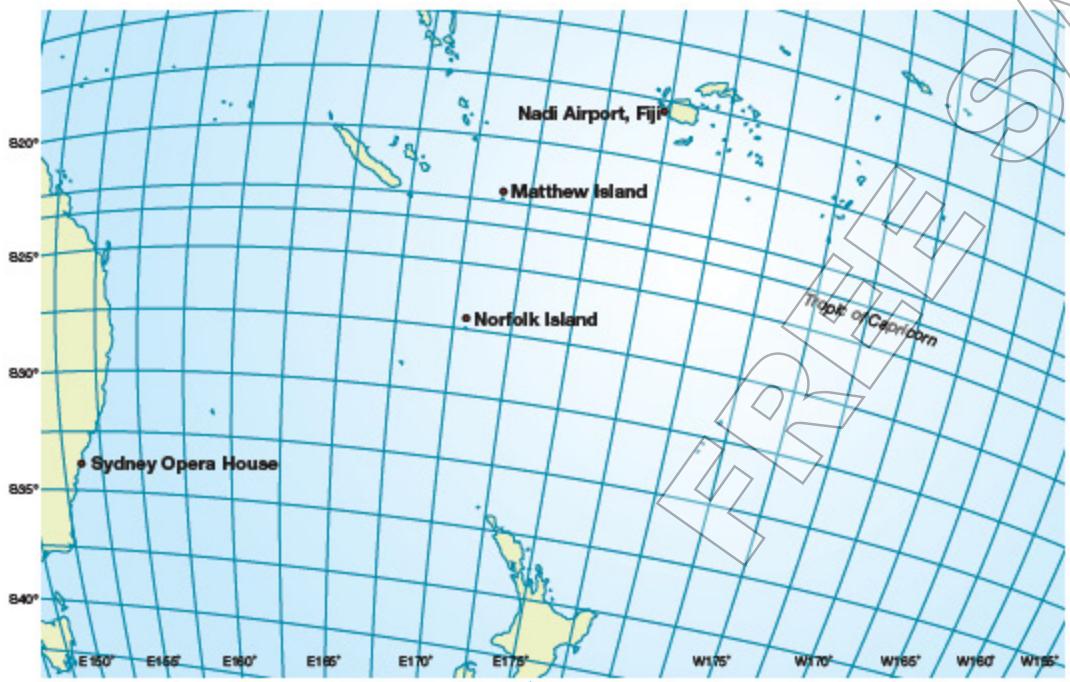
north south east west south-east north-west south-west north-east
274° 56°E 30°S 170° 21'E 14°32'40.25"N

3 Work in pairs. Student A look at the next page, Student B look at p 108.

Student A Ask student B what places are at the following co-ordinates.
Write the names of the places in the approximate position on your map.

1	31°03'44.28"S,	170° 21'07"E	3	20 38'59.26"S	178°42'00.04"E
2	14°16'02.16"S	170°42'.39.81"E	4	36°55'23.43"S	174°45'16.22"E

Example
What do you have at three-one degrees, three minutes, four-four decimal two-eight seconds south, one-seven-zero degrees, two-one minutes, seven seconds east?



Pronunciation – Regular past tense endings

1 11 Regular verbs in the past tense have three different sounds at the end of the verb. Listen and notice the verb endings.

/d/ *We received news of your situation.*
/t/ *The ADF stopped working correctly.*
/ɪd/ *I wanted to have enough light to see my fixes.*

2 Put the verbs into groups according to the sound of their ending.

contacted departed established tried calculated followed tasked arrived approached

1 /d/ _____ _____ _____
2 /t/ _____ _____ _____
3 /ɪd/ _____ _____ _____

3 12 Now listen and repeat.

4 Work in pairs. Use words on the right to help you tell the story of Prochnow's flight. Student A, tell the first part of the story. Student B, tell the second part of the story. Use the past tense.

Student A

1 Prochnow / leave / Pago Pago / 3.00 a.m.
2 decide / carry / maximum fuel
3 fill / tanks / endurance / 22 hours
4 en route / ADF / stop working
5 Cessna / fly / off course
6 Prochnow / call Mayday / Auckland ATC

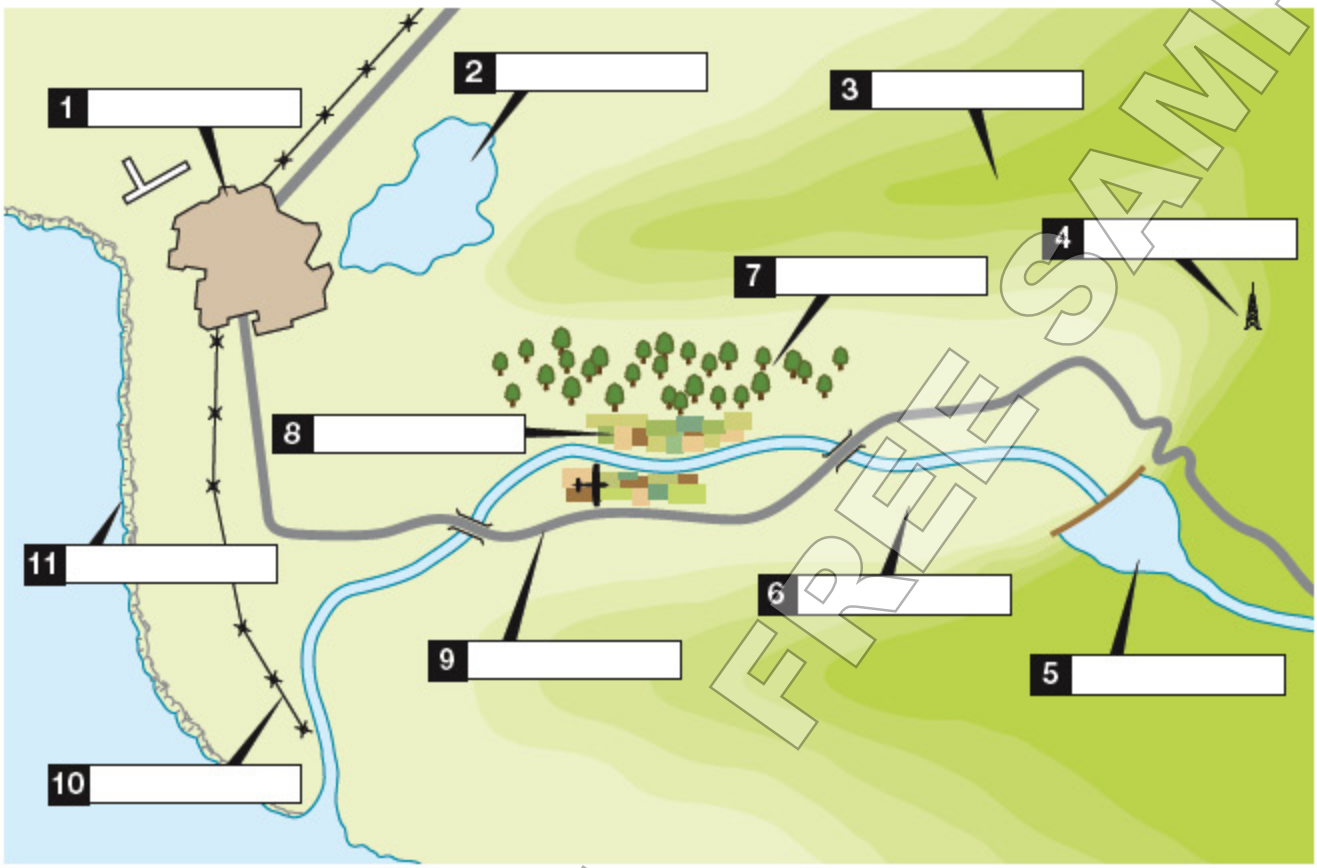
Prochnow left Pago Pago at 3 a.m. He decided …

Student B

1 Captain Vette / answer / Mayday call
2 divert plane / Prochnow's location
3 tell Prochnow / fly / sun / establish / position
4 fly around / Cessna / find / Prochnow / using radio signal
5 direct Prochnow / fly east / Norfolk Island
6 Prochnow see / oil rig / Vette guide / to Norfolk Island

Captain Vette answered a Mayday call. He diverted …

Section three – Lost



1 Match the features in the box to labels 1–11 on the map.

woods	highway	mast	coast	power lines	lake	valley	built-up area	reservoir	high ground	fields

2 13 Listen to the first part of a dialogue between a lost pilot and a controller. Complete the location report.

Location report

Call sign	TJB
Last known position	(1) _____ miles (2) _____ of CELRA VOR
Aircraft	(3) _____
Altitude	(4) _____
Speed	(5) _____ kt
Fuel	(6) _____ lb
Persons on board	(7) _____
Endurance	(8) _____ hours _____

3 14 Look at the map above of the plane's position. Listen to the next part of the conversation and tick (✔) the features in exercise 1 that they describe.

4 14 Listen again and draw the pilot's track on the map.

Functional English – Confirming and disconfirming

1 14 Listen to the dialogue again and complete the sentences below. They all ask for or give confirmation or disconfirmation.

1 _____ you fly into VFR? ☑
2 _____ that you can see a road. ☐
3 _____ you make out a river? ☐
4 _____ the river on the north side of the road? ☐
5 _____ that the road crossed the river…? ☐
6 _____ a communications mast at 12 o'clock, at about four miles? ☐

2 14 Listen again. Tick (✔) where the pilot gives confirmation. Cross (✘) where the pilot disconfirms.

3 14 Discuss with a partner which sentence you think is spoken more clearly, (1) or (2).Then listen again to the start of the recording and check if you were right. Discuss the reason for this.

Controller TJB. *Can you fly into VFR?* (1)

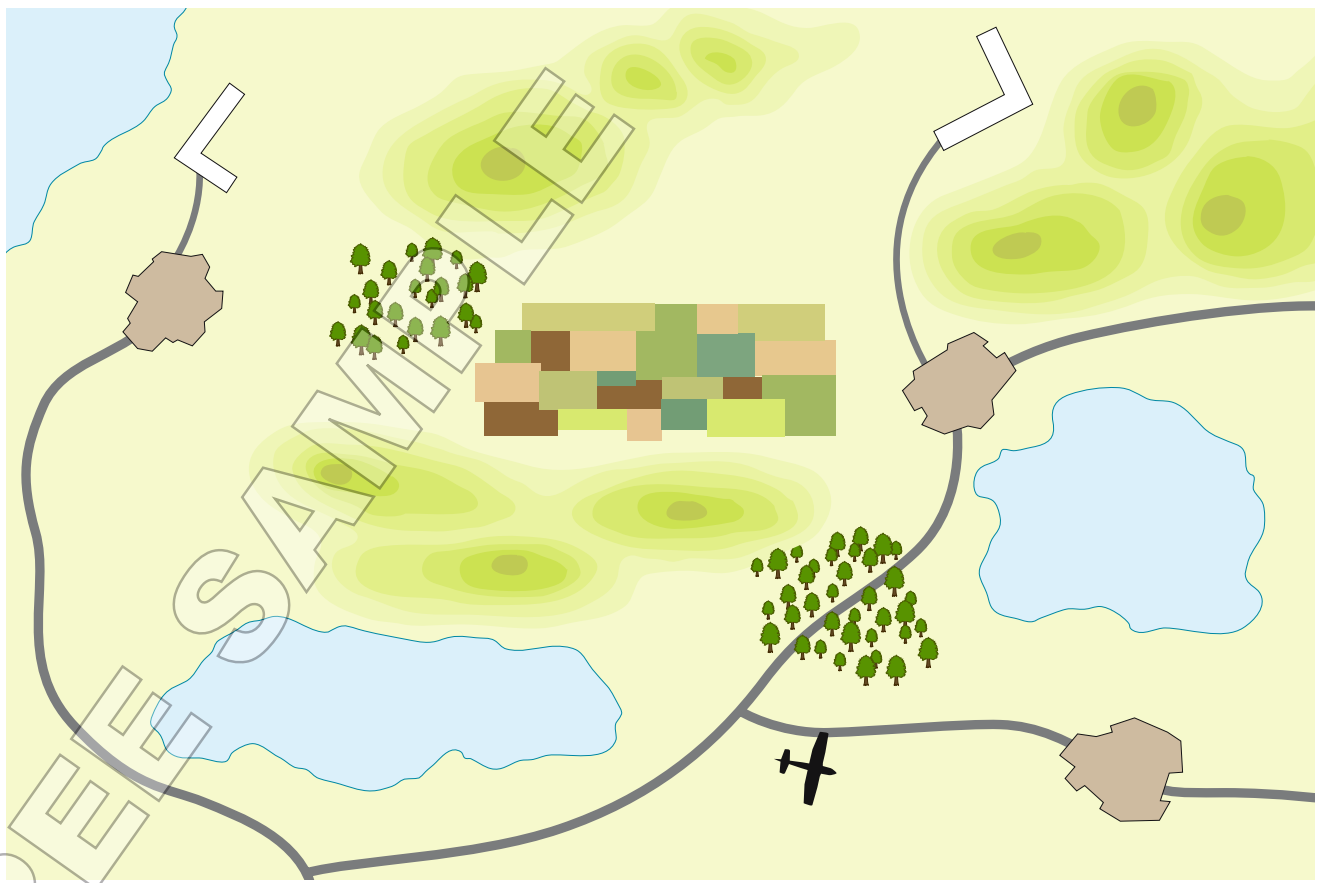
Pilot Affirm … I can see high ground to the north. I'm flying up a valley, with woods to the north, and fields below me. There is a road below me.

Controller TJB. *Confirm that you can see a road.* (2)

Pilot Affirm. I can see a road.

Speaking

Work in pairs. Student B, turn to p 108. Student A, you are a pilot who is lost and low on fuel. Look at this page. Describe your position to Student B – the ATC – who will direct you to the nearest airstrip using visual fixes. Use the phrases from 1 for confirming and disconfirming.



Section four – Language development

Functional English - Simple past

1 Complete the text with the past simple form of the verb in brackets.

A plane carrying 20 passengers heading for Busan (1) _____ (make) an emergency landing yesterday. The emergency (2) _____ (happen) after the pilot (3) _____ (report) a technical problem. The flight (4) _____ (depart) Seoul at 0700 and (5) _____ (fly) towards Busan. The flight (6) _____ (not reach) Busan, but (7) _____ (land) in Daegu shortly after 0800. The pilots (8) _____ (believe) there (9) _____ (be) a fire. The passengers (10) _____ (not be) hurt.

2 Complete the conversation with questions.

Journalist (1) _____ (you / make) an emergency landing?
Captain Because we thought we could smell smoke on the flight deck.
Journalist (2) _____ (you / notice) the problem?
Captain About 40 minutes after we left Seoul.
Journalist (3) _____ (you / decide) to land immediately?
Captain Yes, of course.
Journalist (4) _____ (you / land) at Daegu?
Captain We descended to Daegu because it was our closest airfield, of course.
Journalist (5) _____ (the fire / start)?
Captain We're not really sure – perhaps it was an electrical fault.
Journalist (6) _____ (you / have) on board?
Captain We had 18 passengers with us.

3 Complete this newspaper report using the verbs in the box in the past simple tense.

avoid	be (x2)	blame	cross	detect	happen	issue	not tell	steer	take place

Two planes were less than a mile away from a major catastrophe when a near-collision (1) _____ in thick clouds above London.

A Boeing 747 and a Gulfstream jet only (2) _____ each other when their internal warning systems (3) _____ human error and automatically (4) _____ away from danger.

The Boeing 747 (5) _____ heading towards Heathrow Airport from Japan and the business jet (6) _____ en route from Sardinia to Luton Airport when their paths (7) _____ by just 500 m east of London.

The incident (8) _____ in July last year near to Southam, and the Air Accident Investigation Branch today (9) _____ its report into the incident.

It (10) _____ the pilot of the Boeing 747, who was flying "too fast" as the plane began its landing procedures and (11) _____ Air Traffic Control of his speed.

Confirming and disconfirming

4 Complete the dialogue with the words in the box.

affirm	can see	confirm that	give further	negative	say last	that correct	what you

Pilot MAYDAY. MAYDAY. MAYDAY. Tibruk Centre, IG21. We're lost.

ATC IG21 Tibruk Centre. Roger emergency. (1) _____ known position.

Pilot Last known position was 10 miles north of Tibruk.

ATC IG21. Last known position was 10 miles north of Tibruk. Is (2) _____ ?

Pilot (3) _____ . Last known position was 10 miles north of Tibruk.

ATC IG21. Please tell me (4) _____ see now.

Pilot I (5) _____ a communications mast directly west and a lake below me.

ATC IG21. (6) _____ you can see a communications mast to the east.

Pilot (7) _____ . The communications mast is to my west.

ATC IG21. Turn left 45° and head west to the communications mast.
We'll pick you up on radar from there and (8) _____ instructions.

Vocabulary

1 Match these verb and noun combinations from the text ***Lost***. Then check in the text.

1	cover	a	by compass
2	complete	b	the second leg
3	cruise	c	a heading
4	make	d	thousands of miles
5	navigate	e	into range of an NDB
6	fly	f	the ETA
7	come	g	at 110 knots
8	follow	h	to a fix
9	approach	i	visual contact with a fix

2 Work in pairs. Try to remember the missing verbs spoken by Captain Vette.

N45AC. (1) M_____ your position, so we can (2) e_____ your position using the radio signal. We'll (3) m_____ our heading until we (4) l_____ contact. Then we will (5) t_____ left to (6) f_____ contact, and then try to (7) b_____ you in this way. We'll (8) c_____ you again very soon. N45AC. It's (9) g_____ dark. What time is your sunset?

3 Write the words below in the appropriate category. Use your dictionary to help you.

bridge desert footpath cemetery farmland high terrain lighthouse harbour marshland plain ridge urban area

type of land	feature