"All Abord" for the Moon

(By CHARLES NEVERS HOLMES.) In Lloyd's Magazine.

Many of us have travelled around our world, a distance approximating twenty-five thousand miles. Shall we ever be able to travel from our world to the moon, a distance of about two hundred and thirty-nine thousand miles?

To-day, of course, we cannot do so; but it is not impossible that some day men may travel from our earth to the moon, and back again. No one at all familiar with the progress of modern science and invention will deny that such a journey is a future possibility. Indeed, it may be that to-morrow some stupendous discovery will revolutionise aerial navigation, and if this should occur, a journey to the moon would soon be occupying the minds and energies of terrestrial inventors and scientists.

Even with the assistance of remarkable discoveries, however, there will remain great difficulties in the way of travelling from the earth to the moon. The first of these is the force that binds us to our world's surface. This force, which we call gravity, pulls us towards the centre of the earth, away from the moon, and it is so powerful that at present we know of no means by which to counteract it.

To break its chain, so that we can fly away from our planet home, would require a velocity of not less than thirty-seven thousand feet per second. Since the best modern guns can throw a shell with a speed of about three thousand feet per second, it is evident that we should have to be projected from our terrestrial surface about twelve times as fast in order to reach the surface of the moon.

Furthermore, because both earth and moon are in motion, we should have to make careful mathematical calculations in order to hit the mark. Otherwise, in case our sky-craft should miss the moon, we might go on travelling through space indefinitely, unless some planet, like Jupiter, were to capture us.

Moreover, there are other difficulties and dangers in making a trip to the moon. Our sky-craft would have to be strongly constructed—very strongly indeed—to stand such a journey. Leaving out of consideration the friction and pressure upon it in passing through our atmosphere at such tremendous speed, there would be a great outward pressure from within it after we reached the vacuum-like environment of the ether.

In order to remain alive, we should have to be surrounded by practically the same conditions inside our craft as they were when we left the terrestrial surface. We should have to breathe, and to have about the same atmospheric pressure upon our bodies as at the surface of our earth. Therefore—unless some unpredictable scientific discovery should assist us—the walls of the craft would have to be exceedingly strong to resist the tendency to expand outwardly into the ether, thus causing some opening which might suddenly or slowly destroy us.

Again, the walls of our sky-craft would have to be very strong to resist possible collisions with aerolites—the small or large rock fragments popularly known as "shooting stars." When we remember that these bodies are travelling with a velocity of ten to forty miles per second not far from the earth's surface, and that our craft would be speeding some seven miles per second, it is evident that a headon collision would not be a gentle one.

When our sky-craft reaches the moon, its landing is not likely to be at all a soft one, since the moon possesses no known atmosphere to retard our speed, and the lunar surface is believed to be wholly rocky and hard.

Doubtless, were we able to hurl our sky-craft free from terrestrial gravity, we could to-day build a craft that would weather an ethereal voyage from the earth to the moon. Doubtless it could be constructed to stand the powerful attacks of pressure and of aerolites, as well as the sudden and terrific bump at the end of the route. Our astronomers of this twentieth century could certainly aim such a craft so that it would reach its destination, and it is probable that the crew would not have much to do.

But the power required to hurl a sky-craft, weighing perhaps ten tons or more, with a velocity of about seven miles per second, from the terrestrial surface and through the atmosphere into the ether, would be nothing less than terrific. It seems an almost impossible thing to do, but future discoveries and inventions may put it in a different light.

We can calculate, at least approximately, how long such a voyage would take. Leaving out of consideration the acceleration of the sky-craft owing to the attraction of the moon, the average time would be about nine hours and a half. In other words, we could embark in England at 8 p.m. and disembark upon the moon before six o'clock the next morning.

But now another problem arises. After we have reached the moon, how are we to get home? That is a difficult question to answer, although, if we had the necessary mechanism to propel our craft, it would be easier to return to the earth than to go to the moon. Upon the lunar surface, owing to the smaller mass of the moon, the force of gravity is only about one-sixth that of our terrestrial gravity, and it would therefore require a velocity of only a little more than six thousand feet per second to overcome it. However, the voyage would be longer—about fifty-six hours. Thus the whole trip to the moon and back, if there were no delay, would take almost three days.

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Shiny millinery is losing its popularity.
Rainbow tweed is much used for spring suits.