Did Thiokol test the O-Rings properly?   No!
Did they solve the problem?   No!

But if Thiokol ....

If Thiokol *had tested* the O-Rings properly, they *would have solved* the problem.

Was the weather forecast correct?   No!
Did they launch?   No!

But if the weather forecast ....

If the weather forecast *had been* correct, they *would have* launched.

Did NASA have the correct tools to fix the hatch door?   No!
Did they close the door quickly?   No!

But if NASA ….

If NASA had had the correct tools to fix the hatch door, they would have closed the door quickly.

Were the first batteries dead?   Yes!
Did they need to send for more batteries?   Yes!

But if the first batteries ….

If the first batteries had not been dead, they would not have needed to send for more batteries.

Did they fix the hatch door in time?   No!
Did they launch?   No!

But if they ….
If they had fixed the hatch door in time, they would have launched.

Did NASA know about the O-Ring problem?   No!
Did they launch?   Yes!

But if NASA ….
If NASA had known about the O-Ring problem, they would not have launched.

Was the temperature on launch day very cold?   Yes!
Did the O-Rings freeze?   Yes!

But if the temperature….

If the temperature on launch day had not been very cold,
the O-Rings would not have frozen..

Was the shuttle hit by a strong wind?   Yes!
Did the O-Ring seal break?   Yes!

But if ….

If the shuttle had not been hit by a strong wind, the seal
would not have broken.

Did the seal break?   Yes!
Did the shuttle explode?   Yes!

But if the seal ….

If the seal had not broken, the shuttle would not have exploded.

Did NASA and Thiakol make good decisions?   No!
Did the disaster occur?   Yes!

But if NASA and Thiakol ….

If NASA and Thiakol had made good decisions, the disaster would not have occurred.

Note that a reverse clause order is also possible:

If the seal had not broken, the shuttle would not have exploded.
- The shuttle would not have exploded if the seal had not broken.

If NASA and Thiakol had made good decisions, the disaster would not have occurred.
- The disaster would not have occurred if NASA and Thiakol had made good decisions,

Note the comma when the if-clause starts the sentence!