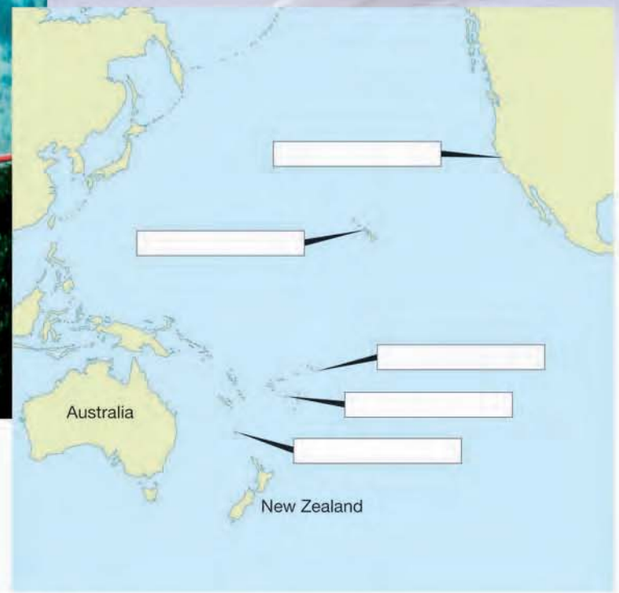
LOST



1 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	incident	task	track	fix	endurance

a the longest time an aircraft is able to fly without stopping _____
b a position in space, usually on a flight plan _____
c to use mathematics to find out something _____
d a situation which is non-routine, and potentially dangerous _____
e the line on a map that an aircraft follows _____
f an activity which is part of your job _____

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

4 Complete Prochnow's flight plan.

5 Read the text again and answer the questions.

1 Who did Prochnow 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 Prochnow realize there was a problem?

Flight plan

AIRCRAFT:
(1) _____
FLIGHT ORIGIN:
Oakland, California
FLIGHT DESTINATION:
Australia
NUMBER OF CREW:
1
PASSENGERS:
0
TIME OF DEPARTURE FROM PAGO PAGO:
(2) _____
DISTANCE TO NORFOLK ISLAND:
(3) _____
ENDURANCE:
(4) _____
ESTIMATED FLIGHT TIME:
(5) _____
CRUISING SPEED:
(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, USA 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 1500 nm to Norfolk Island. Prochnow calculated a flying time of fifteen hours minimum, cruising at 110 knots 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 twenty-two hours.

He planned his flight well. He departed Pago Pago at 0300, and with fifteen 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 on 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 flew a heading indicated by the ADF. As he approached the ETA he looked carefully for the island, but it wasn't in sight.

6 Look at this website for light aircraft pilots. Complete the sentences with words from the text above.

www.longdistance.com

Tips for long distance light aircraft pilots

Try not to fly (1) s _____ - _____ – fly with an experienced crew. Successfully complete an emergency training course before you depart. Plan your flight carefully – plan a (2) s _____ of rest days. Fit extra fuel (3) t _____ for the longer (4) l _____ of the flight. Try not to (5) c _____ long distances over water. Plan your clearance(s) at each (6) d _____ before you depart. Carry all flight plans, clearances and (7) c _____ for the complete journey.

7 Work with a partner. What other tips can you think of for pilots like Prochnow? Try to find at least two more. Feed back to the class.

Functional English – Explaining acronyms

1 Here are some common expressions for asking or saying what acronyms mean. Do you know what these acronyms 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 acronyms. Student A go to page 10, column 1. Student B go to page 10, column 2.

Macmillan Aviation English | Student's Book with 2 CD-ROMs | 978-3-19-032884-0, Hueber Verlag

Section 2 – Finding Flight N45AC

Listening – Auckand Control Centre

1 Look at the pictures of what happened next in the Prochnow story. Try to put them in the correct order.
1 ___ 2 ___ 3 ___ 4 ___ 5 ___

2 2.2.1 Listen and check your answers.

3 2.2.1 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 visual contact
   b radio 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 coordinates for
   a Prochnow
   b Norfolk Island.

Pronunciation – Coordinates

1 2.2.2 Listen and complete the coordinates.

Vette *Turn towards the sun and report your heading.*
Prochnow *Wilco. My heading is (1)* _____ .

Vette *Sunset on Norfolk Island is 7.30 zulu. That means you are (2)* _____ *and (3)* _____ *of Norfolk Island.*

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

2 2.2.2 Now listen and repeat.

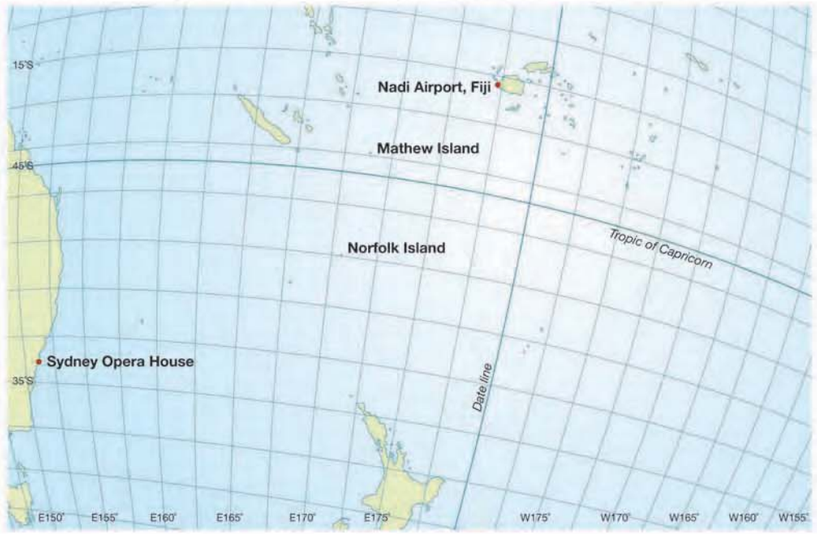
3 Work in pairs. Student B look at page 10. Student A look at this page. Ask Student B what places are at the following coordinates. Write the names of the places in the approximate position on your map.

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

Student A look at this page. Ask student B what places are at the following coordinates. Write the names of the places in the approximate position on your map.

1 31°03'44.28"S, 170° 21'07"E
2 14°19'53.20"S 170°42'.33.74"W
3 20°39'46.39"S 178°43'14.68"W
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 2.2.3 Regular verbs in the past tense have three different sounds at the end of the verb. Listen and notice the verb endings.

/d/ *We receiv**ed** news of your situation*
/t/ *the ADF stopp**ed** working correctly*
/id/ *I want**ed** 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 /id/ _____ _____ _____

3 2.2.4 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 flight. Student B, tell the second part of the flight. Use the past tense.

Student A
1 Prochnow / leave / Pago Pago / 3.00 a.m.
2 decide / carry / maximum fuel
3 fill / tanks / endurance / twenty-two 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 …

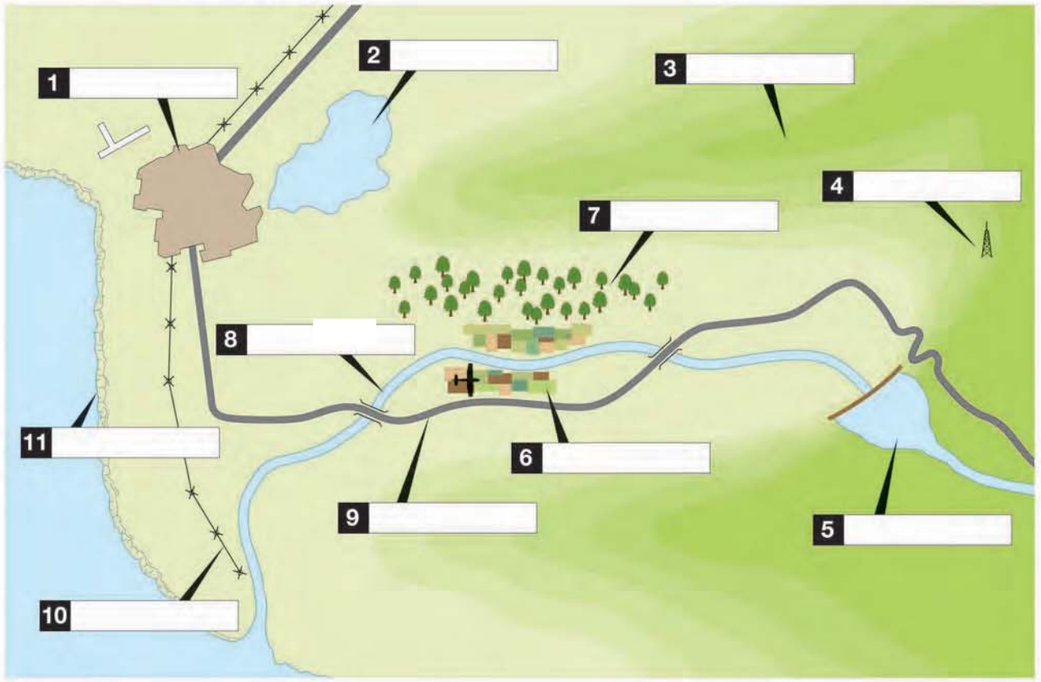
Student B
1 Captain Vette / answer / Mayday call
2 divert plane / Prochnow's location
3 tell Prochnow / fly / sun / establish / position
4 fly around / Cessna / find / Prochnow / using radio signal
5 direct Prochnow / fly east / Norfolk Island
6 Prochnow see / oil rig / Vette guide / to Norfolk Island

Captain Vette answered a Mayday call. He diverted …

For more practice with the past tense, look at Section 4

Macmillan Aviation English | Student's Book with 2 CD-ROMs | 978-3-19-032884-0, Hueber Verlag

Section 3 – Lost



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

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

Listening – Lost pilot

2 2.3.1 You are going to hear the first part of a dialogue between a lost pilot and an ATC.

1 What is the most important information a disorientated pilot needs to give an ATC?

2 Now listen to the dialogue and tick the information the ATC asks for.

endurance	✓	departure airport	
last known position		type of aircraft	
destination		speed	
landmarks pilot can see		altitude	
number of passengers			

3 2.3.1 Listen again and complete the report.

4 2.3.2 Look at the map above of the plane's position. Listen to the next part of the conversation and tick the features they describe.

5 2.3.2 Listen again and draw the pilot's track on the map.

Location report

Call sign:	Tango India Golf Juliet Bravo.
Last known position:	15 miles (1) _____ of CELRA VOR
Aircraft:	Dash-8
Altitude:	(2) _____
Speed:	(3) _____ knots
Fuel:	(4) _____ lbs
Persons on board:	(5) _____
Endurance:	(6) _____ hour (7) _____

Functional English – Confirming and disconfirming

1 2.3.2 Listen to the dialogue again and complete the sentences below. They all ask for or give confirmation or disconfirmation.

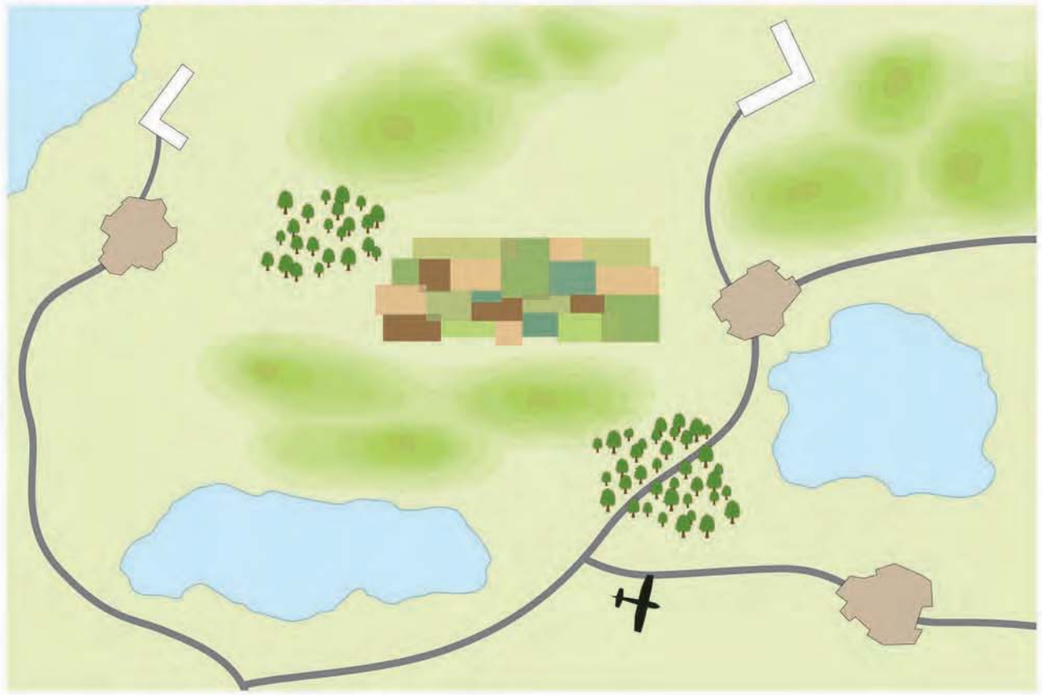
1 _____ you fly into VFR? ✓
2 _____ that you can see a road.
3 _____ you make out a river?
4 _____ the river on the north side of the road?
5 _____ that the road crossed the river
6 _____ the road on the north side of the river?
7 _____ a communications mast at twelve o'clock, at about four miles?

2 2.3.2 Listen again. Tick where the pilot gives confirmation. Cross where the pilot disconfirms.

3 2.3.3 Before you listen, discuss with a partner which sentence you think is spoken more clearly, (1) or (2). Then listen and check if you were right. Discuss the reason for this.

ATC *Tango Juliet Bravo. (1) Is the highway now on the south side of the river?*
Pilot *Negative. The highway is now on the north side of the river. The highway is now running north east.*
ATC *(2) Confirm that the highway is on the north side of the river.*
Pilot *Affirmative, sir. The highway is on the north side of the river.*

4 Work in pairs. Student B, turn to page 11. 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 exercise 6 for confirming and disconfirming.



Macmillan Aviation English | Student's Book with 2 CD-ROMs | 978-3-19-032884-0, Hueber Verlag




Language review

The simple past tense

We use the simple past tense to talk about finished actions and events.
Prochnow navigated successfully to Ono-I-Lau.

I / you / he, she, it / we / they	rest**ed** for one day.
	arrive**d** safely.
	carr**ied** maximum fuel.

I / he, she, it	**was**	in Pago Pago at 0200.
You / we / they	**were**	

He didn't know where he was.

I / you / he, she, it / we / they	**did not** (didn't) **rest**.
	did not (didn't) **arrive *safely.***
	did not (didn't) **carry** maximum fuel.

I / he, she, it	**was not** (wasn't)	in Pago Pago at 0400.
You / we / they	**were not** (weren't)	

Some verbs are irregular:
take off – took off go – went

We often use a time expression with the simple past to make say exactly when the event happened.
He departed Pago Pago ***at 0300***.

Yes / No questions

Did *he* ***declare*** *an emergency?* — ***Yes***, *he* ***did***. / ***No***, *he* ***didn't***.
Did they ***assist*** the lost pilot? — ***Yes***, they ***did***. / ***No***, they ***didn't***.

Was *Prochnow off course?* — ***Yes***, *he* ***was***. / ***No***, *he* ***wasn't***.
Were *the crew of the DC-10 helpful?* — ***Yes***, *they* ***were***. / ***No***, *they* ***weren't***.

Wh- questions

When	**did**	I	**take off**?
		he / she / it	
		you / we / they	

Where	**was**	I / he, she, it	at 0100?
	were	you / we / they	

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 — Why (1) _____ (you / make) an emergency landing?
Captain — Because we thought we could smell smoke on the flight deck.
Journalist — When (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 — Why (4) _____ (you / land) at Taegu?
Captain — We descended to Taegu because it was our closest airfield, of course.
Journalist — How (5) _____ (the fire / start)?
Captain — We're not really sure – perhaps it was an electrical fault.
Journalist — How many passengers (6) _____ (you / have) on board?
Captain — We had 18 passengers with us.

Functional English – Confirmation

Complete the dialogue with the words in the box.

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

Pilot — Mayday. Mayday. Mayday. Tibruk Centre, India Gold two one. We're lost.
ATC — India Gold two one Tibruk Centre. Roger emergency. (1) _____ known position.
Pilot — Last known position was one zero miles north of Tibruk.
ATC — India Gold Echo. Last known position was one zero miles north of Tibruk. Is (2) _____ ?
Pilot — (3) _____ . Confirm last known position was one zero miles north of Tibruk.
ATC — India Gold Echo. Please tell me (4) _____ see now.
Pilot — I (5) _____ a communications mast directly west and a lake below me.
ATC — India Gold Echo. (6) _____ you can see a communications mast to the east.
Pilot — (7) _____ . The communications mast is to my west.
ATC — India Gold Echo. Turn left 45 degrees 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 thousands of miles
4 make	d into range of an NDB
5 navigate	e the ETA
6 flew	f at 110 knots
7 come	g to a fix
8 approach	h visual contact with a fix

2 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

Student's Book material

UNIT 2

PAIRWORK

Section 1 – Communication skills – Explaining acronyms p.3

Student A

Complete your acronyms using the words in the box below. Then work with a Student B. Ask Student B what their acronyms stand for, and write down their answer.

actual
conditions
departure
flight
frequency
high
indicated
information
instrument
landing
omni-directional
outside
system
temperature
time
very

YOUR ACRONYMS

IMC _____ *meteorlogical* _____
ILS *instrument* _____ _____
ATD _____ _____ *of* _____
VOR _____ _____ _____ *range*
IAS _____ *airspeed*
OAT _____ *air* _____
FIR _____ _____ *region*

STUDENT B's ACRONYMS

AGL _____
TCAS _____
DME _____
DF _____
GPS _____
RVR _____
ATA _____

Student B

Complete your acronyms using the words in the box below. Then work with a Student A. Ask Student A what their acronyms stand for, and write write down their answer.

actual
arrival
avoidance
collision
distance
equipment
finding
global
ground
level
positioning
range
runway
time
traffic

YOUR ACRONYMS

AGL *above* _____ _____
TCAS _____ _____ _____ *system*
DME _____ *measuring* _____
DF *direction* _____
GPS _____ _____ *system*
RVR _____ *visual* _____
ATA _____ _____ *of* _____

STUDENT A's ACRONYMS

IMC _____
ILS _____
ATD _____
VOR _____
IAS _____
OAT _____
FIR _____

Unit 2 Section 2.2 – Pronunciation Coordinates p.4

Student B

Ask student A what places are at the following coordinates. Write the names of the places in the approximate position on your map.

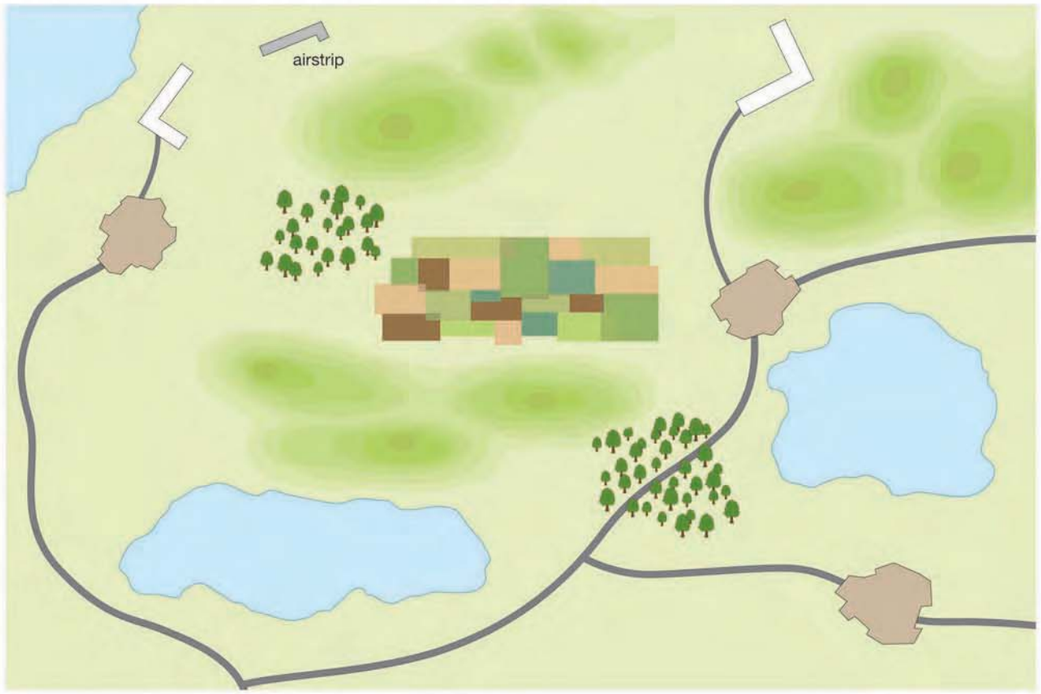
example
What do you have at two-nine degrees, two minutes, four-nine decimal seven-eight seconds south, one-six-seven degrees, five-seven minutes, four-two decimal nine-eight seconds east?

1 29°02'30.46"S 167°56'23.33"E
2 17°45'35.72"S 177°26'39.93"E
3 22°20'37.07"S 171°21'17.21"E
4 33°51'29.41"S 151°12'37.52"E

Unit 2 Section 3 – Functional English – Confirming and Disconfirming

Student B

Ask Student A to describe their position using visual fixes. Direct them to the airstrip, getting them to confirm or disconfirm what they can see along the way.



Macmillan Aviation English | Student's Book with 2 CD-ROMs | 978-3-19-032884-0, Hueber Verlag




UNIT 2 TAPESCRIPT

Section 2

2.2.1

Prochnow — Mayday. Mayday. Mayday. Auckland Control. November four-fife-alpha-charlie. I'm lost. I'm a Cessna 188 AgWagon.

AUK ATC — November four-five-alpha-charlie, Auckland centre roger mayday.

Captain Vette — Tango-echo-one-zero-three contacting November-four-fife-alpha-Charlie. Tango echo one zero three contacting November four fife alpha Charlie.

Prochnow — November four five alpha charlie. Copy.

Captain Vette — November four fife alpha charlie. We are a DC-10 en route from Fiji to New Zealand. We received news of your situation and we are offering assistance. Can you tell me what happened?

Prochnow — Tango echo one zero three. Thanks. I took off from Pago Pago at three this morning. I wanted to have enough light to see my fixes and I filled the tanks to give me around 22 hours endurance. But during the flight the ADF stopped working correctly and took me off course. At the moment I know I'm off track and I can't calculate my position. November four fife alpha charlie.

Captain Vette — November four fife alpha charlie. We are flying in your direction. You are not alone. We are going to try to establish VHF communication with you. Tango echo one zero three.

Prochnow — Again, thank you. November four fife alpha charlie.

Captain Vette — November four fife alpha charlie. Turn towards the sun and report your heading.

Prochnow — Wilco. My heading is two seven four degrees.

Captain Vette — November four fife alpha charlie. We are facing the sun. Our heading is two seven zero. The difference is four degrees, which means you are south of our position.

Captain Vette — November four fife alpha charlie. Now hold out your hand. How many fingers do you have between the horizon and the sun?

Prochnow — About two and a half fingers.

Captain Vette — November four fife alpha charlie. Two and a half fingers. We have four fingers. We believe you are south west of our position. Fly heading three one fife.

Prochnow — Heading three zero fife.

Captain Vette — November four fife alpha charlie. Maintain your position. We're going to try to establish your position using the radio signal. We're going to maintain our heading until we lose contact. Then we will then turn left to re-establish contact, and then try to box you in this way. We'll contact you again very soon.

PAUSE

Captain Vette — November four five alpha charlie. It's getting dark. What time is your sunset?

Prochnow — The sun is setting now, and it zero seven fife two zulu.

Captain Vette — November four fife alpha charlie. Sunset on Norfolk Island is zero seven three zero zulu. That means you are five decimal six degrees east and three zero degrees south of Norfolk Island. Maintain your heading. You're going to make it!

Prochnow — Tango echo one zero three. I can see a light, yes it's a light, it looks like a ship, no I think it's an oil rig.

Captain Vette — November four fife alpha Charlie. Your coordinates are 31°S 170° 21'E. We are on our way. You are one fife zero miles from Norfolk Island. We'll guide you to Norfolk Island.

Prochnow — Maintaining heading three zero fife. November four five alpha charlie.

2.2.1

Captain Vette — Turn towards the sun and report your heading.

Prochnow — Wilco. My heading is two-seven-four degrees.

Captain Vette — Sunset on Norfolk Island is zero seven three zero zulu. That means you are five decimal six degrees east and three zero degrees south of Norfolk Island.

Captain Vette — Your coordinates are three-one degrees south, one-seven-zero degrees two-one minutes east. You are one fife zero miles from Norfolk Island.

Answer key

Section 1

Activity 2
a endurance b fix c calculate d incident
e track f task

Activity 3 (in descending order)
Oakland Hawaii Pago-Pago Onu-I-Lau
Norfolk Island

Activity 4
1 Cessna 188 2 0300 3 1500 nm 4 22 hours
5 15 hours 6 110 knots

Activity 5
1 An aircraft sales company
2 Charts, a compass and an ADF
3 To give maximum daylight hours
4 There were no navigation aids
5 When he couldn't see Norfolk Island

Activity 6
1 single-handed 2 schedule 3 tanks 4 legs
5 cover 6 destination 7 charts

Activity 7
Travel during day light.
Avoid areas with no fixes.

Functional English

Activity 1
It stands for non-directional beacon.
It means automatic direction finder.
It's short for visual flight rules.

Section 2

Activity 1/2
d/e/a/b/c

Activity 3
1b 2b 3b 4a 5a

Pronunciation – Coordinates

Activity 1
1 274° 2 5.6°E 3 30°S 4 31°S170°21'E
5 150 miles

Activity 3
Student A
1 oil rig 2 Pago Pago 3 Ono-I-Lao 4 Auckland

Student B
1 Norfolk Island 2 Nadi Airport, Fiji
3 Matthew Island 4 Sydney Opera House

Pronunciation – regular past tense endings

1 tried/followed/arrived
2 established/tasked/approached
3 contacted/departed/calculated

Section 3

Activity 1
1 built-up area 2 lake 3 high ground 4 mast
5 valley 6 fields 7 woods 8 river 9 highway
10 power lines 11 coast

Activity 2
1 last known position
2 last known position/aircraft type/number of passengers/ speed/altitude

Activity 3
1 south east 2 5300 3 110 4 780 5 8 6 1/30

Activity 4
trees, fields, high ground, built up area, river, highway, mast

Functional English

Activity 1
1 Can 2 Confirm 3 Can 4 Is 5 Confirm 6 Is
7 is there

Activity 2
1 ✓ 2 ✓ 3 ✓ 4 ✓ 5 ✗ 6 ✗ 7 ✓

Language review

Activity 1
1 made 2 happened 3 reported 4 departed
5 flew 6 did not reach 7 landed 8 believed
9 was 10 were not

Activity 2
1 did you make 2 did you notice 3 Did you decide
4 did you land 5 did the fire start 6 did you have

Functional English

1 say last 2 that correct 3 affirmative 4 what you
5 can see 6 confirm that 7 negative 8 give further

Vocabulary

Activity 1
1 c 2 b 3 f 4 h 5 g 6 a 7 d 8 e

2
Type of land: desert, farmland, high terrain, marshland, plain, urban area.
Feature: bridge, footpath, cemetery, lighthouse, harbour, ridge.

Macmillan Aviation English | Student's Book with 2 CD-ROMs | 978-3-19-032884-0, Hueber Verlag