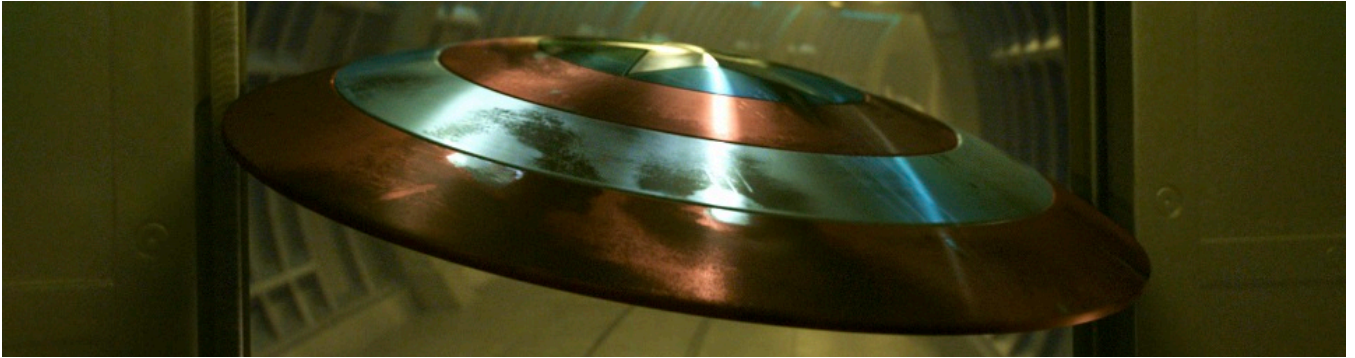


# CAPTAIN AMERICA: THE FIRST AVENGER



The biggest and most unique VFX challenge in the film was how to portray Steve Rogers before he becomes Captain America. As an origins movie, we knew that “Skinny Steve” would be our main character for the first third of the film, appearing in 200 of the nearly 1600 total shots. Since the key creatives wanted Chris Evans’ performance on the screen, with all the nuances he would bring to the character on set, interacting with the other actors, we had to figure out a way to make him 100lbs leaner and 5” smaller: his muscle mass had to be non-existent but he still needed to be attractive and charming enough for the audience to not only get to know him, but also totally believe and sympathize with him. Most importantly, they should never question him as an effect. We investigated various complex and groundbreaking techniques and in the end, determined a predominantly 2D approach – mesh-warping Chris’ body and face, shrinking him down and skinning him up – was the most elegant and flexible solution.



We generally shot every scene multiple times, relying on the grips and camera to repeat the move whilst reviewing 50/50 mixes on a monitor. We would shoot Chris in the master, adjusting all the actors’ eyelines and physical heights in frame to account for the distance we’d be shrinking him. We’d then shoot the scene again, with a smaller actor, who would mimic Chris. This, at minimum, gave us reference of a smaller person in the environment and occasionally, we were able to use parts of his body – which we’d also make thinner - in the final composite. Finally, we’d shoot a clean plate, without Chris, to assist in recreating parts of the image that the much larger actor occluded.





After doing a rough cut, we rotoscoped or keyed Chris out of the master plate and literally started to mesh warp his whole physique, frame by frame, altering not only his height and overall thickness, but also reducing the width of his shoulders and thinning out and digitally resculpting his muscles. Extensive lightening of areas also had to be done to remove the shadows caused by his bulk. Slimming Chris' face was probably the hardest part; thinning out his facial features and his neck, narrowing the squareness of his jaw just enough to make his head fit on his new body, without losing the features which make him recognizable. This was particularly challenging as going from melancholic to sad was just a couple of pixels difference at the corner of the eyes.



For the remaining 1400 VFX shots, we literally created planes, trains and automobiles, and the huge environments they lived in. We had an antagonist, Red Skull, who needed to look like a walking, talking skull, only achievable by altering Hugo Weaving's prosthetic, digitally sculpting his jaw and by removing his nose. Thirteen VFX companies, in England, America, Australia and Germany, worked on the film, and our sincere thanks go out to everyone who contributed.



Christopher Townsend, Visual Effects Supervisor