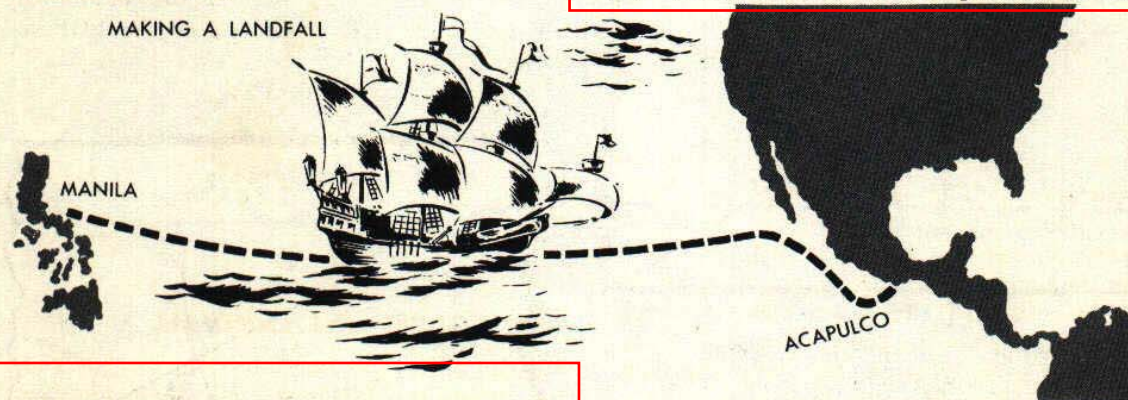


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THE LANDFALL

Before the development of accurate methods of celestial navigation, a mariner had no way of checking his dead reckoning when he was out of sight of land. In crossing an ocean, he might accumulate a large DR error. If his destination was on a continent or large island, he could follow the coastline to destination. But if the coastline which he first sighted was poorly charted, he might be unable to find his position. Then he would not know which way to turn to reach destination. The mariner sometimes solved this problem by setting a course definitely to one side of destination. Then when he reached the coast, he knew which way to turn. This procedure was known as **making a landfall**. In the illustration, the mariner purposely sails left of destination; then when he strikes the coast, he knows that he must turn right.

MAKING A LANDFALL



airplane, or if you can home on a radio station near your destination, then the landfall is unnecessary. If your destination is on a large land area, usually you can find it by map reading or radio. But if your destination is a small oceanic island without a radio, you may need celestial. At night, if the stars are visible, you probably will use fixes rather than a landfall. But in the daytime, usually the sun is the only body visible; and you cannot obtain a series of fixes from the sun. Ordinarily, then, you fly a landfall only at the end of a long daylight flight over water when your destination is a small island.

If you are aiming for a small island, course is more important than GS. If your course is correct, you will pass over the island sooner

Like the mariner, you may reach destination by using some LOP which passes through destination, whether a coastline, river, railroad, lightline, or radio beam. Usually you will simply follow the LOP; but, like the mariner, you may set a course definitely to one side so that you know which way to turn when you strike the LOP. When you use a visible LOP in this manner, you are flying a terrestrial landfall.

To an air navigator, "landfall" means "celestial landfall." A celestial landfall is similar to the terrestrial landfall except that it uses a celestial LOP, which is invisible.

The celestial landfall is the most certain method of reaching destination when you are unable to supplement your dead reckoning except with LOP's from one celestial body. If you can continually fix the position of the

or later, no matter how inaccurate your ETA. But if you are off course and miss the island completely, an accurate GS is poor consolation.

Your LOP's may be course lines or speed lines, or they may cut the TR at some intermediate angle. Speed lines tell how far you have come and thus give you your GS. Course lines tell you what course you are making good. Obviously, then, when you are trying to reach an island, course lines are much more useful than speed lines. If the LOP's were all perfect course lines, it would be comparatively easy to reach destination.

The cut of the LOP's depends on the direction of the TR relative to the sun's azimuth. When you depart at a fixed time and fly a

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