

SKETCH MAP TO SHOW THE ROUTE TAKEN ON THE FLIGHT

BEFORE SUNSET

The plane was flying 325 feet above a purple-blue sea, impenetrable in its depth of colour. Thousands of flying fish shot out of the water ahead, flitting from the plane in the form of a giant bow-wave ploughed away before us. It was unceasing. Thousands! there must have been millions of fish. They dashed with a jet of spray into the side of a wave or roller ahead. "Ah! ha!" I thought, "*Elijah* could teach you something about alighting; it's a wonder you don't wreck your undercarriage crashing into the water like that." Evidently, the sound-waves or vibration from the motor must reach and scare them.

I made an inspection to assure all my gear was in order. In front of the compass, the Bygrave position-line slide-rule, consisting of three cylinders revolving one within the other, for working out sextant observations. Under the seat, Roper's *Practice of Navigation* with all the logarithm and other tables in case the slide-rule failed me; chart of the Pacific, another of Norfolk Island, Mariner's description of Norfolk Island, a sadly depleted loaf, butter and jam; my chart in an aluminium case with rollers to turn it on as required. Pasted to the cockpit-side, for quick reference, were: the page of nautical almanac for the week, a scale for converting land into sea miles, and tables for dip to allow for height, for refraction of sun's rays and for rate of change per minute of the sun's altitude with different azimuths in these latitudes. On the shelf above the instruments, three protractors and two rulers (that were apt to fly over-

BEFORE SUNSET

board) and a pair of compasses. Suspended from my neck on cords were sextant, camera, protractor and pencil. In a belt: two spare compasses, spare watch, spare spectacles, indiarubber, films and sheath-knife. Strapped to my wrist the chronometer watch and accurate barometer for measuring height above the sea to within 25 feet. Strapped to my right leg, the wireless-transmitting key; and to the left, my log-book. And in my pocket, the instrument which I had taken the utmost pains to provide—but now, alas! useless—a tin-opener.

I made sure the petrol-pump was drawing from both bottom tanks, then settled down to hard work. I observed the plane's drift when flying straight ahead, changed course 30° to the right and observed it again, and a third time when flying 30° off course to the left. I plotted the results on my chart and estimated a 24-mile wind at our back. By Jove! that was good. Next I estimated when the plane should be at the turn-off point 90 miles from the island. At five o'clock, I decided; and worked out what height the sun would appear to be in the sky if the plane were in correct position at that time.

I noticed with keen satisfaction that my brain was now working with cool steadiness—as though it recognized that from then on, success depended entirely on accurate work. It gave me a feeling of power which slightly elated me—that, and the perfect conditions. The sun shone in a cloudless, light-blue sky, and its rays, slanting over the top wing, caught my

Precompute

MOB table

BEFORE SUNSET

head and the top of the cockpit. I could feel (or imagine) a warmth from it. The exhausts emitted a steady, rolling roar, with a suspicion of black smoke sometimes discernible in the blast-fumes of the four stubs. The hand of the revolution-indicator might have been the hand of a clock, it kept so steady. I felt braced, keen and powerfully confident about the sextant work on which everything depended. The time for it was rapidly approaching.

I observed the drift again three times and decided the plane would have been pushed off its course $12\frac{1}{2}$ miles during the hour. I therefore altered course another 10° to make this good. And so, actually, the plane was now *headed* to pass the island nearly 200 miles to the left. I had to reassure myself that it was all right—however queer it might seem.

01.00 hours. 328 miles.

Pressing down the wireless key, to make sure the needle of the current-meter oscillated in response, I rushed through a message to the Air Base operator, who should be listening as the hour struck.

“Position by dead reckoning at 0100 hours GMT $33^\circ 15'$ South $171^\circ 35'$ East Wind 24 mph from 162 degrees true.”

I made three more observations of drift at the beginning of this hour and three more at the end. Then I plotted them all on the chart. Everything was still well. The sun shone in a cloudless sky, though it had now dropped from my sight behind the top wing,

BEFORE SUNSET

unless I craned backwards. The motor steadily roared. And the wind, still favourable, had slightly increased. Yet my mood of exhilaration seemed to have worn thin, perhaps due to the critical sextant work drawing near, or to the thought of the mountainous seas which such a wind must be raising round Norfolk Island. I reckoned we had been driven 15 miles off course again, thus counteracting the previous 10 degrees allowance for leeway. But with wind blowing us 26 miles forward, I estimated we had made at

02.00 hours, 344 miles.

I must try a shot with the sextant to find out how far off we were from the turning-point. I must “feel my way”. I trimmed the tail for as delicate balance of the plane as possible; but even so, I had to give constant attention to the controls while adjusting the sextant. The plane was as tiresome and restive as a spoilt dog on the lead. I wanted to adjust the sextant to observe both the sun above the top wing and a piece of horizon showing between top and bottom wings. To make sure I was using the piece of horizon directly below the sun, I had to wipe out attention to the plane’s balance and concentrate on that of the sextant. I was just making contact between sun and horizon when pressure of terrific acceleration on my back made me drop the sextant as if it were red-hot. I seized the control-stick and eased the plane from its vertical nose-dive seawards into a normal dive, and from that flattened out. Phew! that was no good.

BEFORE SUNSET

I set the tail trimmer back notch by notch till the plane was bound to climb as soon as I left it alone. I tried again, and this time managed well enough, easing the control forward with my left elbow when the plane climbed so steeply that the wing cut off the sun from view. I noted the time of observation to the nearest second, but when I turned to the altimeter, I found it read 2,500 feet above the sea; yet, looking over the side at the water, I could have sworn we were not above 400 feet. I must be mistaken—had I not bought the altimeter for this work because of its accuracy? and had I not observed it night and morning for six months to grow used to its slightest vagary? My eyes must be deceiving me; but I would quickly prove or disprove that. I dived the plane down to the water surface. The altimeter still read 2,500 feet.

I tugged at the sextant to make sure it was securely held by the lanyard about my neck. For the altimeter to break was bad enough, but if I lost the sextant overboard. . . .

I yet had the dashboard altimeter. It was not of much account and had failed me before when over the English Channel at night. But still, I could make it suffice, I supposed, by noting the position of the hand at sea level and then deciding what angle it had moved through on ascending. I flattened out close to the surface and flew along skimming it. I gazed a few yards ahead, fascinated by the heaving water. The shape of every wave was as clear and sharply defined to my sight, as if both plane and sea

BEFORE SUNSET

were suspended without motion. Here the water was beginning to heave up. There it was in the act of leaping high. In another place it had flicked its top into a white crest; while yet elsewhere, I caught sight of a lopped peak in the act of dropping to the foot of its watery mountain. I was past before any had time to move. And it seemed that the plane, too, was dead still, in a world deserted through the death of motion.

Glancing further ahead, I was astonished to notice the plane was below the water level—as though in the vortex of a whirlpool with the rim of water above—until in a moment I realized how, watching the surface close under the plane and flying by it, I had been unconsciously raising the plane to the huge swell, to hug the trough and gently lift to the roller. A long, loping swell was riding the same way at perhaps a third the speed; and the plane seemed a toy thing in the trough.

The rollers themselves had a disturbed look—annoyed by an over-running cross-sea from the south-west—by comparison a mere herring splash on the whale back of the other—though I felt sorry for any seaplane that tried to ride it. How solitary it was down there, as if one's soul were winging through some stratum of atmosphere between this and another unknown world. I felt oppressed by a deathly silence as of illimitable space, and fell into an abstraction. I returned with a start to consciousness of the present. That mighty monster, with its

BEFORE SUNSET

terrible, yet satisfying power, had nearly hypnotized me.

I rose till, by the old altimeter, I judged the height to be 400 feet and then took five "shots" at the sun. Conditions were ideal, with a clean-cut, sharply defined horizon to use. The five "shots" took $6\frac{1}{4}$ minutes to observe. In another 14 minutes I had the observations worked out in two ways and the result plotted. It indicated that I had yet 230 miles to fly before turning to the right for the island. Another 320 miles all told. *Was* it correct? Now that I had used the sextant, my confidence in it vanished like a pricked bubble, leaving a poison-gas—doubt—which entered me and corroded.

Depressed, I went about the drift observing in a hurry to be ready for another wireless message at 2.30. There then remained four hours before sunset and by the sextant 280 miles yet to go.

I dashed off the message:

"CQ de KK AAA Position by sextant and DR at 0200 hours GMT $32^{\circ} 17'$ South $170^{\circ} 15'$ East AAA Wind 30 mph from 152 degrees true AAA AR."

I rushed through more drift observations, plotted them on the chart, and calculated the wind had increased another 2 m.p.h. Whew! I was getting a favourable wind all right. Through the speed being so much greater than I had expected, I was becoming hard pressed to carry out the work. After the

BEFORE SUNSET

haste necessary to plot the drift in time for sextant work, I felt distinctly hustled.

At 03.00 hours, I secured four observations at a mean altitude of 300 feet. The sun was now dead ahead and had dropped from sight behind the petrol tank between the top wings. I had to work the sextant fast, setting the plane into a dive on purpose to get the sun above the tank. The horizon I picked up beside the motor. At each shot, immediately I had the sun touching the horizon in the sextant, I jerked back the control-stick to climb while recording sextant, watch and altimeter readings. My handling of the plane was already becoming automatic—I was getting the "feel" of *Elijah* as a seaplane. I worked fast at the calculations. 127 miles from the turn-off point, I made it—217 miles to go. I wiped my brow under the flying-helmet peak. This pace was too hot altogether. My brain was becoming jammed with work. And it scared me. With a slow-acting brain, I dared not force it to work any faster than usual, however pressed for time. Especially with the engine roar trying to scatter thoughts. I must have time to collect them and run over the general scheme. No use working out a position accurately by sextant, if I let the top tank run out of petrol or made some other childish error. While thinking this, I became aware of a beat in the motor, a regular muffled knocking. That cursed No. 3 again! Was it failing? At this low altitude, I must turn right about instantly if it did, in order to face into wind before the plane hit.

BEFORE SUNSET

I must cut that out—I couldn't afford to waste an atom of energy on anything I was unable to help, all thought or worry about the motor must be wiped out completely.

And I dare not let myself become hustled. . . . But what to do? Perhaps if I left out the next drift observations and gave up the time to thought? Well, I would.

I let my brain become a complete blank. Then flitted in thought from one thing to another: "Compass, petrol, revolutions, oil pressure, height (damn that motor!), chart—h'm, getting very close to turning-off point now—little more than an hour—probably ready to turn at 4.30 instead of 5 o'clock as expected. Have to work out sun's position afresh—must hurry with it—what's that? Clouds ahead—fleecy—hanging in the air—h'm, not thick, thank heaven!"

03.30 o'clock; three hours before sunset; 153 miles to go according to the sextant.

"CQ de KK AAA Position at 0300 hours GMT by sextant and DR $31^{\circ} 17'$ South $168^{\circ} 50'$ East AAA Wind 32 mph from 143 degrees true AAA AR."

I turned from the wireless to drift reading, made three observations and plotted them. The wind had increased to 39 m.p.h. By Jupiter! it would be soon blowing a gale at this rate. I rushed through the calculating of sun's position for a four o'clock sight. I

BEFORE SUNSET

must arrange so that when that moment arrived, I should have only to take the sights and no more. I had to fight an intense excitement trying to seize control of me; but it did good in that it keyed me up to a high pitch of alertness and mental activity for the vital work ahead. At 04.00 o'clock, I took four sights at 100 and 150 feet up, turning the plane to the right in a steep bank to catch the sun abeam behind the wings and turning on to course again while recording the instrument figures. (During the observation, the plane flew under balled white clouds littering the sky.) I quickly plotted the result, which showed my dead reckoning to be 19 miles in error. H'm, why was that? A mistake somewhere? Where? And if one, then why not several?

No time to worry about it. I must put my faith in the sextant. It said the plane was only 45 miles short of the turning-off point, and then it should be 75 miles to the left of the island.

This half-gale was making the pace too great altogether. I throttled back the motor until the flying-speed was only 60 m.p.h. Even so, with a forty-mile wind bringing the actual pace up to 100 m.p.h. it meant cutting out the distance to the estimated turn-off point in thirty minutes.

(Of course, that wind-speed indicator on the strut over-registered—that might account for the 19 miles' error. But suppose there was a double error? . . .)

I hurriedly computed the work for another sight at the end of the half-hour. It would be the critical

BEFORE SUNSET

moment of the flight. When I turned it must be towards where the island lay—not towards where it did not lie. Now I had to work fast, but consciously demanded of myself an extraordinary effort, that the work should be accurate as well. And never before had I felt so intensely alive—I seemed to vibrate with vitality—or perhaps it was only excitement. But I felt I was living at the highest possible speed.

The clouds were becoming numerous and beginning to tower.

I calculated what should be the compass bearing of the island when I turned the plane towards it.

The clouds were forming into dense cumulus, and rapidly. I watched with anxiety.

A few minutes before the end of the half-hour it was driven home to me that there would be no sun available for the sextant. I swept the clouds ahead, but could see no opening. And they were darker. What should I do? Of course, if I could depend on the last sight. . . . Supposing it were wrong. . . . No, I must have another. To turn at the right moment was vital. But I could not heave to and wait for sunlight. I must turn left away from the island, and hunt for some. The clouds looked whiter there.

Yet I kept straight on, hope still alive in me of finding sun ahead. Gradually the hope faded and died in me. Close to the half-hour, I turned my back on where the island should be, and flew away from it at increased speed.

As I flew on, mile after mile, the excitement was

BEFORE SUNSET

too great. I was worked up to such a pitch that I had, consciously, to exercise control over my thoughts to prevent their leaping wildly.

The plane had flown three or four miles when I spotted a round patch of sunlight ahead and slightly to the right. I increased the motor revolutions another fifty.

Life seemed to be standing still while the plane reached for that sunlight; though the distance could not have been above four or five miles more.

The area was small. I set the plane circling and kept it in a steep bank by working the rudder with my feet while I worked the sextant with hands and eye. I straightened the plane's course while reading the instruments and quickly shot out of the patch. I turned and re-entered to make another observation, again circling inside the arena of sunlight. Four sights I obtained, with the plane thus chasing its tail in a tight circle. I adjusted them back to 04.30 hours by the table for the rate of change in sun's altitude according to its azimuth and the observer's latitude; I then compared the result with the calculations already made for that time.

On the line! I had expected to be, yet when the mathematics confirmed my expectations, it came as a great, fresh surprise. My God! On the line through Norfolk Island and the imaginary turn-off point!

I turned right about and headed for where the island should lie, 85 miles away.

Immediately I swung on to this course, nearly at

BEFORE SUNSET

right angles to the track from New Zealand, desperate misgiving assailed me. All round to the limit of sight stretched nothing—unconfined distance—space—between heaving water and cloud ceiling. Markless and signless for hours had been this desert of air, no one hundred cubic miles differed from any other cubic miles. Yet always I had flown in one direction until the idea had become stamped in my instinct that the island lay dead ahead. And now that I turned almost at right angles to the former course, my whole nature rose in revolt to repudiate such an unwarranted change in mid-ocean. To turn was suicide. . . . My navigation scheme was but a flimsy, irresponsible fancy hatched in my brain. I could not have flown so long on the same course without the island lying ahead—ahead—ahead. . . . Panic welled up in me. Reason tried to reassure. . . . Turn, it said. . . . No, I must fly straight on. For God's sake don't let me do this crazy turn! My muscles tried of their own account to swing the plane back on to its former course.

"Steady, steady, steady," I said aloud, "take it steady now!"

Let me be reasonable. Whether the method was right or wrong, I must trust it now. I could not draw back. I could not give in or adopt any other method known to be safer. I must stay with this method as if it were a steel gin that had snapped its jaws on me.

I kept the new course.

But I could not prevent myself from searching the

BEFORE SUNSET

horizon to and fro, to and fro, from the tail of the plane, right round, with an intensity of looking which seemed to burn the back of my eyeballs. "It is useless to do it," argued Reason, "either the island is dead ahead where calculated, or else your system has failed, and then God only knows where it is." "But the island might be just behind us, even in sight," objected Instinct, "and we now flying away from it." I continued searching.

The clouds were darkening and hung above without a break; the wind was dropping; the plane now drifted only 15° to the right, and for that amount I had allowed.

I *must* get another sextant shot. How could I trust those others? I would work it independently. No, I had a sight prepared for five o'clock; I would adjust it to that. But could I possibly secure one with the sky overcast?

I throttled the motor back to 60 m.p.h. and now searched the clouds as well as the horizon.

Suddenly, I picked out the shape of the sun through a thinning of the clouds; but it was covered again at once.

I adjusted the sextant to the angle I expected, removed the shades necessary for strong sunlight, and held it ready in my hand. I waited and waited. Five miles went by. Suddenly again, I could see the rim of the sun through a wraith of black cloud where it had momentarily thinned. I secured a single shot before the thick cloud closed over again for good. But

BEFORE SUNSET

it was a fair sight, with horizon line adjusted in the sextant to make a perfect tangent to the sun's reflection. It was at ten seconds before 05.00 hours. I felt grateful; that saved work—with three complete sets of observations in two hours besides the routine work, my brain was clogged up.

The observation gave the same result as the last—that the plane was dead on the line to the island.

Good enough! I dismantled the sextant and put it away in its case. I felt like a man so sure he is right that he will stake everything on his conviction, and with indifference—if he loses, it will seem the only possible ending, when after being so sure he was right, he *is* wrong. I was positive I was right. If I did not find the island it would be the island that was out of position.

It should be in sight that very minute. It was said to be visible from a ship 36 miles away on a clear day, and so it should be visible easily from a plane at that distance—in spite of the sky being completely overcast with the grey of covering nightfall.

I searched the horizon from side to side. Nothing! I could do no more work even if I wanted to. I must stand or fall by what I had already done. My God! what excitement—waiting for the decision. How paltry and petty seemed every other excitement in the world! A simple decision—either I found the island or I did not. 05.05; 05.05½; 05.06; I seemed to live a generation in each minute.

The wind was dropping; the drift was only 10°

BEFORE SUNSET

now—that must be due to approaching nightfall.

Down below, the swell might have diminished, but the cross-sea was as strong as ever. Its grey-blue face looked to me cold and hostile. "Expect no pity here for failure," it said clearly. Suddenly fear froze my blood. If I had failed, what could I do? If once I missed the island, I could not find it—for where should I seek? There was no alternative place, according to my calculations, where I could look. Panic! what plan could I adopt? Should I fly north, south, east or west? I had not petrol for more than halfway back to New Zealand. My brain was numb; I could think of no plan. My God! why had I not thought out beforehand what to do in case of failure?

05.08. By my estimate, the island ten miles overdue to be sighted.

Well, there was something grand about this finish. Staking everything on a clear brain, on the cool working of a scheme bred in it and on the scheme being without a flaw. It satisfied the very source of life which desired everything to lead up to a definite, clean-cut ending. And it was I who had set myself the problem; if I succeeded, I was responsible; if I failed, I alone was responsible. What better way to end up? And failure perhaps would not be so hard with it thus.

05.09. Ah! was that land away to the left? Grey, purple crest. It was changing shape. Ach! a cloud lying on the horizon. By Jupiter! the cloud ceiling was dropping.

BEFORE SUNSET

Why should the calculations be wrong? There was that time I was 740 miles out. Yes, but not with this sextant. How about to-day, 140 miles out—and often, land was not visible five miles away.

05.11. "This twisting my head from side to side makes my neck ache. What to do if I have missed the island? No use flying madly about anywhere. No, I must make the best alighting I can. How much longer shall I give it on this course? I could alight, I think—but the sea is too rough to ride in a seaplane. How long would she last? Blow over at once cresting the first swell? The rubber boat would be my only chance, if I could get it out in time. A pity there is no food."

05.12. Island fifteen miles overdue. Ah! surely that was land to the left front! Two hills raising their cones above a narrow band of grey cloud, and the dark coast purple below. I stared fixedly. By God! it was changing shape. By heavens! it was only another cloud. A wave of anger passed through me at being deceived yet again.

05.13. "What an incredible stretching of time! Well, I must decide soon what to do. Och! blazes! quit this worrying! Haven't I done everything I could have done? By Jupiter! I'll just fly steadily ahead. Why! for half an hour more. Worry can't help. Haven't I done my best? No man can do more than that. If I've failed, then it is fate."

Immediately I let myself think that, my agitation vanished. I felt resigned.

BEFORE SUNSET

And as if some power were only waiting for me to resign my personal claims and acknowledge that it was only a question of fate, a cloud ahead lifted like a drop-curtain and uncovered land.

Land! staring me in the face.

Land! land! Ha! ha! ha!

I threw back my head and laughed aloud, till the blast of the slipstream drove the laugh into my throat and bellied out my cheeks. Triumphant joy swelled in me and every limb wanted to dance or move violently. Ha! ha! ha! we had made it after all. I seized the wireless key and began transmitting boisterously—uncaring whether anybody could hear me or not—so long as I had the illusion of being heard—only craving expression of any kind as a vent for my emotions.

"CQ de KK AAA Land-O dead ahead 0514 hours GMT AAA Crew excited AAA AR."

I looked up to find a cloud had obliterated the island from view again. No wonder I had not seen it till so close, it must be attracting cloud.

Ha! ha! ha! Ho! ho! ho!

Reason: "What are you laughing at?"

Pilot: "Nothing."

Reason: "By Jupiter! that was dead easy—getting here. That navigation was childishly simple after all."

Wuzzy (the beard): "Personally, my views on astronomical navigation coincide with those of the dear old lady with the knitting-bag."

LANE 0500 GMT
 Time of flight 5 hours 50 minutes
 Distance of flight 5000 miles

The two points marked
 in position were
 calculated at 00:30
 and at 05:00 GMT

This position was
 calculated at 05:00
 GMT from the
 time to 05:00
 (assuming constant
 speed)

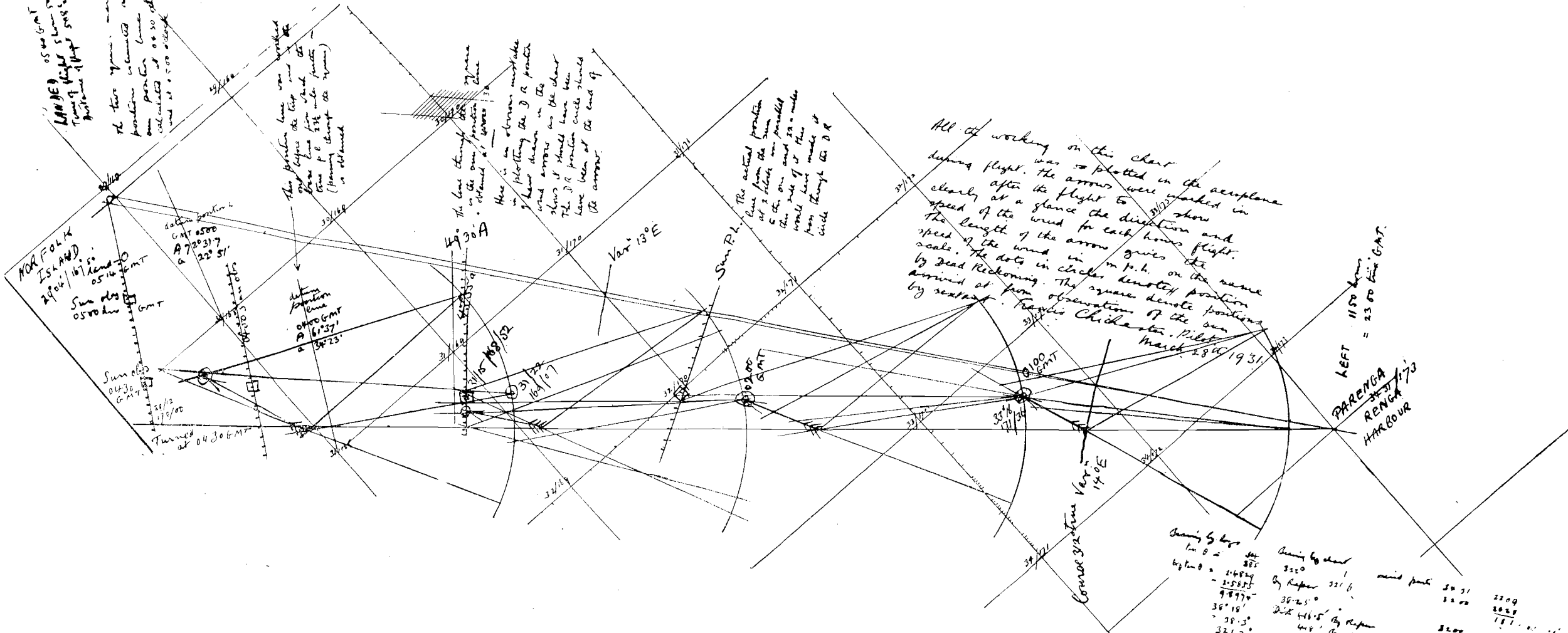
The line through
 the sun position
 is an error
 in plotting the D.R. position
 which is shown in the
 diagram. The D.R. position
 shown should have been
 the D.R. position circle
 drawn at the end of
 the arrow.

The actual position
 was from the sun
 at 2:15 p.m. parallel
 to the sun and 20 miles
 from the end of the
 arrow through the D.R.

All the working on this chart
 during flight was plotted in the aeroplane
 clearly after the flight to show
 speed of the wind for each hour's flight.
 The length of the arrow gives the
 speed of the wind in p.h. on the same
 scale. The dots in circles denote position
 by dead reckoning. The squares denote position
 arrived at from observations of the sun
 by sextant. *Franklin Chichester, Pilot*
 March 28th 1931

LEFT 1150
 = 23.00 GMT

PARENGA
 RENGAR
 HARBOUR



Checked by log
 1st 0 = 1985
 by 2nd 0 = 24824
 - 25825
 99970
 36° 18'
 - 38° 5'
 321.7'

Checked by dead
 320
 by Reeper 321.6
 36.25°
 Dist 416.5' by Reeper
 444' by dead
 Land within 4.81

mid point	30.31	2209
	32.00	2028
		181.1
	32.00	2028
	27.76	1840
		200.0