



ISSUE 16

BUILD THE GHOSTBUSTERSTM ECTO-1





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CAR PARTS STAGE 55

In this stage, you receive the parts for the Ectomobile's radio and handset.

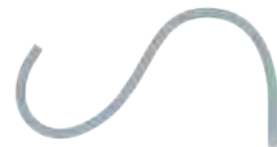
55A



55B



55C



55D



55E



55F



DP x3



PART NUMBER	DESCRIPTION	QUANTITY
55A	AN/PRC-41 RADIO CONTROL PANEL	1
55B	AN/PRC-41 RADIO	1
55C	H-33 HANDSET CORD	1
55D	H-33 HANDSET	1
55E	H-33 HANDSET RECEIVER	1
55F	H-33 HANDSET DIAPHRAGM	1
DP	2x6MM	3 (+1 SPARE)

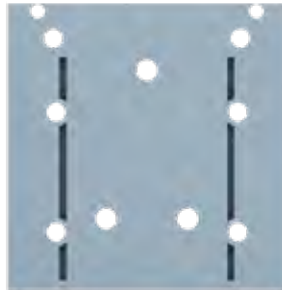
CAR PARTS STAGE 56

In this stage, you receive parts for the next jump seat including the support.

56A



56B



56C



56D



56E



56F



EP x6



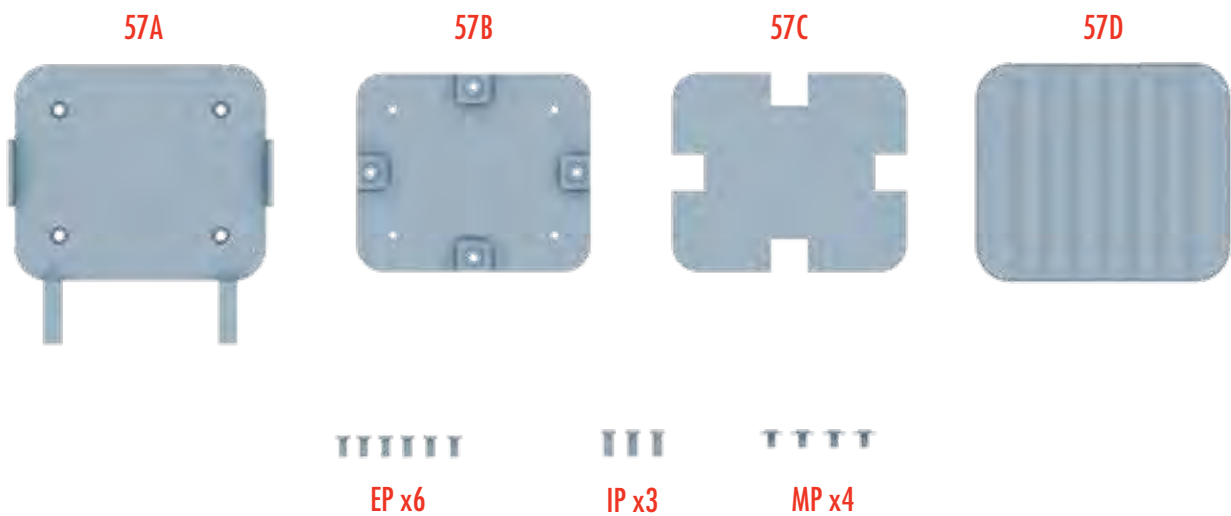
MP x4



PART NUMBER	DESCRIPTION	QUANTITY
56A	JUMP SEAT BASE	1
56B	JUMP SEAT BASE CONNECTOR	1
56C	JUMP SEAT SUPPORT	1
56D	JUMP SEAT	1
56E	JUMP SEAT SPONGE	1
56F	JUMP SEAT INTERIOR	1
EP	1.7x4MM	6 (+2 SPARES)
MP	1.7x4x5MM	4 (+1 SPARE)

CAR PARTS STAGE 57

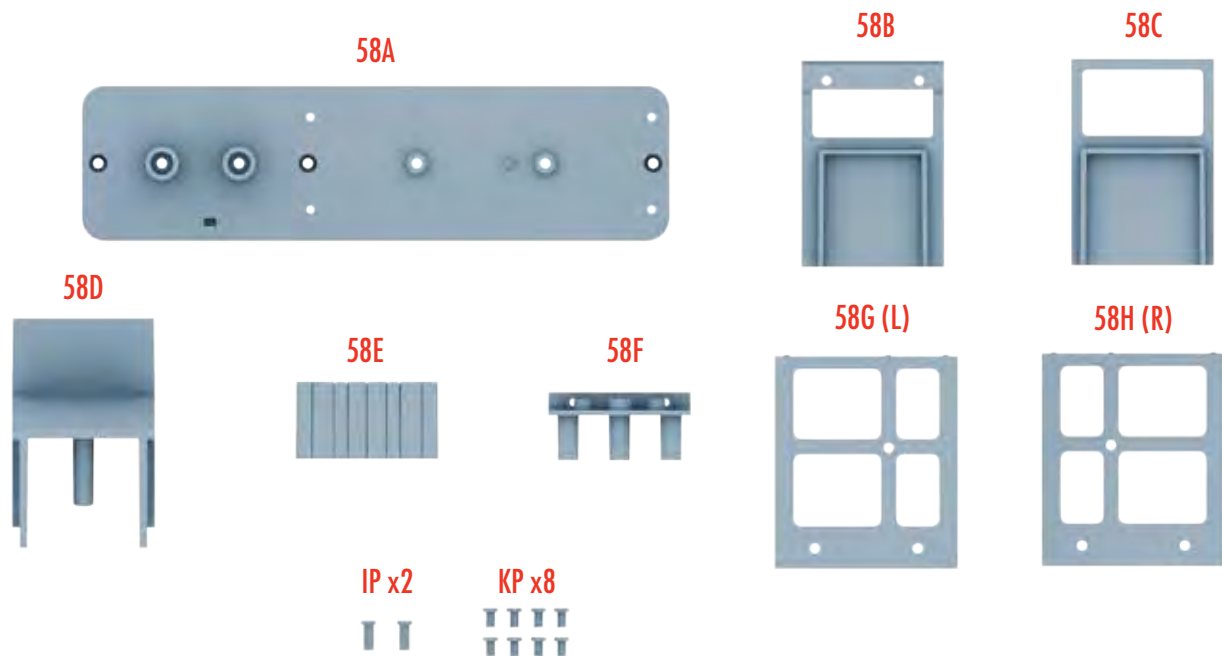
In this stage, you receive the final parts
for your second jump seat.



PART NUMBER	DESCRIPTION	QUANTITY
57A	JUMP SEAT SEATBACK FRAME	1
57B	JUMP SEAT SEATBACK INTERIOR	1
57C	JUMP SEAT SEATBACK SPONGE	1
57D	JUMP SEAT SEATBACK	1
EP	1.7x4MM	6 (+2 SPARES)
IP	2x5MM	3 (+1 SPARE)
MP	1.7x4x5MM	4 (+1 SPARE)

CAR PARTS STAGE 58

In this stage, you receive the parts for the power control unit, as well as the base for the power distribution unit.



PART NUMBER	DESCRIPTION	QUANTITY
58A	MARTIN MARIETTA UHF SIGNAL AND POWER DISTRIBUTION UNIT BASE	1
58B	POWER CONTROL UNIT FRONT	1
58C	POWER CONTROL UNIT REAR	1
58D	POWER CONTROL UNIT BODY	1
58E	POWER CONTROL UNIT TOP	1
58F	POWER CONTROL UNIT CYLINDERS	1
58G	POWER CONTROL UNIT LEFT SUPPORT	1
58H	POWER CONTROL UNIT RIGHT SUPPORT	1
IP	2x5MM	2 (+1 SPARE)
KP	1.7x3MM	8 (+2 SPARES)

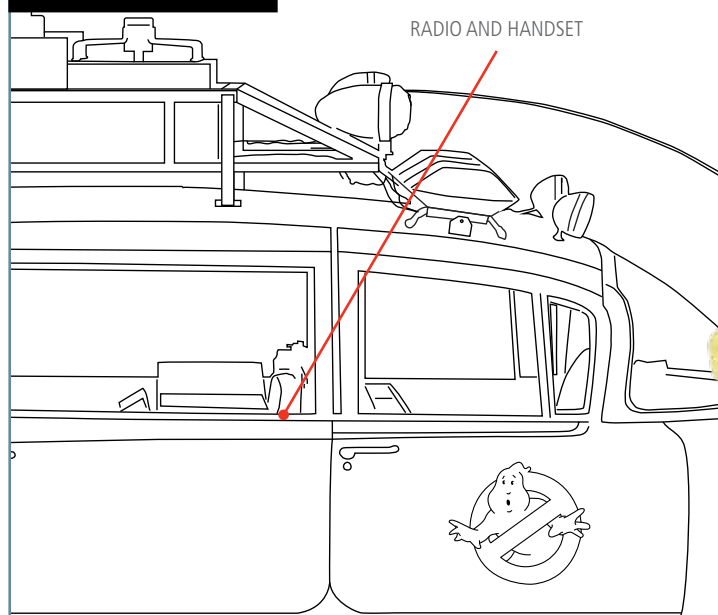


STAGE 55

RADIO AND HANDSET

In this stage, you assemble the radio and handset, fitting them to the cargo area.

PART LOCATOR



RADIO AND HANDSET

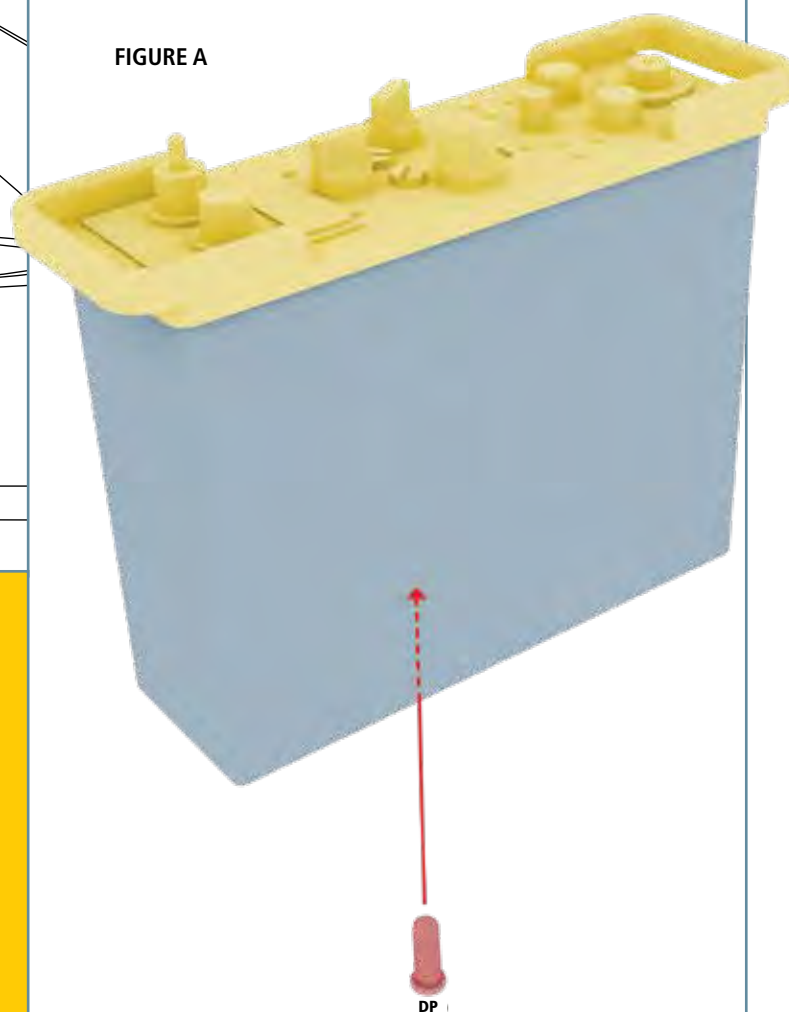
TIP: PVC CABLES

When fitting PVC cables, use a pair of tweezers and grip carefully around 5mm from the end of the cable. The ends of the cables should fit tightly onto the connector pins. If the end of the cable is too narrow to fit on to the pin, cautiously insert a cocktail stick into the end of the cable to make it wider. Be wary not to split the end of the cable doing so.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY-BLUE** Indicates the previous assembly on to which the new part is fitted

- 01 ASSEMBLING THE RADIO:** Place the radio control panel (55A) atop the AN/PRC-41 radio (55B), affixing from below with one DP screw (figure A).

FIGURE A

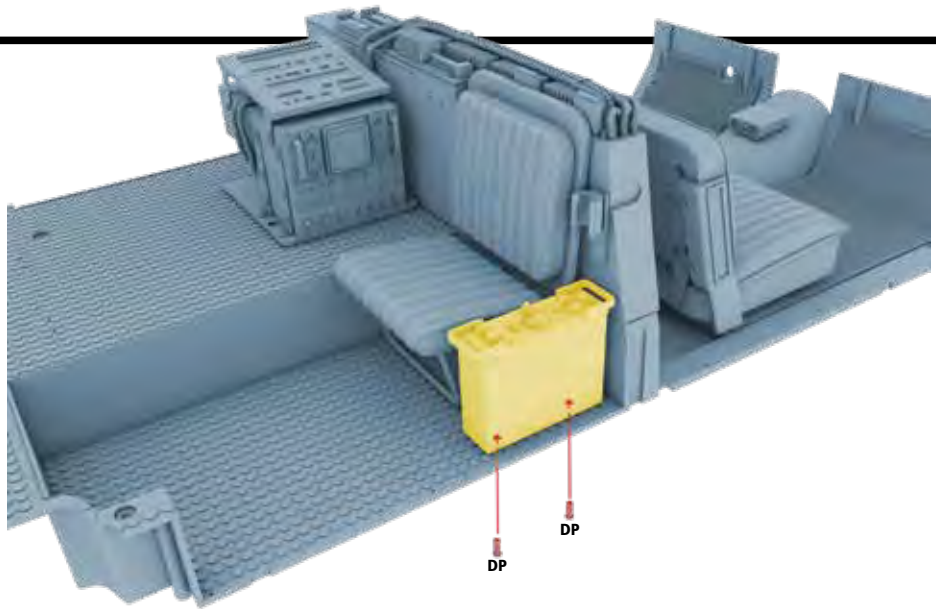




02 FITTING THE RADIO:

Take the parts you assembled in step 1 and place them on the cargo area floor next to the jump seat. Secure the parts together with two DP screws (figure A).

FIGURE A

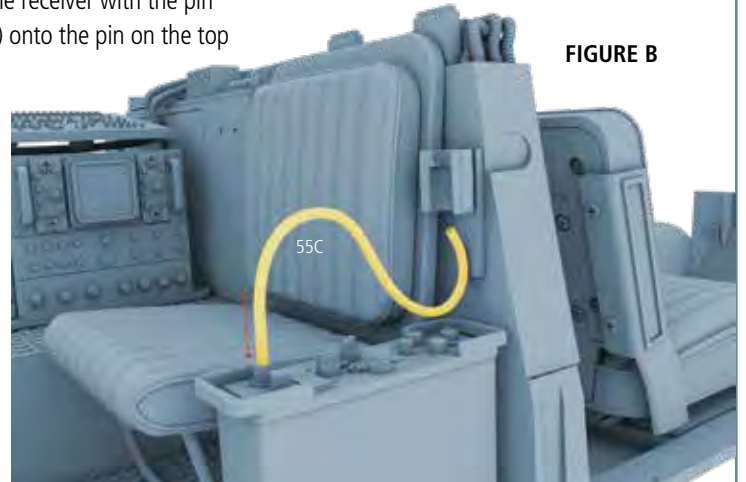


03 ASSEMBLING THE HANDSET: Begin by fitting the receiver (55E) to the wider end of the H-33 handset (55D). Then fit the diaphragm (55F) to the end of the receiver with the pin on the reverse side (figure A). Finally, push the handset cord (55C) onto the pin on the top of the radio (figure B).

FIGURE A



FIGURE B

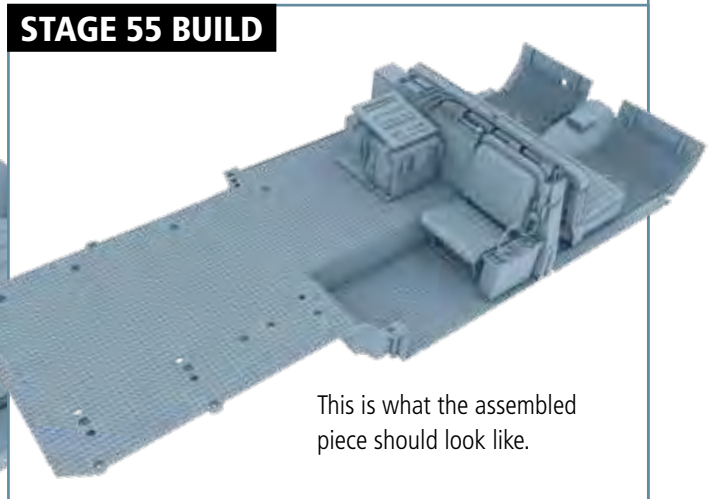
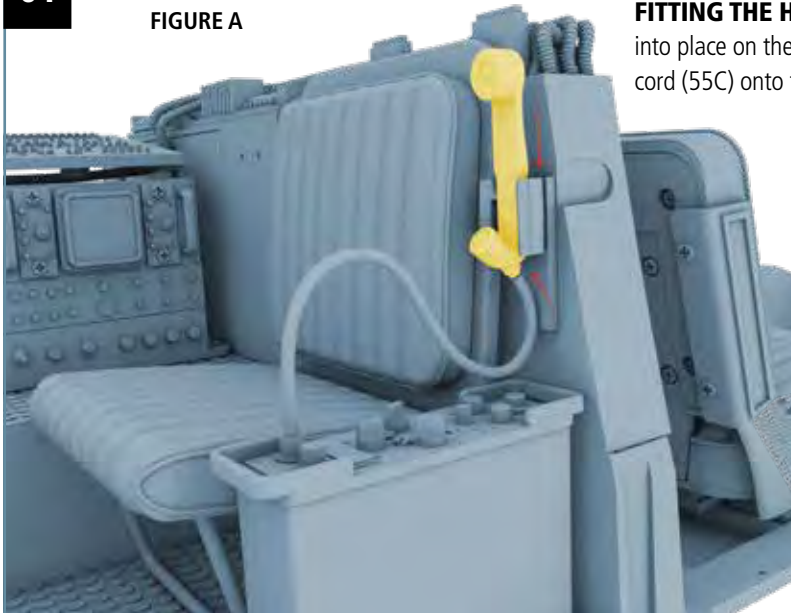


04

FIGURE A

FITTING THE HANDSET: Take the completed handset and push it into place on the phone cradle (49C) (figure A), pushing the handset cord (55C) onto the pin on the receiver.

STAGE 55 BUILD



This is what the assembled piece should look like.

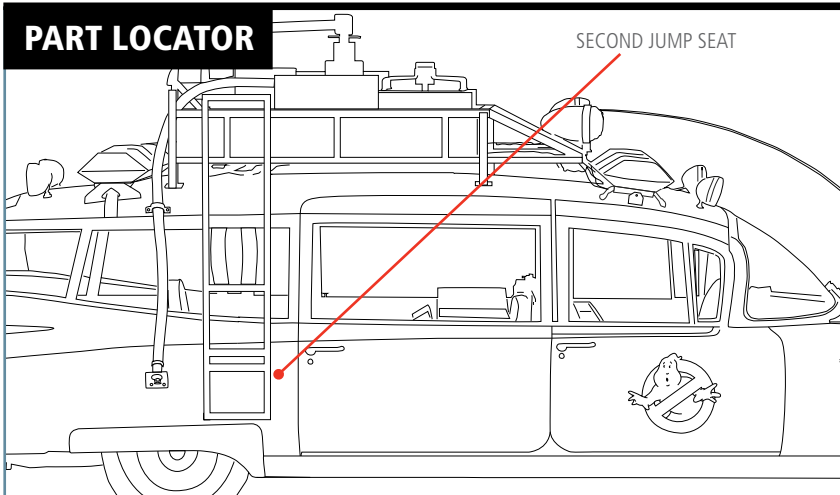


STAGE 56

SECOND JUMP SEAT

In this stage, you begin assembling the second jump seat.

PART LOCATOR



TIP: SPARE PARTS

Keep hold of the bags that the parts come in. If you have any spare parts that need to be kept safe for use in a later part of the build sequence, you can keep these parts in the bag.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY-BLUE** Indicates the previous assembly on to which the new part is fitted

01

ASSEMBLING THE JUMP SEAT: Insert the jump seat sponge (56E) into the center of the jump seat (56D) (figure A). Then place the jump seat interior (56F) on top of this assembly, securing the parts together with four MP screws (figure B).

FIGURE A

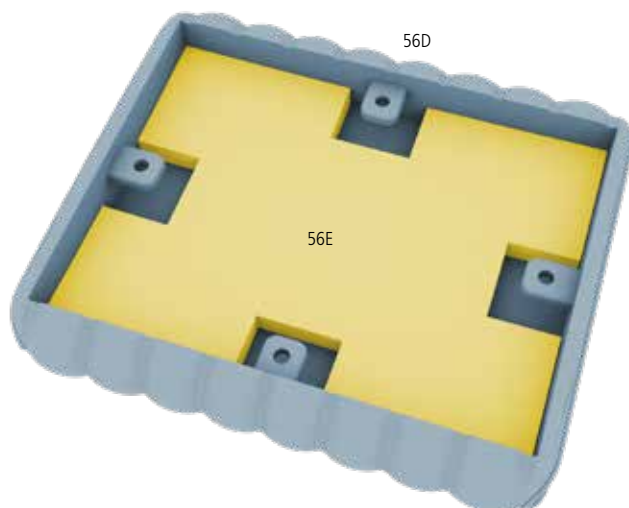
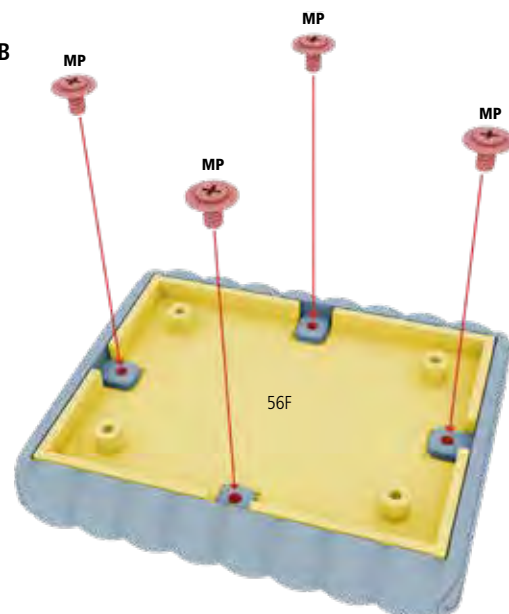


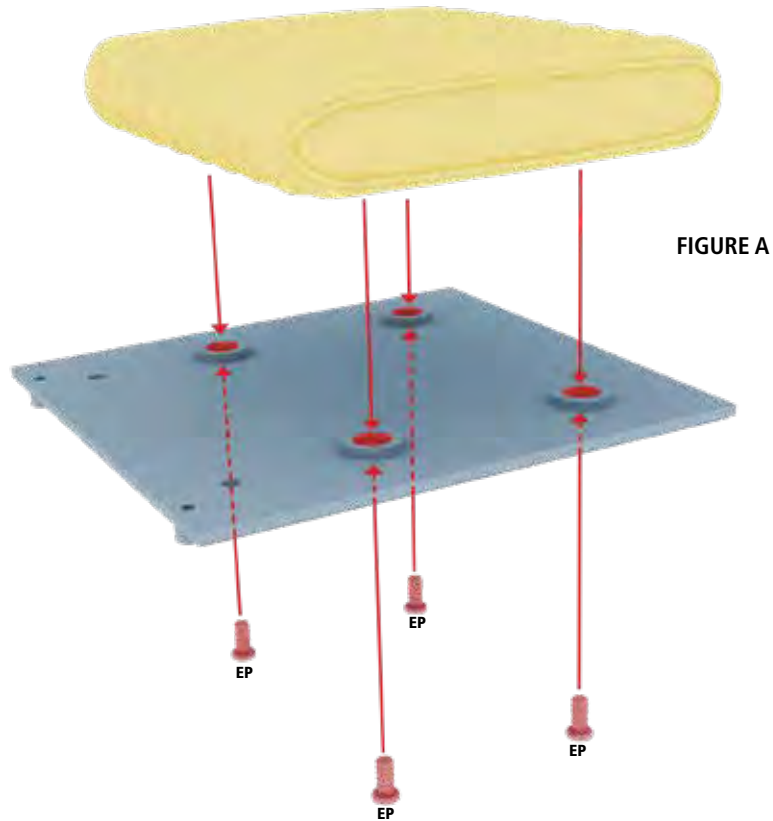
FIGURE B



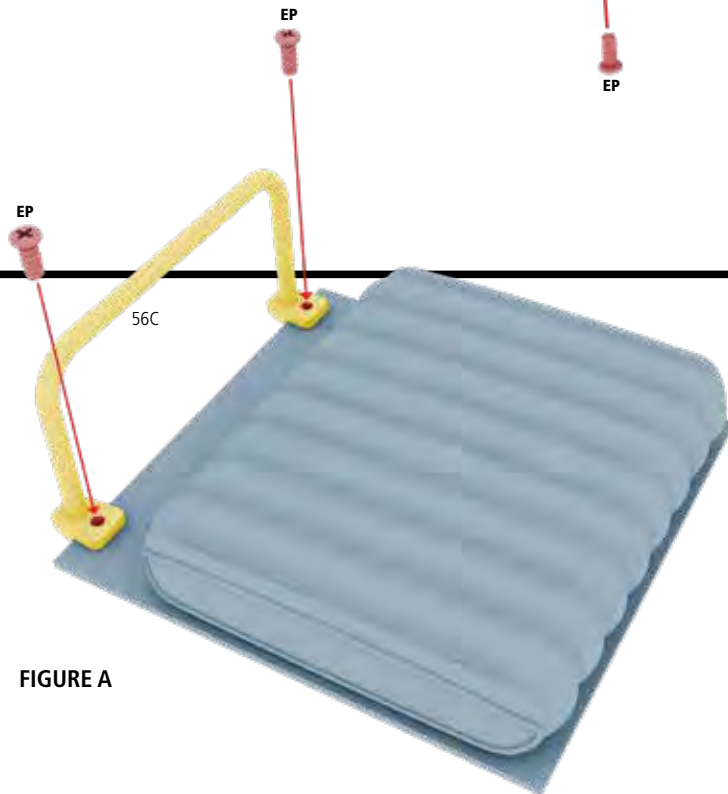


02

FITTING THE BASE: Take the parts you assembled in step 1 and place them atop the jump seat base (56A), securing from underneath with four EP screws (figure A).



03

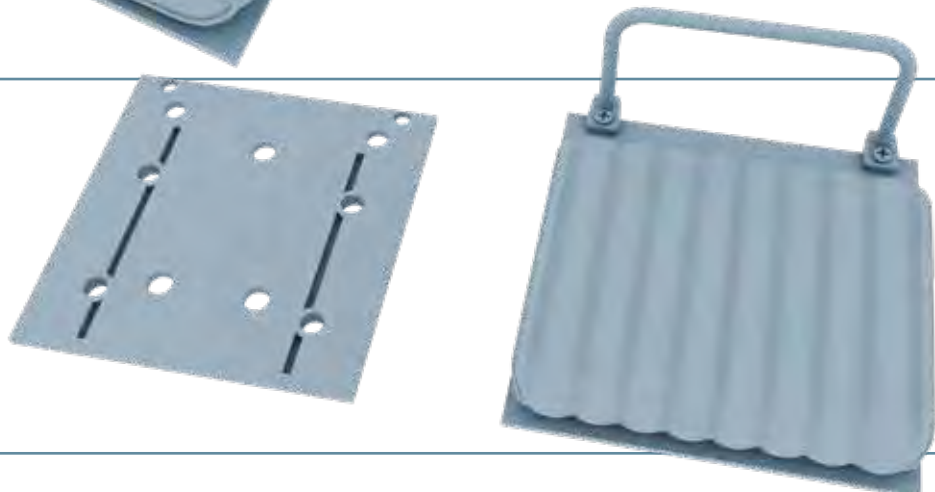


FITTING THE SUPPORT: Place the jump seat support (56C) on the jump seat base (56A) so that the two screw holes on the support line up with the two holes at the bottom of the base. Fit the two parts together with two EP screws (figure A).

Retain the jump seat base connector (56B) as this will be fitted in the next phase

STAGE 56 BUILD

This is what the assembled piece should look like.



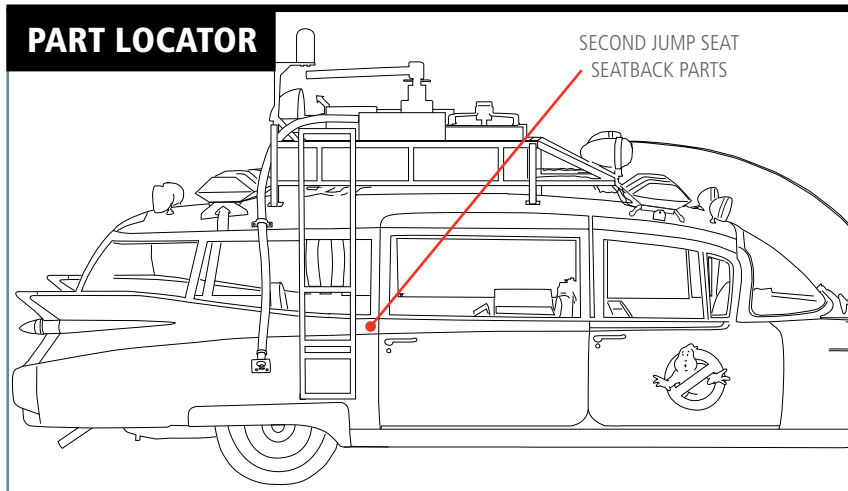


STAGE 57

SECOND JUMP SEAT SEATBACK

In this stage, you finish assembling the second jump seat and fit it to the interior of the Ectomobile.

PART LOCATOR



SECOND JUMP SEAT
SEATBACK PARTS

TIP: TIGHTENING THE SCREWS

Screws with codes ending in the letter M (such as BM and CM) drive into metal; those ending in the letter P (such as BP and CP) drive into plastic.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY-BLUE** Indicates the previous assembly on to which the new part is fitted

01

BUILDING THE SEATBACK: Begin by inserting the seatback sponge (57C) inside the seatback (57D) (figure A). Then place the seatback interior (57B) on top, securing the part together with four MP screws (figure B). Finally, place the seatback frame (57A) on the assembled parts, fastening with four EP screws (figure C).

FIGURE A

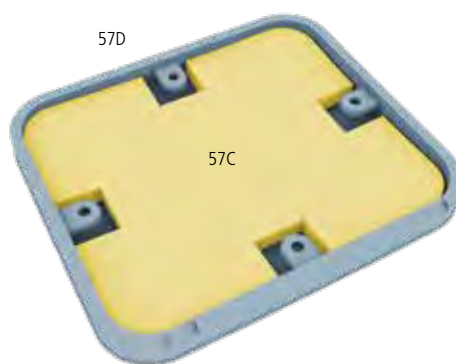


FIGURE B

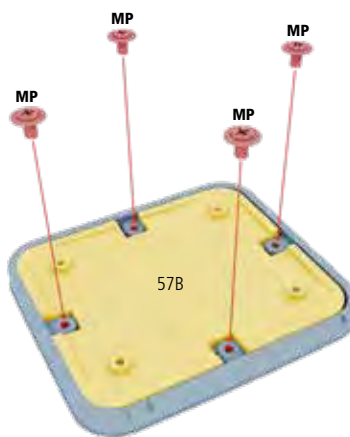
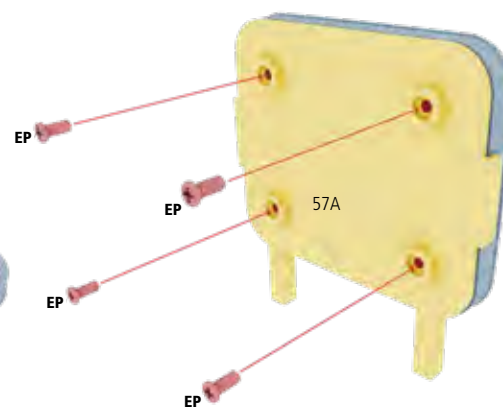


FIGURE C





02 FITTING THE SEATBACK:

Place the seatback on the jump seat base (56A) and secure with two EP screws (figure A).

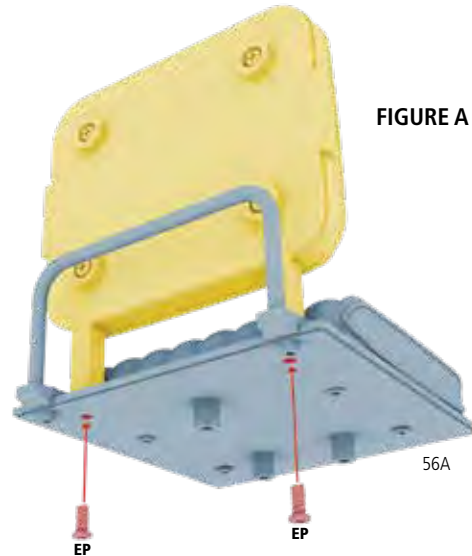


FIGURE A

03 FITTING THE CONNECTOR:

Take the jump seat base connector (56B) and push it into the bottom of the jump seat assembly so the three silver screw posts on the bottom of the base poke through the connector (figure A). Then, place the jump seat on the cargo area floor (52A) (figure B). Fasten from beneath with three IP screws (figure C).

FIGURE A

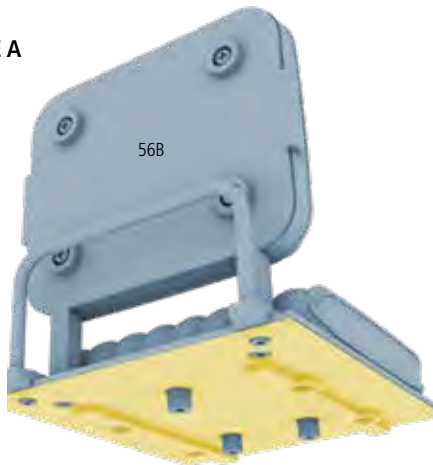


FIGURE B

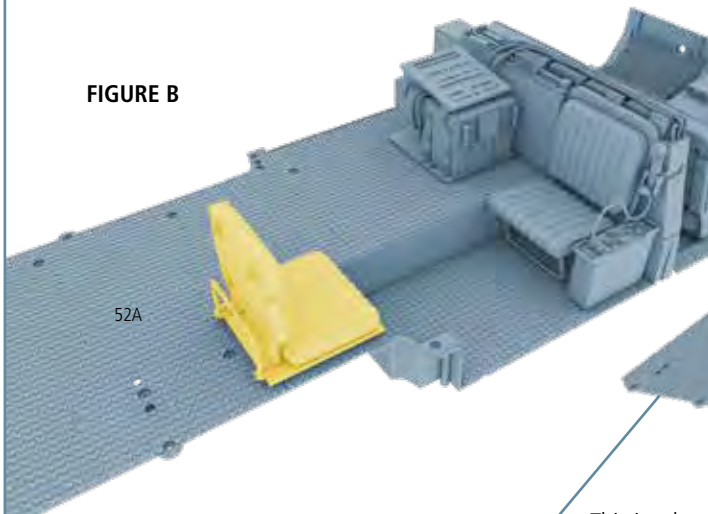
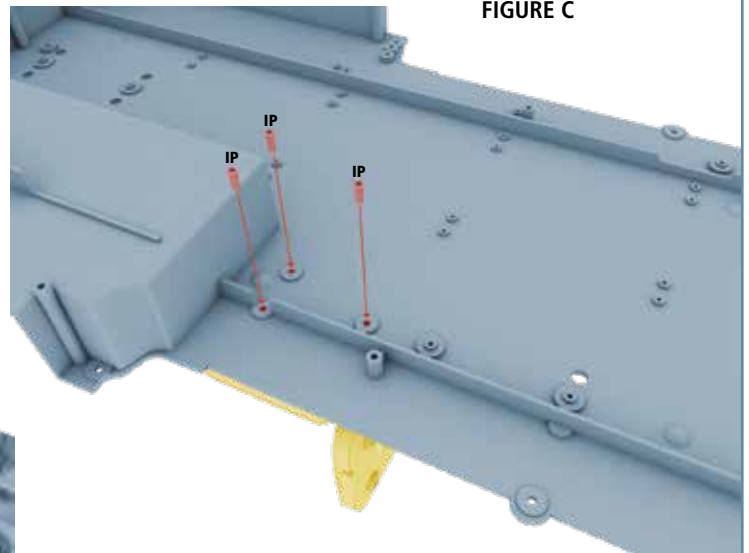
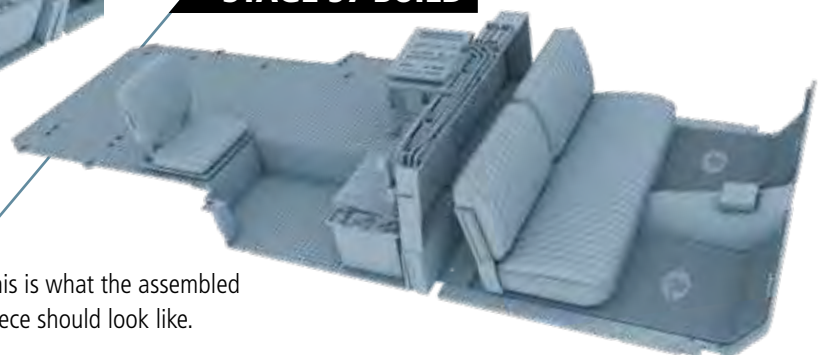


FIGURE C



STAGE 57 BUILD

This is what the assembled piece should look like.



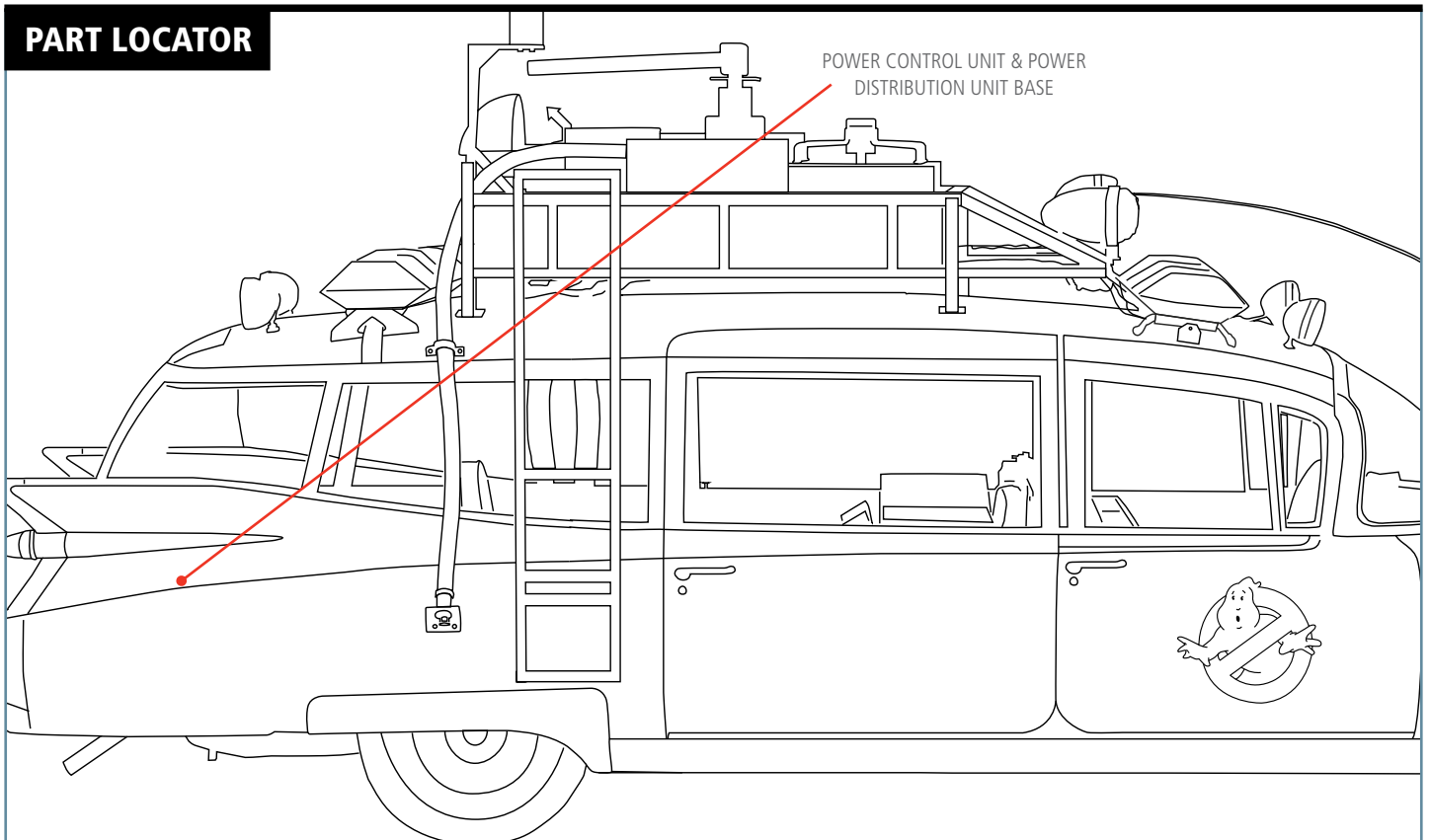


STAGE 58

POWER CONTROL UNIT & POWER DISTRIBUTION UNIT BASE

In this stage, you assemble the power control unit as well as preparing the base for the power distribution unit.

PART LOCATOR



TIP: TIGHTENING THE SCREWS

Screws with codes ending in the letter M (such as BM and CM) drive into metal. Those ending in the letter P (such as BP and CP) drive into plastic.

Self-tapping screws for metal cut their own thread in the pre-drilled socket. To prevent the screw from jamming before it is fully tightened, drive the screw only halfway in at first. Then unscrew it to release the shavings (swarf) created as the screw cuts its thread. Finally, drive the screw fully into the socket.

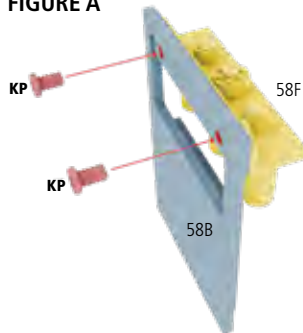
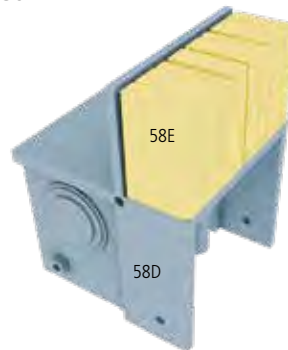
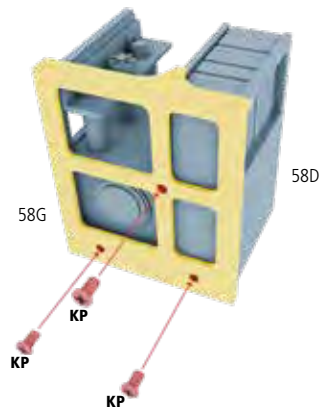
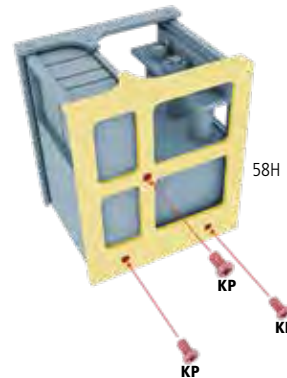
Do not over-tighten screws into plastic. For screws into metal, ensure that they are tightened securely so that the head makes firm contact with the fixing surface.

KEY: The illustrations are color-coded to help you identify which parts are being assembled. **RED** Highlights where the new part/s fit and screw in **YELLOW** Identifies the new part/s **GRAY-BLUE** Indicates the previous assembly on to which the new part is fitted

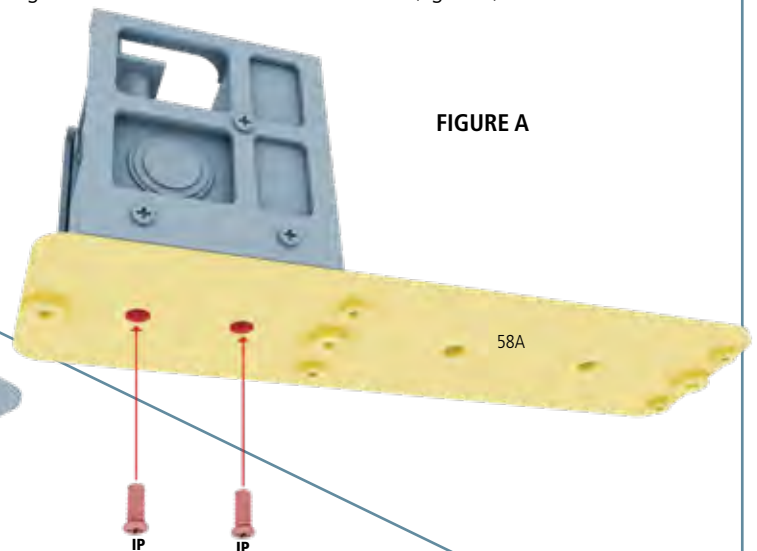
**01**

ASSEMBLING THE POWER CONTROL UNIT: Begin by fastening the power control unit cylinders (58F) to the unit front (58B) with two KP screws (figure A). Next, place the unit top (58E) on top of the unit body (58D) (figure B). Then combine the two parts together, pushing the unit rear (58C) into the end of the body (58D) (figure C).

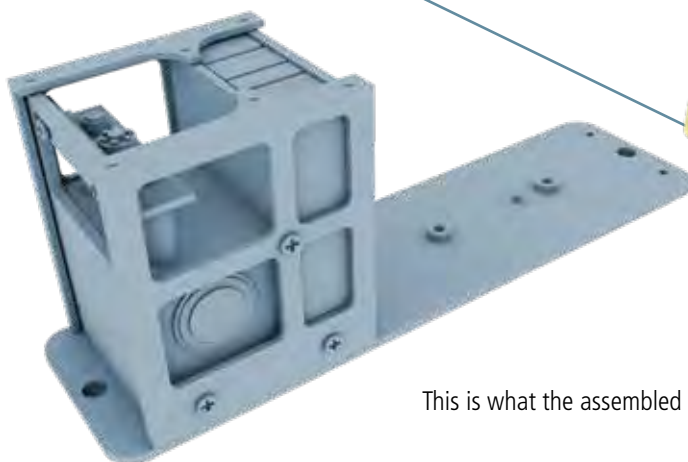
Fasten the unit left support (58G) to the unit body (58D) with three KP screws (figure D). Then turn the assembly around and secure the unit right support (58H) to the other side using three KP screws (figure E).

FIGURE A**FIGURE B****FIGURE C****FIGURE D****FIGURE E****02**

SECURING THE UNIT TO THE BASE: Take the power control unit assembled in the previous step and place it on the Martin Marietta UHF signal and power distribution unit base (58A), securing from the underside with two IP screws (figure A).

FIGURE A

STAGE 58 BUILD



This is what the assembled piece should look like.



SIGOURNEY WEAVER

SIGOURNEY WEAVER



ABOVE A publicity shot from the first *Ghostbusters* movie.

OPPOSITE PAGE A group shot from *Ghostbusters II* finds Weaver the center of attention.



THE GATEKEEPER

Sigourney Weaver relished the chance to show off her lighter side in *Ghostbusters*, and was directly responsible for shaping many aspects of Dana's character.

S**IGOURNEY WEAVER DID**

something rather unusual during her audition for the role of Dana Barrett: she turned into a dog. A Terror Dog to be precise. "I remember starting to growl and bark and gnaw on the cushions and jump around," she told *Vanity Fair* in 2014. "Ivan cut the tape and said, 'Don't ever do that again.'"

In fact, Reitman loved the audition. By this point the filmmaker, along with casting director Karen Rea, had auditioned numerous actresses, including a young Julia Roberts ("I thought she was spectacular and I turned to my casting director, saying, 'She's going to be a big star,'" Reitman wrote in a 2016 *Hollywood Reporter* article). But Dana Barrett was so integral to the heart of the movie that it was crucial to have the right actress in the role. When Weaver walked in, Reitman was instantly impressed. "She was so smart about the script," he said. "She said, 'You know, I really think that Dana Barrett should be possessed. She should be like that dog on the roof.' And then she got on all fours on my coffee table, howling like a dog! She was funny and had





RIGHT Dana becomes the Gatekeeper after being possessed by Zuul.

BELOW Zuul reaches out to Dana from inside her fridge.



a regality, and having her with my Ghostbusters was like having Margaret Dumont with the Marx Brothers.”

When Reitman spoke to Harold Ramis about the audition, he realized that the idea of Dana becoming possessed should be incorporated into the script. “She was barely out of my office and we were writing it already,” he said.

MODEL TO MUSICIAN

Weaver’s spirited audition was an attempt to prove that she could handle a lighter, comedic role. After all, she was primarily known for her more serious performances in *Alien* (1979) and *The Year of Living Dangerously* (1982). “I had to blow my own horn because I hadn’t really done a film comedy, but I had done many onstage,” Weaver told *Esquire* magazine in 2014. As well as influencing Dana’s third-act possession, it was Weaver who suggested changing the character’s job from model to musician.

The chemistry between Dana and Venkman was always going to be crucial in making the romance between these two very different characters believable; luckily when the actors first met outside the New York Public Library, they hit it off straight away. “He literally said, ‘Hi, Sue’ [Weaver’s birth

“**DANA WAS INTEGRAL
TO THE HEART OF
THE MOVIE**”





name is Susan] and picked me up and threw me over his shoulder and walked down the street with me," Weaver told *Entertainment Weekly* for a reunion photoshoot in 2014. "Guys don't usually throw me, six feet tall, over their shoulders, and I



**“THE SEQUEL
BROUGHT NEW
DIMENSIONS TO DANA,”**

just fell in love with him right then and there.” Weaver and Murray both improvised much of the sweetly funny scene where Dana and Venkman first meet at Dana’s apartment.

The film was, of course, another box office success for Weaver. By the time the sequel was released in 1989, Weaver had a string of other hits to her name, including *Aliens* (1986), *Gorillas in the Mist* (1988) and *Working Girl* (1989), but she was happy





LEFT CLOCKWISE Dana in her decimated apartment; the Gatekeeper awaits the Keymaster; Dana's eggs mysteriously fry themselves.

to return to the role of Dana, telling *Hollywood Insider* at the time that it was “the closest character to me I’ve ever played.”

The sequel brought new dimensions to the character, with the addition of baby Oscar and Dana switching jobs from musician to art restorer. There was also a new twist on the original romance with Venkman. However, in one early draft of the movie, Dana did not return, instead replaced by a new love

interest for Venkman named Lane Walker. Luckily, Dana was back in subsequent drafts.

Weaver returned to the franchise, albeit in a different role, in a cameo as Dr. Rebecca Gorin in 2016’s *Ghostbusters: Answer the Call*. “It’s just a very sweet movie but also very funny and kind of crazy,” she told *Harpers Bazaar* at the time of the movie’s release. “I think that’s a big part of what films can do – take us to another world.”



SMILES AND SCARES

Ghostbusters proved that Weaver could handle lighthearted roles, and she followed it up with many more comedies in between more serious movies. Her role in 1988’s *Working Girl* earned her a Best Supporting Actress nomination, while other successful comedies in Weaver’s career include *Dave* (1993), *Galaxy Quest* (1999), *Heartbreakers* (2001), *Tadpole* (2002) and *Baby Mama* (2008). Of course, *Ghostbusters* is as much a horror as it is a comedy, and Weaver has also worked on plenty of other scary movies, most notably the *Alien* sequels and 1997’s *Snow White: A Tale of Terror*.



STRANGE NOISES

Ghostbusters' sound designer Richard Beggs reveals how he created the film's weird and wonderful wails, zaps and crunches.

Interview: Daniel Wallace

T HE SPUTTER OF AN ION STREAM, THE GROAN of the Ectomobile's siren, and the whump of Stay Puft's heavy footfalls. What do all these things have in common? Sound designer Richard Beggs.

Ghostbusters wowed audiences with its visual effects, but the audio innovations that Beggs spearheaded were just as critical for anchoring the otherworldly action within a real world context. After winning an Academy Award® for his work on Francis Ford Coppola's *Apocalypse Now*, Beggs planted roots in San Francisco and continued his Coppola partnership. It was then that he got an offer to work on Ivan Reitman's new horror-comedy in Hollywood.

"I was called in almost like a hitman to deal with certain [audio] aspects," says Beggs, who explains that director Reitman had specific sound needs that were tied to the film's high-tech hardware and



its ectoplasmic specters. “I really hadn’t done many Hollywood pictures. When they called me up I was excited, but this was going to be a first for me.”

Though required to fly down to the Columbia offices once or twice a week to attend meetings, he found that most of his sound work could be completed at his San Francisco sound studio. At the outset Beggs didn’t quite know what to expect from *Ghostbusters*, but as soon as footage started rolling in he connected with the film’s breezy wit. “I’d be sitting alone up in my little cave [studio] and I’d just be laughing,” he says. “I’d laugh at the same scene every time I watched it, and most scenes I had to watch 60 or 100 times!”

Reitman immediately began doling out audio tasks to his new sound designer, and Beggs tackled the checklist with stubborn skill and old-school tech.

SONIC EXPERIMENTS

“My process was somewhat eccentric,” Beggs admits. “I had a 24-track recorder synched to a video tape, and I composed my sequences using 22 tracks – one

**“ I WAS CALLED IN LIKE
A HITMAN TO DEAL WITH
CERTAIN AUDIO ASPECTS ”**

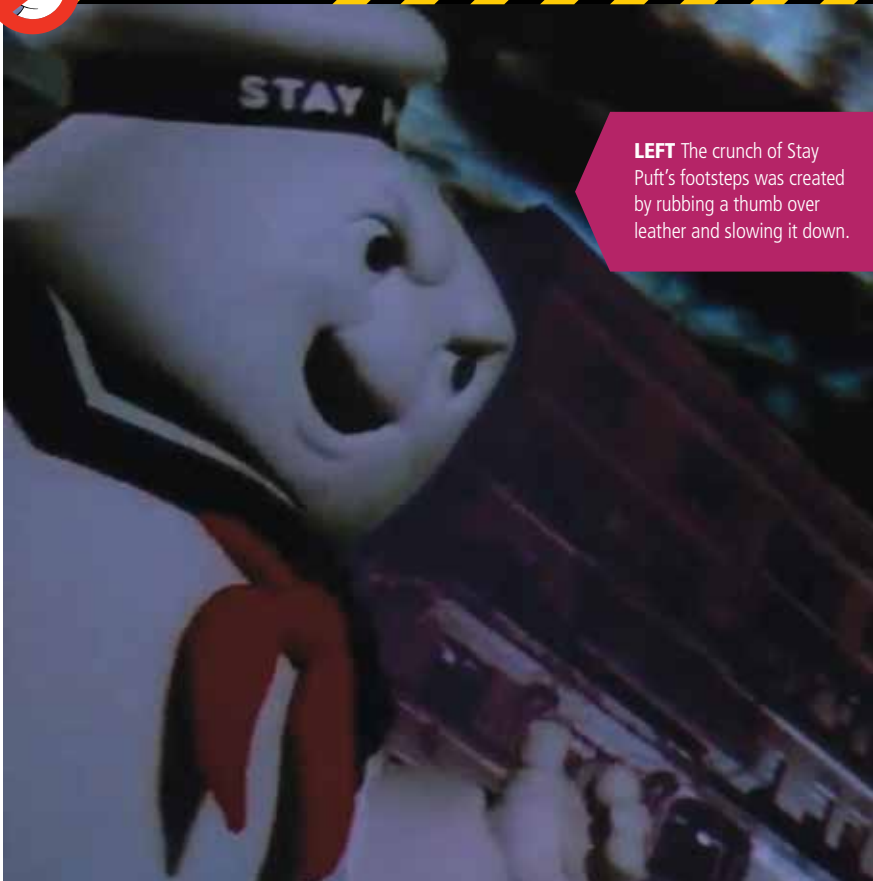
track reserved for time codes and a guard track to prevent bleeding into an adjacent track. I had hot-rodded an Ampex two-track machine by removing a heavy flywheel idler, so when I punched it, it started instantaneously. But I still had to punch it! You couldn’t synch visually the way you can today by checking waveforms. Everything was purely by eye.”

With those 22 tracks Beggs wove layered, evocative sonic moments. He steered away from stock sound effects as much as possible, preferring original recordings instead. “I have a penchant for organic sounds based in reality that are then altered,” he says. “80% of the sounds on *Ghostbusters* were organically made in my own studio.”

Such was the case with the noise of the energy gushes that accompanied each squeeze of a neutrona wand’s trigger. “I used a digital pitch [device] and fed it back into itself, using the pitch control knob to arrive



BELOW Ecto-1’s wail was actually the sound of a leopard cry which had been cleverly manipulated.



LEFT The crunch of Stay Puft's footsteps was created by rubbing a thumb over leather and slowing it down.

||.||.||. SOUND DESIGN GLOSSARY ||.||.||.

ADR: Dialog re-recorded in post-production to improve quality

CONTRAPUNCTUAL SOUND: Sound that deliberately contrasts with the visuals or tone.

DIEGETIC SOUND: Sound inside the universe of the movie.

DOUBLE-SYSTEM RECORDING: Sound for a scene that is recorded on a separate device from the camera.

FOLEY SOUNDS: Everyday sounds (such as creaking doors or breaking glass) recreated and synched to the movie in post to enhance the impact.

HYPER-REAL SOUND: Exaggerated, rather than realistic, sound.

NATURAL SOUND: Background noise while filming, such as birds

chirping, cars driving past etc. Useful for establishing a sense of realism.

NON-DIEGETIC SOUND: Sounds added outside of the universe of the movie, including the music soundtrack.

PARALLEL SOUND: Sound that matches the visuals or tone.

SOUND FX: Sounds created/enhanced and then added to the movie, such as the blast of an explosion. Unlike foley, they are not recorded to sync directly.

SUBJECTIVE SOUND: Sounds only heard (or imagined) by a character.

TIME CODES: Used to sync video and audio tracks.

WALLA: Sound effect imitating background murmur of a crowd.

at those sounds," says Beggs. "I must have spent a week at it. But I got this weird liquid quality that was more interesting than conventional sci-fi zaps."

SURGES AND PULSATIONS

The technology of the early '80s offered no way to save sound settings as presets, so Beggs had to go all-in when inspiration struck. "I knew if I came back the next day and tried to replicate it I'd never get it again," he explains. "So I recorded as many variations as possible, building a library so Ivan would have a choice. I was betting he'd be happy with at least one of them."

Beggs's sonic variations for the ion streams included many surges and pulsations, which proved useful for scenes where the ghostbusting crew blasted tables and dragged ion streams across walls. "It had a surging quality, and when it hit things it had more of a splash," he says. "Back then I was at a disadvantage because it was very hard to cut sounds to correspond with quick shifts on screen. But the looseness of the sound made it easier. At any time there was a chance





that something would hit just right, and I could pop my track on that spot to emphasize it. If you've been around a fire hose and seen how it works, that registers. That kind of familiarity with the physical world makes it easier to connect with the moment."

There's no better example of Beggs' organic philosophy than the siren of the Ecto-1. Its bleating wail is both familiar and bizarre, and its distinctiveness stems from its designer's strange choice of an audio backbone. "It was a leopard cry," Beggs explains. "I didn't have access to leopards, so I got [the sound] from the private collection of a colleague. I manipulated it to get that *err-reearr-err-reearr* by slowing it down, playing it backwards, and filtering it until I got it to where it was almost impossible [for someone else] to reverse-engineer. It sounds a little unrealistic but it doesn't sound implausible. The audience is willing to go with it and not dismiss it."

To create the sound of Stay Puft's colossal footsteps, Beggs found inspiration close to home. "I was looking around my studio for surfaces and there were these

chairs in the studio where the seat was this stretched piece of leather," he says. "Not as tight as a drumhead, but taut. I impulsively licked my thumb and rubbed it on the seat and got this dull crunch sound. I pitched it down by slowing the tape, and I re-recorded it until I got it where I wanted."

Because Beggs wasn't embedded in the Hollywood studio culture, Reitman viewed him almost as a neutral everyman. During production, the director approached Beggs for a sanity check on the film's climax, which he feared was veering into outrageousness. "[I sometimes felt like] a voyeur looking from the outside," says Beggs. "[One day] we were in the Columbia studio in Burbank and Ivan asked, 'What do you think of Stay Puft? Will people think it's over the top?' I told him 'No' with a kind of 'Are you crazy?' slant on it. But at the time Ivan was worried he might have been pushing the whole thing too far." It was a conversation that Beggs has kept in mind over the years. "It taught me something about making movies," he sums up. "Sometimes it can be hard to see what you've actually got."

BELOW Beggs created the sound of the neutrona wands being squeezed using a digital pitch device.



“ I GOT THIS STRANGE LIQUID QUALITY THAT WAS MORE INTERESTING THAN SCI-FI ZAPS ”



THE GHOST NANNY

The demonic nanny that grabs baby Oscar was realized with a mixture of blue screen work and puppetry, as Don Bies and Bob Cooper explain.

VARIOUS OPTIONS WERE CONSIDERED FOR the entity that kidnaps baby Oscar from Dana's apartment in *Ghostbusters II*. Concept artists such as Thom Enriquez and Benton Jew worked up diverse designs, including a double-headed bird and a bat monster, that were ultimately rejected in favor of an evil nanny.

Once it was decided that Janosz, under Vigo's influence, would snatch Oscar, Peter MacNicol dressed up in the nanny outfit and was shot holding the pram, suspended on a platform against blue screen. A full-size extended arm was attached to MacNicol for the moment in which the nanny reaches out to grab the baby.

Part of the sequence also utilized a puppet version of Janosz, which was supervised by the late stop motion animator Dave Allen. Effects artists Bob Cooper and Don Bies were amongst those who built and puppeteered it.

"We built up a body in soft foam directly on an armature, and



sculptor Mike Smithson sculpted heads and hands in the likeness of the actor,” recalls Bies. “A miniature replica costume was also created by [specialty costumer] Camilla Henneman. Because the stages were so busy, we acted as a night crew. We worked into the early morning to shoot all the angles required over the course of two to three nights.”

NANNY FROM HELL

Cooper adds that clever camerawork helped give the puppet an appearance of movement. “The puppet was mounted and stationary – it looked like the puppet was moving, but actually the camera

was moving,” he says.

The main challenge that the Ghost Nanny crew faced was getting the cape to flow in the right way. “Whenever you miniaturize something – in this case, cloth – you need it to flow like the full-size article,” Bies explains. “Getting the Ghost Nanny’s clothing to flap in the wind realistically was remedied by using a thin, flowing fabric. We had to augment its movements by attaching fish-line to the corners of the cape to help billow it out.”

The result was an effective horror sequence that acted as a segue into the third act showdown at the Museum of Art.

ABOVE Blue screen footage of actor Peter MacNicol was composited in with the miniature puppet version of the Ghost Nanny and the New York City skyline.



LEFT MacNicol as the Ghost Nanny incarnation of Janosz is filmed on a suspended platform against a blue screen.



LEFT The intricate mechanics under the skin of a Terror Dog, which helped the puppet move.

MONSTER MECHANISMS

Three of *Ghostbusters'* mechanism builders explain how a complex series of cables, pulleys, and tubes helped make the film's monsters stomp, scream, and roar.

BURIED UNDERNEATH THE LATEX SKIN, FOAM, and fabric of *Ghostbusters'* assorted ghosts and monsters lay an ingenious web of cables, joysticks, and pulleys that allowed the puppeteers to control the dramatic movements and expressions of the characters. These devices were constructed by Boss Film Studio's team of mechanism builders, including Lance Anderson, Larz Anderson (no relation), and Doug Beswick, as well as John and Nicholas Alberti of Alberti Designs, whose pioneering cable-controllers were widely used by puppeteers across the movie industry.

The Albertis were brought in by their old friend Stuart Ziff, Boss Film's ghost shop supervisor, to figure out a way to simplify

the mechanics of the librarian ghost so it would only require two puppeteers to operate. "This was way back before servo motors, and everything my father and I did on that library ghost was cable-controlled," John Alberti explains. "There were four levers that two puppeteers pulled to operate around 20 cables that made all the action occur in the model. We made two wooden benches that the puppeteers could sit down on with the levers either side of them, because you had to pull with quite a bit of force. There were cables of all sizes down there, from little spaghetti tubing glued into the skull to ultra-fine steel cable running to pull the eyeballs back and manipulate the jaw. There were all kinds of little slides and levers and engines too. We



just did anything that might work to get the head to distort the way they wanted it to and to get the skin to pull in.”

Alberti remembers how his father Nicholas, an aircraft engineer at Lockheed, made the ghost's extending arm mechanisms out of wood. “That was a pretty clever mechanism in the arms. It was a precision machine that slid out of the wood when you pulled the bicycle cable. The arms grew six or eight inches, though on film it's half-a-second, so you hardly see it.”

UNDER THE SKIN

Lance Anderson – today better known for his movie make-up work – was involved in constructing the mechanisms inside the heads of two of the film's most iconic creatures, Slimer and Stay Puft. “My job was to help design and build the mechanics for the [creatures'] jaw, cheek, eyes, eyebrow and eyelid movements, as well as create the fiberglass understructures [beneath the foam and latex],” he says. “Everything was operated by cables and joysticks, with levers and swivels that created simple movements with little resistance. The techniques used were not high-tech: there were no batteries, servos or radio signals to worry about. The visual effects [animators] took care of hiding the cables afterwards.”

Lance Anderson's fellow mechanism-builder Larz Anderson was tasked with building mechanisms for

the Terror Dogs. “I was like a machinist doing structural work under the skin to make the Terror Dogs perform the way we wanted them to,” he recalls. “This was way back when, before we had a lot of animatronics, so we had to set it up so the puppeteers could get inside and animate the creatures.”

One aim of Larz Anderson's mechanism building was to make the Terror Dogs less unwieldy for the puppeteers to operate. “There was so much weight in the foam that we had to put a whole mount underneath to counter the weight of the creatures and allow the puppeteers to manipulate them a little easier,” he says. “The Terror Dogs were so heavy that it was a big deal to get them on stage and set up so they could interact with the actors!”

All of the mechanism builders remember how everyone in the department worked incredibly long hours, six or seven days a week, coming up with ways to create believably terrifying or comical monsters. “When you see what it takes to make these things and then see how little is exposed to the audience, it's incredible,” says Alberti. “People will work 24 hours a day to make something that appears for a nanosecond. It's pretty amazing! A lot of good people really held the film together.”



ABOVE Mechanism builder Lance Anderson fixes cables and pulleys inside the Stay Puft head.





ECTO-101

A MONTHLY LIST OF ALL THE THINGS THAT
MAKE GHOSTBUSTERS GREAT.



#16

JOHN CANDY

Rick Moranis is so perfect as Louis Tully that it's strange to think the role was originally written for another great comedian – John Candy. Candy had known the core team behind *Ghostbusters* for several years. Not only had he been part of the Canadian comedy troupe Second City with Dan Aykroyd, but he'd worked with Ivan Reitman, Harold Ramis, and Bill Murray on 1981's *Stripes*. He also appeared in SCTV with Ramis, voiced a character in Reitman's *Heavy Metal* and made an appearance in the Aykroyd-written *The Blues Brothers*, so it was not surprising that he was lined up to appear in *Ghostbusters*.

What was perhaps more surprising was he didn't like the script treatment. "He didn't get it," Reitman told *Entertainment Weekly* in 2014. "He said, 'Well, maybe if I played him as a German guy who had a bunch of German shepherd dogs...' I said, 'Well, maybe you can do it with a German accent but I don't think that's really necessary.'"

When Candy passed on the role, it was offered to his SCTV colleague Rick Moranis, who took the character in a very different direction. Still, Candy wasn't entirely absent from the world of *Ghostbusters*. He made a cameo in the music video for the theme song – footage shot during downtime from filming the movie *Brewster's Millions*, according to associate producer Joe Medjuck.



“

[Ivan Reitman] was a music major when he was in University, and he knows something about music. He's a very talented man when it comes to the application of music in dramatic situations, and we work very closely together.

”



▲ **Composer Elmer Bernstein talks to CinemaScore in 1985 about his working relationship with Ivan Reitman.**

“

There was considerable debate at the outset as to how much, if any, stop motion should be used for the Terror Dogs – the usual worries about matching stop motion to full size puppets.

”



▲ **1984 interview with stop motion supremo Randy Cook in Fangoria magazine.**

“

When you live on an island where there is almost no media, tales of the supernatural seem to become part of a pastime and everyone has a story to top the last.

”



▲ **Harold Ramis tells Cinefex magazine about how a year spent on a Greek island awakened his interest in the supernatural.**



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YOUR PARTS



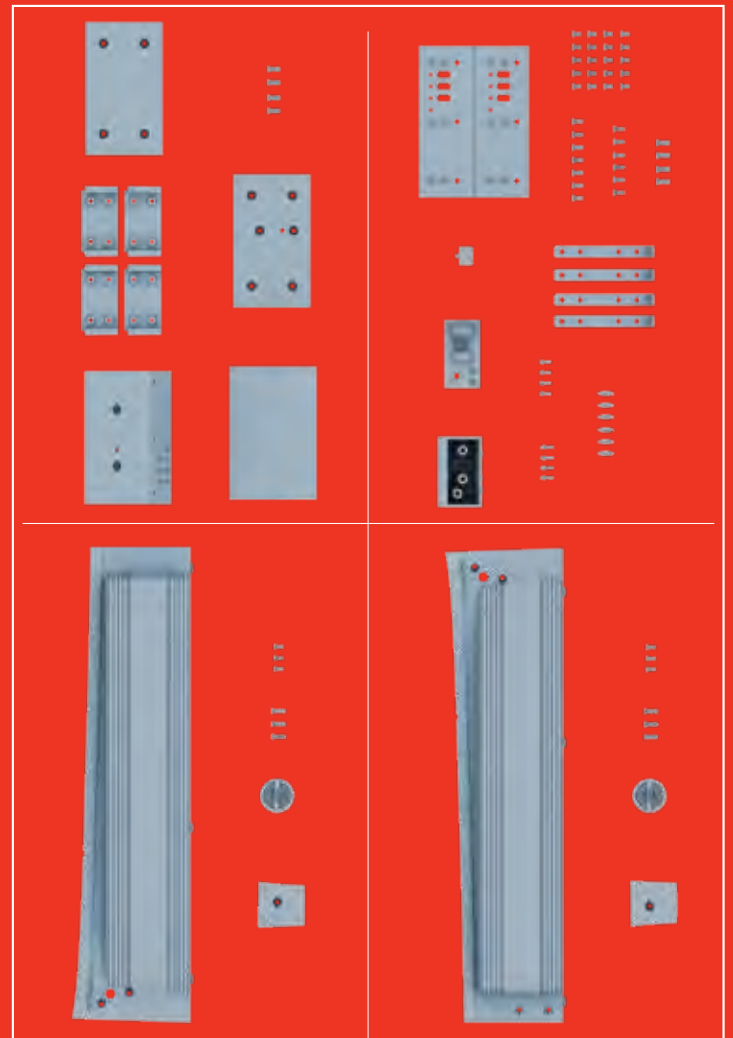
GHOST JOGGER

The health-conscious apparition.



COVER STARS

Michael McWillie on his magazine montage.



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