



Sound On Sound : Est. 1985

Secrets Of The Mix Engineers: Yvan Bing & Phil Collins | 'Going Back'

Inside Track

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 Print article : Close window

In this article:
[Going Back To Geneva](#)
[Old Sound, Modern Tools](#)
[The Detail's In The Demo](#)
[Save Our Spill](#)
[Matching The Crunch \('Love Is Like A\) Heatwave'](#)

Phil Collins began recreating the classic Motown sound as a form of therapy. With the help of engineer Yvan Bing, the results gave Collins his first number one album in 17 years.

Paul Tingem

Many teenage musicians will have dreamed of playing on their favourite records. Playing along in our bedrooms remains the furthest most of us will ever get, but at the ripe old age of 59, one ex-teenager has taken this age-old dream a step further. Phil Collins' eighth solo album, *Going Back*, features 29 classic Motown hits — and rather than provide fresh interpretations, the 100-million-selling artist tried to recreate these old recordings as faithfully as possible, with himself singing and drumming. Collins has described it as an "old record, not a new record".

Collins has always had a fascination with Motown, and back in 1982 his cover of the 1966 Supremes classic 'You Can't Hurry Love' became his first UK number one and first US top 10 hit. Six years later, Collins co-wrote two hit songs with Motown songwriting legend Lamont Dozier: 'Loco In Acapulco' was a hit for the Four Tops, while 'Two Hearts' was a US number one for Collins himself. *Going Back* continues along similar lines, and although the lead single '(Love Is Like A) Heatwave' — a cover of a 1963 hit written by Holland-Dozier-Holland and originally performed by Martha Reeves & the Vandellas — barely made a dent in the hit parades, the album was Collins' first UK number one since 1993.

Going Back To Geneva

The original versions of the songs on *Going Back* were recorded between 1963 and 1972, the last years when Motown was still located in Detroit, where the company operated its own studio until 1967, after which time it ran two studios. Attempting to recreate the Motown sound from this era could have involved painstaking historical research and attempts to track down original equipment, but in Collins' case, the focus was mainly on recruiting original Motown musicians, such as bassist Bob Babbitt and guitarists Ray Monette and Eddie Willis. All three were members of the Funk Brothers, the pool of musicians that played on Motown records between 1959 and 1972. As for approximating the sound of the old records, the album's liner notes credit Yvan Bing as having "engineered, crunched and lo-fied" the album, while Collins writes that "it would have been impossible for me to have made this album without my engineer Yvan Bing". Reason enough to talk to the man in question...

Like Collins, Yvan Bing lives in Switzerland, and was originally a drummer, before getting into engineering. Finding opportunities in his native country limited, he went on to study audio engineering at Berklee Music College in Boston in the early 2000s. Following this, he worked in New York for three years as an assistant and then full engineer at Right Track Studios, mainly recording hip-hop, and a few years ago he moved back to his native country, where he became main engineer at the then-new Dinemec Studios in Geneva. He still lives close to Geneva, where he's now a freelance engineer, running his own mixing room, Kitchen Studios, which sports an impressive amount of gear (see www.kitchenstudio.ch). Bing first met Collins in New York in 2006, when the two were working on Collins' musical based on Disney's *Tarzan* movie, which was premièred that year on Broadway. Then, in late 2008, Bing received a phone call...

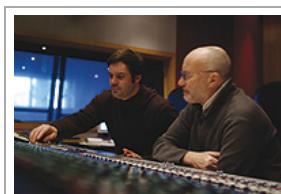
"Phil was planning to do a new record, and asked me to help him because he knew me from New York, and I only live an hour's drive away from him. He'd been doing these demos of all these old Motown songs at his own studio, entirely by himself, using Cubase. At that point he had to come out of his studio and actually make a record. It's tricky making a record like that, when you're starting with demos made with samples and so on, and then adding, or replacing, things with overdubs, because the original tracks were all recorded with the musicians playing live in one room. In the beginning I was a little concerned about this aspect. The other thing was that all the songs were recorded over a long period and the original recordings don't sound the same at all. I was wondering how we would be able to approximate the different sounds of all these songs. An important additional concern was whether Phil would be able to play the drums [after dislocating some vertebrae in 2007 and two operations to correct this, he has been left with limited control of his left hand]. Phil was very worried about that, so our first session was in January 2009, just overdubbing drums on his demos to see if he could do it."

Old Sound, Modern Tools

The above list of challenges, plus the fact that Collins wanted to record the album close to where he lived, led Bing very quickly away from any thoughts he may have had of staying faithful to the original recording techniques and equipment. The only way Bing would be able to handle everything was by using a DAW, and so all the post-demo sessions for *Going Back* were recorded in Pro Tools, with the sound being enhanced by some choice analogue kit.

"If someone would ask me out of the blue to do a record in Motown style, yes, I would think of analogue tape and recording a group of musicians live in a room. But because we wanted to match the originals, which all sounded a bit different, the more flexibility I had, the better, and I felt that digital would offer me the most flexibility. I listened a lot to the old Motown hits and did some research, and the way they were recording at the time was pretty rough. For example, all the guitars and basses were not only recorded with mics, but also plugged directly into the mic preamps. The Funk Brothers told me that the mic preamps had little speakers in them for the musicians to monitor themselves, and in order to hear themselves better they would turn their individual mic pre up, which of course affected the signal going to tape. The working methods in those days were a bit random, which resulted in interesting and unpredictable colours in the sound. There are a lot of things in those recordings where you wonder whether they were done purposely or because of the limitations of the time. The Motown studio was a small studio, not a big institution like Abbey Road. What they were doing was more like budget recording, and sometimes there are awkward things in the balance and the sound, and there's also quite a bit of distortion.

"Matching the old recordings was more important than matching the recording methods or gear. I also was starting with Phil's demos, and had the restriction of working almost exclusively at Dinemec, so I had to use what was there, and rent in equipment as and when we needed it. I was confident, though, that I could



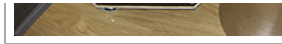
Yvan Bing (left) and Phil Collins during the mix of *Going Back* at Dinemec Studios, Geneva.



To augment the plug-ins, a lot of characterful analogue outboard was hired in.



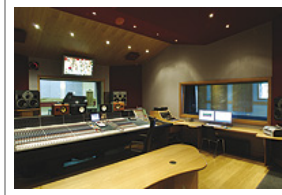
recreate the necessary colours with the gear that I had. It was important, for example, that Phil brought in his 1964 drum kit, but I didn't think it was necessary to use the original mics and mic pres to make it sound like back in those days, because I didn't have the same desk, the same room, the exact same instruments, and so on. Bob Babbitt told me that they used part of a B52 airplane as an echo chamber — how could I recreate that? There are so many aspects that go into creating a sound that it's better to simply rely on what you hear. So instead of worrying about the gear I used my ears and my knowledge of what certain mics and mic pres do, and then made sure the drums were tuned correctly and the mics were in the right places.



"Another major consideration was that I needed to be able to do detailed editing, the main reason being Phil's drum situation. He couldn't hold the drum stick with his left hand, so we had to tape it to his hand. There was a lot of frustration about this in the beginning, and I helped him with the Pro Tools technology. He knows all the drummers from the Motown era, and their individual styles and fills, and so on, and during the initial sessions he'd play individual fills that I then edited into the tracks. In the beginning of the recordings I then did a lot of slicing and editing and pasting and moving things. Luckily, he gradually gained in confidence and became better and better, and by the end of the sessions he would play the drum parts for some of the songs in one whole take."

The Detail's In The Demo

In recent interviews, Phil Collins has talked about the depression that followed his divorce from his third wife in 2007. His responsibility to his two young sons, who did some foot-stomping on the song 'Jimmy Mack' was apparently one thing that pulled him through. The other was the many months he spent in his home studio demoing the old Motown songs, playing keyboards, programming drums, brass and guitar parts, and singing. For Collins, this demo process was a matter of research and pre-production. An important aspect was choosing the right key for singing each song. In the end, the demos became the take-off point for the sessions at Dinemec, but ambiguity about their role caused a few grey hairs to appear on Bing's head.



"Phil had worked all the songs out by ear," he recalls, "and also knowing he has some hearing problems, I was amazed by the details in his arrangements. It's often hard to hear all the instruments on the original recordings, so sometimes he was guessing, and sometimes we discovered new elements while we were recording. The work he did in his own studio was great, and we then set about replacing things, with Phil bringing me all his Cubase files as audio file exports. After we had done our first drum recording session, we did a brass session, and it still wasn't quite clear yet exactly how much of the demos we were going to replace. We were still working with Phil's sampled guitars, for example, and I was very concerned at this point. It then became clear that the Funk Brothers would come for the sessions, and so I was really happy that we were going to use real guitar and bass, and even happier to hear that they would be played by the Funk Brothers.

"Phil had recorded his vocals with a Brauner VM1 mic, going into an Avalon preamp and then straight into Cubase, at 24-bit/48kHz. We kept that resolution for the whole recording. We also kept all Phil's home-studio vocals: they are what you hear in the final recordings. He occasionally needed to do fixes on his vocals, and we tried doing this at Dinemec, but to match the sound he ended up going back to his home studio to record these. We also kept some of his keyboards, horn samples, string pads and other pads. There were cases in which adding them underneath the overdubs made things sound better. As I explained above, our main criterion was our ears, not for the recording process to be authentic, and if a track sounded better with aspects of Phil's demos, we kept them."

Save Our Spill

Going Back was partly recorded at Dinemec Studio One, which sports a 48-channel Neve 88RS desk, a huge, wooden-floored live room and a large recording booth, and partly recorded at the Genesis studio, a studio in London and a couple of studios in New York. Bing explains that even though many elements of the original recordings, such as the drums, would have been recorded in mono with a single mic, he went for as much flexibility as possible by using several microphones, and then sorting things out later.

"I needed flexibility. I wanted to be able to go anywhere by the time it came to mixing the record. Also, the microphones I used were not as important as where I placed them and how many I had. I used relatively few, and for the most part placed them a little bit further away to pick up some of the ambience. One thing I was really concerned about was not having spill. When everyone plays in the same room, you get a lot of it, and this affects the spacing of the record a lot. Spill can be really useful. It was a big challenge for us to get the right groove and feel through overdubbing. This was another advantage of using Pro Tools: I always had the flexibility to change things and move things in time to help the groove of the song.

"For most of the recordings, I had a Beyerdynamic M88 on the kick, a Shure SM57 on the snare top and a Sennheiser MD441 on the bottom, another M88 on the low tom, a Neumann U47 for mono ambience and one Neumann U89 as a mono overhead. I used rackmounted Neve 1081R mic preamps for all recordings — they're based on the 1081, and I drove them pretty hard, with the meters always going into the red, to get some analogue distortion and saturation before going into the digital world. The distortion on the original recordings comes from many things — mic pres, compressor, tape — and to imitate that, I crunched our recordings in two stages: a little bit during the recording, and sometimes a lot during the mixing stage. I also used some compression on the drums, like with the Urei 1178, and a low-pass EQ on the snare, but otherwise I used very little EQ on the drums. I also went through the Neve 88RS desk during recording, and then straight into Pro Tools. I didn't do anything to the sound on the desk, I left the desk's EQ and compression alone.

"After the drums, we recorded the brass, with the players all in the same room. I used a [Neumann] U67 on the baritone sax, another U67 on the tenor, a Royer 121 on each of the two trumpets, and a [Neumann] FET 47 on the trombones. These are all close mics, and then I had two U47s plus two Coles 4038 for room mics. Again, all mics went through the Neve 1081R mic pres, and I compressed the room mics a bit with the 1178. We then recorded the female backing vocals, using U67 mics, and Phil sometimes sang with them. I used the 1081R and a Urei 1178 on the girls' mics as well. I also recorded acoustic and electric piano, the latter DI, while I had two U67 mics on the strings of the acoustic piano and a pair of B&K 4011s as an X-Y pair on top of the lid for an ambient sound.

"We recorded the Funk Brothers next, and I also had them in the same room at the same time, with baffles between them. Again, leakage was good! I had a [Beyer] M160 ribbon mic and an SM57 on Ray Monette's amp, plus a U67 a bit further away, for ambience. There was another 57 on Eddie Willis's amp, and again a U67 a bit further away, and on Bob Babbitt's bass amp I had a FET 47 and an M88. I also wanted that DI sound that's so many of the original recordings, so all guitars and the bass were also recorded via Radial DI boxes, plugged directly into the Neve 1081R or the console. In general, I used the DI signal a lot during the mixes. Finally, we had 14 string players — five first violins, five second violins, two violas and two cellos — and I recorded them in one room with a Decca Tree setup, using a U67 set to bi[directional] on left and right and a U67 set to omni for the centre mic. Spot mics were a [Neumann] KM84 each on the first violins, the second violins, and the violas, and a FET 47 on the celli. Once again, all mics went through the Neve 1081R rack."

Matching The Crunch

"The Going Back project was unique, of course, because my main job was to match the balance and the crunch of the original songs with what we had recorded. I had done rough mixes of all the songs while we were recording, using the Cranesong Phoenix and Digidesign Lo-Fi plug-ins to crunch things up. Sometimes the rough mixes ended up sounding quite good, but for the mixing stage I decided to rent some tube gear in, such as the Thermionic Culture Vulture [distortion generator], Pultec EQP1A and MEQ5 [equalisers], Fairchild 670 [limiter], and also the Chandler TG1 [compressor] and Curve Bender [EQ] and the Cranesong Hedd 192 [converter]. I A/B'd between the outboard and the plug-ins and ended up using both. I also tried Digidesign's Reel Tape Saturation plug-in, but wasn't quite convinced by it, and instead used the Phoenix quite a lot, which has a similar analogue tape setting to the Hedd.

'(Love Is Like A) Heatwave'

Written by Edward Holland, Jr, Lamont Dozier, Brian Holland

Written by Edward Holland Jr., Larrion Dozier, Brian Holland

Produced by Phil Collins

"I needed to be able to add as many colours as possible to the songs, and with the combination of the plug-in and outboard, I felt that I would definitely have what I needed. Also, many of the original tracks were lacking in low and high end. To emulate the original EQ and distortion, I applied distortion and EQ to both individual tracks and the stereo mix.

"When I mix songs with a groove, I normally start my mix by working on the drums and bass, and I then add things around that, and similarly, on 'Heatwave' and all the songs with a strong rhythm section, I'd try to get the crunch and EQ on the rhythm section first, starting with drums, and then bass, and then guitars."

Drums: Digidesign ReVibe & Lo-Fi, Waves VEQ3, VEQ4, Renaissance EQ & CLA2A, desk EQ, Thermionic Culture Vulture, Pultec EQP1A & MEQ5, Fairchild 670.

"There are five drum tracks [in the Pro Tools Session]; the 'TO13' track is the floor tom mic. Just below these five tracks is a 'DrmV' track, which is a mono effect track with the ReVibe plug-in, which I used a lot on the drums, mostly on 140 plate or spring-reverb emulation settings. It has excellent presets. With regards to the plug-ins on the drum tracks, 'L' is Lo-Fi, which is on the kick, snare top, overheads and ReVibe track. The floor tom has the 'Lo-Fi' and the Waves Neve EQ4. The snare has the Waves 1073 EQ, the Lo-Fi and the EQ4, and the overheads have the Lo-Fi going into the Renaissance EQ, into the EQ4, and the CLA2A compressor. The ReVibe effects channel has the Lo-Fi and the 1073.

"The five drums and drum effects track came up on individual channels on the board, on which I EQ'ed them and then sent them to the Culture Vulture, and then I EQ'ed them again. It's working method I often use, also with compression. I boost frequencies to overload and affect the distortion and then reshape the signal again afterwards. I then bussed the drum channels to a mono drum channel, because the drums on the original were in mono. My signal chain on the mono channel was Pultec EQP1A to Fairchild 670 to Pultec MEQ5. Again, the same principle: EQ before the compressor, boosting low or high end to get the compressor to work in a certain way, and then EQ afterwards to reshape."

Bass: desk EQ, Chandler TG1, Pultec EQP1A.

"I had three bass tracks, for the M88, U47 and DI signals. I didn't use any plug-ins, and all three tracks came up individually on the board. I didn't submix in Pro Tools. I liked the flexibility of being able to mix and match different channels on the desk, mainly, to be honest with you, because my monitoring position in front of the desk was better than in front of the Pro Tools rig. It wasn't because I wanted analogue summing or something like that. As with the drums, I mixed the three bass channels to one mono fader, and the chain on that mono channel was the TG1 compressor going into the Pultec EQP1A."

Guitars: Waves EQ3, CLA76 & Renaissance EQ, Digidesign Lo-Fi & ReVibe, Empirical Labs Distressor.

"As you can see, there are many guitar tracks — eleven of them. There are three tracks of 'GTR1' and three of 'GTR2', both reflecting the three mics I used during recording, and I mixed each of these three tracks to a single mono track. Tracks '1120' and '1671' are guitar fills, and 'GTR' is the talkback mic, which functions as a room mic; I recorded that as a stereo track. The track called 'G201' is another guitar overdub. The plug-ins on 'GTR1' are the Waves EQ3, the Digidesign Lo-Fi, and a Waves CLA76. The mono submix tracks for 'GTR1' and 2 each have the ReVibe on them. I spent a lot of time working on the reverbs on the two main guitars using some of the spring-reverb presets on the ReVibe. On the 'GTR1' ReVibe track, I rolled off the low end with the Renaissance EQ. The 'G201' track has the Lo-Fi and two EQ plug-ins. I then inserted a Distressor on each mono guitar submix on the desk."

Vocals: Digidesign Lo-Fi, Waves VEQ4, CLA2A & Q4, EMT 140 plate.

"After having done the rhythm section I worked on the vocals. I had two main vocal tracks, 'Lea1' and 'Lea2'; Phil had given me two vocal tracks from his Cubase session, and I didn't bother putting them together. I submixed them to two effect tracks: 'LD', which has the Lo-Fi on it, and 'LDX', on which I did some kind of parallel compression. It's something that I read about being done in the Motown era: they'd crush the vocals and then boost the high end. But I found that it worked better to put the EQ in front of the compressor. So the signal first goes through the Waves Q4 EQ, notching out 2951Hz, then the Waves VEQ4, rolling off low end and boosting high frequencies, then it goes into the Waves CLA2A, which reacts pretty amazingly when you overload it. Basically, I use this chain as an exciter, and I bring that in under the main vocal track. There are also eight backing vocal tracks, which are submixed to 'Gr1B1' and 'Gr1B2', and which get a similar parallel exciter-like treatment. On the board I added some EMT 140 plate reverb and the Dinemec main room as echo chamber. Both reverbs were usually in mono.

Brass & keys: Digidesign Lo-Fi, desk EQ, Thermionic Culture Vulture.

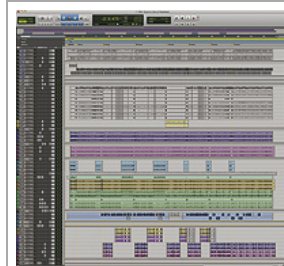
"There are eight brass tracks, and they're all submixed to a stereo track called 'HrnB', over which I put the Lo-Fi. I wanted the brass in stereo on the desk, because I wanted to be able to pan them left or right, or in the middle, or keep them a bit stereo. I EQ'ed the brass with the Neve 88RS desk, and then put it through a Culture Vulture, for distortion. At the top of the session are a few tracks that remained from Phil's demo. 'Pad' is a keyboard pad, 'V101' a violin pad, 'Pian' is piano, 'PC03' is a demo guitar and 'Pinml' a sampled intro guitar that we also kept; we added all those things underneath. 'ClpM' are claps. These elements from Phil's demo provided some glue in the sound."

Mix bus: Chandler TG1 & Curve Bender, Cranesong Hedd.

"In the beginning of the mix, we still referred a lot to the original recording, but towards the end we left that alone. At some point we had to simply listen to what we had, and make that work. In the end, we had to make the track sound good on its own terms. I mixed to another Pro Tools rig that was set to 24/96, going via the TG1 in THD mode to the Cranesong Hedd converter. I know that the assumption is that it's pointless going up in sample rate, but I A/B'd the 48k and 96k and preferred the latter. I wondered why, and my guess is that it is because of all the harmonics that we added with the distortion and so on, and the higher resolution handled this better. I also had the Chandler Curve Bender TG12345 over the stereo mix.

"I went to the mastering in New York, which was done by Kevin Reeves at Universal Mastering East. He had done all the remastering for the Motown back catalogue, and I therefore was really interested in working with him. I had been so amazed by the work he did on remastered editing of the Supremes' Gold that I contacted him right away after reading his name on the credits. I'd sent him some test tracks at some point during the mixing and it came back sounding really great! When we went to New York for the mastering sessions, he told me he had tried to run the mixes through an analogue tape machine but that finally he thought it wouldn't bring anything to it. In fact, he did very little to our tracks. He did some EQ to make the tracks mesh together, but it seemed like we were quite successful in our aim of recreating these old recordings! At Universal, they had prepared some of the original analogue tapes for us to look at, and we could listen to the digital multitrack transfers of the tape of some of the originals that Phil covered. It was a historical moment for us!

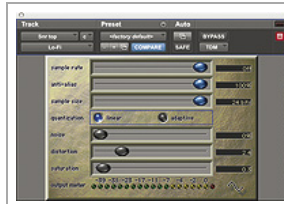
"For me it was a unique and interesting project, which was very different from my normal way of working. When I was working with hip-hop music during my time in New York, we also did a lot of shaping and lo-fying of the sound, but not to this extent. I discovered some new techniques in recording and mixing Going Back that I'll use forever, like the shaping of distortion with EQ and compression and the exciter effects. I now have some



A composite screenshot showing the entire Pro Tools Session for 'Heatwave'.



Most of the vintage quality was applied at the mix, much of it using plug-ins. Here, for instance, the snare top track is treated with Waves' VEQ3, Avid's Lo-Fi and Waves' Renaissance EQ.



The overheads had a similar 'lo-fying' plug-in chain, with Avid's Lo-Fi followed by Waves' Renaissance EQ, Neve VEQ4 and CLA2A compressor.



new colours that I can pull out of my hat in future, whenever they will be useful!" **SOS**

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Many of the reverbs used on the mix were plate or (as here on guitar) spring patches, EQ'ed to roll off some bass.



The "parallel exciter" chain used to add top end to Phil Collins' lead vocal: two EQs, followed by Waves' LA2A compressor emulation.



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