Glasnost
Surprises

In November 1989, while visiting Moscow on a film distribution deal, Ian Woolston-Smith arranged to meet cameramen whenever he could. Armed with a translator, a Sony GV-9 TV/VCR, and a book of Steadicam production stills, Ian discussed the virtues of Steadicam with everyone he met in the film industry.

"Equipment such as this is only a dream in the Soviet Union," said a cameraman who shot major Soviet music videos.

At Mosfilm, a government studio in Moscow, I received a camera demonstration by the man in charge of camera equipment. When I pulled out a still of a IIC in low mode, his eyes lit up. "Ahhh! Steadicam!" Yuri, my tour guide, expressed to him my interest and then told me, "He says that we have this, a Steadicam, and will arrange a meeting between you and the man who does this."

Alas, it wasn't until my last day in Russia that the meeting could be planned, and then it almost didn't happen. Snow, no taxis, and no translators all conspired to cancel the meeting. Somehow, at the last moment, I found a taxi and skidded and slipped across town to Mosfilm. There I waited and waited in a dim room where all visitors must await acceptance into the studio. I used a 1940s style pay phone to contact a translator I had used earlier. My guide, Yuri, was able to come and help me with all the paperwork to get me inside. One of the ladies in charge

EuroMasters Reports I and II

1989 European Masters conducted at Castle Brolio

Nicola Pecorini writes from Italy; European Steadicam Operators Association proposed

Siena, 12/31/89
Strange but true, we made it!
We have been able to put together for one week, a whole week, 25 of the busiest men on earth. European and American operators were cloistered inside a medieval castle in the heart of Chianti, drinking wine and dissecting every possible aspect of their profession.

Ten countries were represented: Italy, Belgium, France, Sweden, Holland, Spain, Switzerland, West Germany, Austria, and the USA. All sorts of "levels" and experience were represented, even in the equipment. All sorts of nuts, bolts, home-made mods, video crap, and mechanical pornography got integrated with the XVI century furniture and paintings of Brolio castle. Even the Brolio version of the "Slavecam" had a medieval touch!

Masters continued on page 3
Nicola continued on page 7

Glasnost continued on page 4
Introducing SteadiMag.

The compromises are over. Cinema Products introduces the new SteadiMag™ for Arri 3 & 2C cameras. The 400' capacity SteadiMag is ideal for Steadicam® use.

For over ten years, Cinema Products offered an Arri Mag modification which extended the magazine’s throat, providing vertical displacement of the film and allowing enough clearance for Steadicam work.

SteadiMag goes far beyond this. In addition to the extended throat, sleekly-styled SteadiMag is nearly 2 lbs. lighter than modified Arri mags!

Steadicam operators will appreciate the new positive latch single door configuration.

Both threading & throat cavities are conveniently accessible — even in the loading bag. So threading is quicker & easier.

Steadimag is also great for hand-held work. The profile of an Arri 3 equipped with SteadiMag offers optimum on-the-shoulder balance.

For information about SteadiMag & Steadicam gear, give us a call. Ask for Chuck Jackson or Manfred Klemme.
I f.)

Bertolucci and the delicate territory must be negotiated when working between humility and arrogance that the lesson learned with Storaro and issue.

European branch of the Steadicam insert for the Letter. We will report on the progress of this idea in the next issue.

We worked on techniques and equipment and just generally "shot the fat" as the Europeans now have learned to say. A number of seminars and lectures were presented, including the following:

Tass Michos discussed the rewards and pitfalls of the combined A-operator/Steadicam-operator job. He also ran an impromptu arm-repairs-in-the-field discussion illustrated with a bravura "battlefield cable replacement" demo on Nicola Pecorini’s broken arm. It's done by immobilizing the springs with a mummy wrap of gaffers tape and then letting off the tension to slack the cables.

Nicola chaired a meeting which produced a resolution to organize a European branch of the Steadicam Operators Association. Henry Chroszicki has volunteered space and secretarial help in Milan, and the prospects for a pan-European phone number and database service-by-fax are being investigated. I indicated that some financial arrangement could be made to split the membership revenues, in order to help with the local expenses and produce a Euro-insert for the Letter. We will report on the progress of this idea in the next issue.

Nicola also is the living master of "politics" on the set, and he described the lessons learned with Storaro and Bertolucci and the delicate territory between humility and arrogance that must be negotiated when working for

the Greats of the movie world.

Aldo Pavoni, who proves that you don't have to be a nerd to be an electronics whiz, chaired a seminar on the innards of Steadicam, and incidentally made dozens of mods and repairs during his two-day visit.

I organized a session to communicate the wishes of the European community to Cinema Products regarding spare parts, local representation, etc. I also presented an amateurish version of Allen Krantz' famous "Music and the Art of Steadicam" seminar which, surprisingly, provoked near-violence between those who agreed with our premise and those who thought it was complete rubbish! I also organized several seminars on trim, tricks and backups and gadgets.

Masters continued from page 1

entrance, guarded by a remote-controlled portcullis, and no one gets in or out without scrutiny from the top of the 40 foot high, 20 foot thick walls.

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Aldo Pavoni unwinds the spaghetti

Masters continued on page 10
Glasnost continued from page 1

shuffled through a tall stack of papers and shook her head at Yuri. But he pulled some strings and twenty minutes later led me to the entrance gate.

"Walk swiftly and don't speak English. I take you in as Soviet citizen," Yuri warned me.

My translator was on the way, but the meeting started immediately. I first met with two men, Viktor Yerofiev and Vladimir Samunov, who were in charge of Steadicam electronics and mechanics, respectively. They took me into a small room and showed me a CP-35 and asked if I would like to try it on. Why not?

The two of them suited me up like a precision team; I had to hold my arms away from my body as if I were being fit for cosmonaut duty. They even kept the arm from hitting my face.

At this point my translator arrived. I asked her if they knew I had my own Steadicam. "Yes, they know this, Ian." I tried to get them to adjust the bottom heaviness of the rig (it was extremely bottom heavy and, without a lens or mattebox, the arm barely deflected). I pointed to the hex screw on the gimbal. They shook their heads. It was not adjustable. I gamely took a short walk down the hall and back, then allowed them to undress me.

I then showed them the National Geographic Special on my Sony. Everytime a rig was shown they wanted to know if it was the most advanced model. When they saw Garrett Brown they said, "We know of this man." Perhaps from the CP-35 instruction book.

The group now grew to six as the research and development team arrived. I was constantly juggling my Sony, five issues of the Steadicam Letter, a photo album, and my 35mm camera. I drew special attention to the Bulgarian-Cam pictured in the Contraption Wars issue of the newsletter. Someone in the hallway said, "Here he is!" Vyacheslav had arrived with his buddies. I showed him his photograph and everyone was chuckling but him. "Bulgary?" he kept mumbling. I believe he thought I was a spy and that the heat was on.

I asked the research and development team if I could see what they were working on. They brought out shots of the "Vertical I" and "Vertical II." They gave me permission to photograph the plans but when I got my camera, one of the men was running away down the hall with the plans. "Ian, they have second thoughts," my translator told me.

"I promise there will be no law suits!" I quickly replied. The man returned with the plans, and I started taking pictures.

I then had the honor of meeting...

Parallax compensated viewfinder system

Valery Davilov, head of the camera department, checks out a back issue of the Letter.

Igor Chermych reveals the secrets of the new arm.
Igor Chernych, a director of photography who had become a Steadicam operator and designer. Now he directs and produces major war epochs.

We went into his office where he looked at the production stills and all the other stuff I had. He wanted to know about low mode, adjustable spring arms, and how much my rig weighed. Communication was difficult. To tell him the heaviest camera I work with is a BL III took two minutes. They could not understand “Arri BL III” even though they have thirty of them.

He told me of his system which took 35mm and 70mm cameras and weighed only 50 pounds. He said at the bottom of the sled he had...

Another cameraman then spun his finger in circles.

"Gyro?" I asked.

They all shrugged their shoulders.

A few minutes later, ten of us marched down a long dark hall in the basement of Mosfilm’s camera building to see Igor’s rig. The others seemed as excited as I was. Out of a locked closet came a sled, an arm-type suspension, and a magnesium 35mm camera with parallax ground glass side finders. He showed me an extremely

Glasnost continued on page 10
Offset Whip Pans

I know this sounds like some new variety of dessert cookware: "So even the cream at the side gets whipped!"

But no! It's a new operating trick - a technique that takes advantage of our increasing understanding of the dynamics of Steadicam to allow finer control over rapid pans, particularly in cases where you must simultaneously tilt up or down.

Obviously, it is seldom the case that the desired angle of tilt is identical for the beginning and ending frames of a rapid panning move. Getting a whip pan to include a tilt can be mystifyingly difficult to accomplish, and the result is that many operators lack the confidence push for this kind of shot. I believe now that we can provide you with a reasonably foolproof way to adjust your rig on the spot to make it happen semi-automatically, or at least to help you avoid fighting a rig's accidental tendency to "precess" in the opposite direction.

As you know, we have been refining "whip pan" skills for some years. With a Steadicam in proper dynamic trim - with its masses positioned so that it doesn't tend to precess when being rapidly rotated - these moves can be amazingly precise. When the dynamic trim is faulty (see the "Trim" articles in the Letter, Volume I, numbers 1 & 2), the rig tries to tilt down (or up) as you pan.

See where we're headed? If you deliberately mis-adjust the fore-and-aft trim of the sled, and compensate with the camera for correct static trim, the resulting precession can be used to accomplish a tilt up or down at will - with no adverse effects on the rest of your shot, unless it includes a second whip pan with the opposite tilt!

Here are two equally effective methods (starting with a rig assumed to be in dynamic trim):

**To make a whip pan tilt down:**
1. Shift the sled to the rear (and the camera forward to static balance). Use the sliding adjustment provided by Seitz or with CP's adjustable post - or swing the battery rearward
   and/or
2. Raise the monitor.

**To make a whip pan tilt up:**
1. Shift the sled forward (and slide the camera back to static balance).
   and/or
2. Lower the monitor.

Note that in both cases you will have to experiment with the magnitude of the shifts to accomplish a given magnitude of tilt. This technique just provides a tendency in the right direction.

By the way, this information can also be used to empirically find "neutral dynamic trim": If a whip pan produces a tilt down, shift the sled forward (or lower the monitor) and try again - and vice versa. Please let us hear from you if you have information regarding this matter. And never confuse whipping pans with beating or whisking!

Barry Markowitz after years of whip pans.

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**MOD IV FINAL WISH LIST**

This list is compiled from the Association survey and European Masters Workshop.

1. Lighter
2. Removable/replaceable monitor
3. Improved extendable post clamped more positively
4. All clamps truly hand-tightenable
5. Bigger screen
6. Monitor bracket tilts up, extends, pivots at monitor cg
7. 24/12v dual voltage capability
8. Bigger, stronger dovetail lock
9. Include extra 12v power outlets
10. Movable elect. bubble (i.e., to top of screen)
   a. Vernier adjustable
   b. Include conventional bubble, adjustable, adjacent to screen
11. Color monitor optional
12. Frame line dimmable
13. Bubble dimmable! (Target dimmable and removable)
14. Filter for camera power, to avoid video noise
15. Front panel access to all monitor adjustments
16. Lighter arm
17. Greater arm range top to bottom
18. Make thicker dovetail so top surface is proud to avoid rubbing
19. Put receiver and amps, etc. on removable cards
20. Provide ability to raise and lower arm mounting point relative to suit, (even when suit is at shortest) so operator's entire arm range can be employed - presently arm is not "centered" with operator's arm
21. Make sled "sports" protected (from rain and moisture)
22. Provide more common fuses, more accessible
23. Provide motor amps built in to junction box
24. Junction box wiring inside post
25. Provide good lightweight fast chargers
26. Provide better docking stand
27. Provide built-in 8mm Sony (OEM) VCR chassis
28. Provide isolated video inputs/outputs (one including frame-lines)
Nicola continued from page 1

At the very beginning there was electricity in the air. Everybody parked their cases in the deepest corner possible, locked. And the same with their knowledge. There was some distrust: the old fear of being robbed of your capabilities, professionalism, tricks, and thoughts. Only those who had taught a workshop could easily overcome it.

But at the end of day two these prejudices faded and the experience became productive and useful. For this I have to thank Garrett: from the height of his charisma he guided us through the path of all our arguments. Not only did he invent a great machine that earns us a living but he teaches us how to live (because he knows how).

We investigated a lot of aspects of our specialty: the role of the set, the market, the money, the assistants, the relations with CP, breakdowns, wish lists, projects, suppliers, spare parts, clients, rental houses, DP's, directors, shots, tricks, music, and I don't remember how many more things. Thanks to G.B., we even approached the delicate field of "performance," or in other words, the feelings, the Zen!

And, most important, we got to know each other. We arrived as colleagues and we left as friends. Despite our differences, there was a common attitude toward life. Maybe it's the same reason we enjoy the Steadicam so much. Through it, with it, we can express ourselves in a certain way. There was so much energy — it's probably what would happen if you put 20 violin virtuosi or 20 sculptors in the same setting.

Also important was the organization of all the logistics. Thanks to Francesca and her staff we were able to concentrate on the work and still enjoy every single aspect of Chianti life, including the wonderful weather.

It's very hard for me to sum up what those days were like, what we came up with. I hope and suggest that all the people who attended write their own impressions to the Letter. What follows is a list of the practical problems we focused on and the solutions suggested.

Needs:

- A serious service for Steadicam
- A Steadicam system as a backup for the SOA.
- It's the same reason we enjoy the Steadicam so much. Through it, with it, we can express ourselves in a certain way. There was so much energy — it's probably what would happen if you put 20 violin virtuosi or 20 sculptors in the same setting.
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The ESOC should be a branch of the SOA. The above represents the specific European peculiarities we think a European based and structured association can address. We are still discussing the form, the rates, everything. But we did make a few decisions:

- Work to build the ESOC.
- Start with a physical reference, accepting the offer from Technovision to use their facilities in Milano.
- Incorporate Aldo Pavoni (a great electronic engineer and a better man) who already works within Technovision's offices. He will supply us with his skill, and he has a lot of spares on stock. He will also handle the mail and faxes at the beginning.
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Steadicam Universal Model, c. 1976

**View from the Bridge**

Entering the 1990s, we thought it was a good time to summarize where we've been and how the use of the Steadicam has evolved. In the year 2000, we'll run another column and see how the conventional wisdom has changed.

The Steadicam was conceived as a stunt camera, designed for running shots over rough ground, but by the time of its feature debut in 1975, we began to realize that we had been underestimating its potential. My first feature shot was a long, slow, quiet track with David Carradine on Bound for Glory, and the history of the device ever since reflects a steady progression toward precision and away from all those pelmell stunt running shots up stairs!

The emphasis for the last few years has been on Steadicam's development as a reliable shotmaking tool which can operate not only with the apparent accuracy and smoothness of the dolly, but also with the ability to make subtle moves that curve in three dimensions beyond the scope of jib arm and rails. Yes, friends, all of the above plus the gut sensitivity and "feel" of the handheld camera! (And without that annoying "chatter" and vibration caused frequently by the less-than-rigid connection of camera, head, risers, dolly, etc.) Both operating technique and equipment have had to come a long way for today's "Living Masters" to routinely deliver this level of work.

It must be said immediately, of course, that a simple dolly shot can be made by a relatively inexperienced crew and can turn out quite acceptably, whereas even a simple Steadicam shot can be a disaster if the operator isn't familiar with the equipment. Sadly, great Steadicam shots, which are increasingly prevalent in today's films, tend to disappear into the fabric of the picture, while bad or even okay Steadicam shots stick out and ring the old gong. It's a tool that definitely requires skill and practice, and the need to be a good camera operator to start with.

What are some opportunities for Steadicam in the 1990s? Keep in mind it moves smoothly, it can be accelerated rapidly, it is "hand-held" so it can safely come close to things, it is highly inert in pan and especially tilt, it eliminates vibrations, and it can be worn or hard-mounted.

**Steadicam is good for:**

- moving camera shots in tight quarters, particularly for complex stuff such as: guy passes camera in a hallway, Steadicam backs up, booms up rapidly, arcs into unseen doorway, pans, arcs back out into hall, booms down, tracks along, and stops, yet it just feels like we "watched" a guy pass by.
- shots over rough ground, particularly where one needs to look straight ahead or behind.
- where one needs to continue on beyond the practical distance that can be accommodated with track.
- where one wishes a shot to cross a threshold, or continue up some steps, where a cut would otherwise be necessary.
- where any other technique for moving the camera would be impractical for external reasons, such as the load-bearing abilities of the floor or the rigidity of a dock or bridge.
- for any moving camera shot where the quality of the move contributes to the emotional qualities of the scene, such as the "hardness" of accelerations/decelerations, and pans, and the momentary control over the balanced/unbalanced nature of the composition as actors enter or are let out of the frame.
- where one needs to isolate the camera from the movement of a vehicle (virtually any vehicle) for any reason, for instance, where we wish to perceive the onscreen vehicle's motion within our frame where we wish to negate the movement of our offscreen vehicle so it doesn't affect our shot of some other subject.
- where we wish to simulate vehicle motion within a set that doesn't move (such as the work in the airplane set in Twilight Zone).
- where we wish to provide the effect of a zoom lens of much greater range than any available by moving toward or away from a subject (perhaps while zooming slightly).
- for human or animal (or alien) points of view, that move through the world realistically, but don't shake unrealistically.
- quick static shots with simple set ups, where time is a factor - such as during a sunset or in the middle of a series of Steadicam shots - when changing cameras and bringing in a dolly would be an unnecessary waste of effort.
- where unpredictable events preclude marks - like shooting dogs and kids and non-actors and rainbows.

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Call for serial numbers

Please be sure to fill in the serial number(s) of your sled(s) if you are an owner, owner/operator, rental house, or large global super power.

A commonly heard complaint from owners refers to the historical lack of communication and follow-up from Cinema Products Corporation, particularly as regards to engineering callbacks and upgrades. This is due in some measure to the nature of CP's sales organization and to the fact that final purchasers of Steadicams are often not on record with the factory if warranty cards are not submitted. They remain on file at CP only as a sale by the dealer.

In an attempt to finally develop an up-to-date owners list, CP has accepted the Association's offer to poll our members and include serial numbers in the database. We believe that this is a worthwhile endeavor. Please be sure to make the entry on your database form and mail it back promptly.

Ultimately we will be able to track the history of user machines, and make them harder to fence if stolen. In the past, several rigs have shown up mysteriously (e.g., as unclaimed freight!), but with no global record, they couldn't be traced back to any owners.

A case in point and a warning to Model IIIA owners

At the Masters, it was discovered that many of the new Model IIIA centerposts had a serious defect. The three plugs at the ends of the two posts are only glued in place.

They are not pinned and can separate with heavy loads or jolts.

Even one of the old posts with a welded plug gave way in low mode with a 35BL. Michael Fylyshtan warned us about this hazard in Volume 1, Number 4 of the Letter, but it needs to be said again.

Model IIIA posts now coming out of the factory are being pinned for safety, but you should check yours. You can pin it yourself or send it back to the factory (call Chuck Jackson at CP, (213) 836-7991).

With the addition to the database, they'll be able to contact us in case of a recall, a flashy new mod, or some other need.

McConkey gets notice

In an article on the filming of "War of the Roses" (page 52, January 1990 issue of the American Cinematographer), we found the following:

"Steadicam operator Larry McConkey came in for high praise from (DP) Burum. "Larry was truly amazing. We did things that were wonderful that we couldn't have done if we'd laid 300 feet of crane track and had it buried and had the arm offset. Unless you really know Steadicam and know motion picture techniques, you'd never guess there was so much of it, and we had him for almost the whole picture. His work is so brilliant you don't even notice it, you just take it for granted."

Way to go, Larry.

Workshop in Yellow Springs

The next Steadicam workshop will be held in Yellow Springs, PA, (outside of Philadelphia) May 13-18, 1990.

Cost of the workshop is $1350, which includes room and board, double occupancy. Space is limited to 16. This will be a good workshop for beginners and those who want to brush up on their skills and knowledge.

Members of the Association get a $75 discount on the workshop.
Igor Chernykh assembles his mysterious equipment.

**Glashnost continued from page 5**

He stood there thinking for a moment. Then the head of the camera department, Valery Davilov, broke out in English, "Yes, yes, yes, yes!!" I shook hands with everyone and then it was goodbye.

At the gate I was again warned not to speak English and to walk like a Soviet. The guard stopped us immediately. Perhaps it was my running shoes and the ski jacket, or the fact that I was dressed in colors. We were led down to the deepest depths (honest!) of Mosfilm, where all my possessions were searched, including my notes, camera, and all my rolls of film except one. The roll of the Steadicams was stuck in my underwear for safekeeping. After thirty minutes of interrogation and paperwork, we were allowed to leave with all our gear.

The meeting at Mosfilm lasted only ninety minutes. Looking back, it's clear that the evolution of Steadicam in the Soviet Union has been hampered by the lack of so many technologies we take for granted. I never did see if there was a gyro on Igor's rig.

One encouraging aspect of glasnost is that if these cameramen receive a formal invitation from, for example, someone in the United States, they can travel to the US. Is anyone up for a Moscow Masters Workshop?

Ian Woolston-Smith

The focus control system is explained.
Back Issues Available

Many of you have asked about receiving copies of back issues of the Steadicam Letter. To cover the costs of handling and mailing, back issues are available at $5 each. Alas, we don’t have any more originals of Volume 1, Number 1. If there’s enough demand, we might xerox the plates of Volume 1, Number 1 and sell them for the same price as the other issues. We do have about 100 or so each of the other issues. If you want any issue(s), please write to us, identify the issue by volume and number, and include a check for the amount of your order.

Below is an index of the major articles:

**Volume 1, #1**: "Steadicam Operators Association" is it!, Masters Agenda, School Figures, Gothic Market in Milwaukee, Trim (Part I), Ad Dendum (the beginning of the debate), News Flash From The Masters, Model II Vest Makeover, Association Workshops, Referral Policy, Regional News from Canada.

**Volume 1, #2**: Report from the Masters, Steadicam, Letters (end of the debate), Camera Music, Trim II: The Sequel (all those numbers!), Better Yoke for Model II, Care and Feeding of Operators, Fastchargers, Siena Workshop.

**Volume 1, #3**: McConkey on Thailand, Ancient History (History of the Noble Gadget, Part I), The Bluedots Meet the Animals, Model III Monitor Mod, Muro Flies in Jamaican Jungle, Quirk in GUTT, Ad Dendum, Buddycam Version 2.0, Ultimate Steadicam Survey.

**Volume 1, #4**: Survey Results, The Iron Age (History Part II), Centrepost Rehab, Setitz OK After Fire, New Zoom Video Tap and Centerpost, Teflon Grease Rescue, Steadicam Tales from Milano, Motor Mounting Madness, How the Database Works.

**Volume 2, #1**: Master’s Workshop Proposed for Europe, The Contraption Wars (History Part III), Letter to Panavision, Public Speaking Increases Your Visibility and Promotes Jobs, Custom ATV Available from Association, New Associate Member to Provide Technical Support.


**Association Notes**

"News Quarter Paid" Explained

Working with computers is great fun, but sometimes it’s hard to explain how the system works. We’ve described how the database works for producers, but we’ve been a little vague about billing and membership.

Basically, membership has yearly dues, and members are grouped and re-billed by the "news quarter." The "news quarter" corresponds to the quarterly issues of the newsletter. For example, Operator A joined about a year ago (before or close to the time the 3rd issue of the newsletter was issued). He is classified as a "news quarter paid 3 (NQP #3)." He is on the database and receives newsletters Volume 1, #3 through Volume 2, #2 (4 issues or quarters). Because we’re nice, we’re sending him the current issue, Volume 2, #3, his fifth newsletter, with a request to sign up again. When he does, he will be classified as "news quarter paid 7" and will receive issues through Volume 3, #2 as well as remain on the database for another year.

If someone was late in their renewal, but we haven’t taken his/her name off the database, then the payment applies retroactively.

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**Steadicam Letter**

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Example: Operator B was a "NQP #1." She should have renewed her membership in June 1989 (with Volume 2, #1, the fifth newsletter). We kept her on the database and sent her newsletters until she paid in October. She’s now a "NQP #5" and will get her next request for renewal and payment in June 1990.

You can figure out when you’re going to be billed again by looking at the "personalized" insert that we send with your newsletter.

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**Patches sold out**

Alas, all of the original patches have been sold. We had some difficulties with our supplier, but we’re looking for a new one. Is anyone interested in tee shirts, gimme caps, or beer mugs? And should we match our logo with CP’s new, wrap-around logo?
With use, the gimbal gets gritty and no longer pans smoothly. This can have a serious effect on delicate pans and precision moves. Fortunately, it is easy to disassemble, clean, and re-lubricate your gimbal. Don’t worry, a thousand balls are not going to spill out of the gimbal and roll all over the floor.

All you need is a little patience, some General Electronics "Versalube" (G 341 M, a silicon grease), and a degreaser (naptha).

First, remove the gimbal from the post. Remove the yoke by unscrewing the two trunnions, then loosen and unscrew the "top nut." (This operation doesn’t require a spanner wrench if the gimbal has been removed from the post). Remove the nut and the six bevel head screws from the top of the gimbal. Gently pry up the top ring from the outer shell.

Gently push down on the inner shell while holding on to the outer shell. Push the inner shell out.

Pull up and remove the two bearings and spacer(s). Note the orientation of the bearings and spacer(s) as you take them out.

There may be some variation in design, but basically there are two identical bearings separated by one or more spacers. The dust cover has been removed from one face of each of the bearings to allow it to be greased.

These relatively open (bumpy) faces should face each other and the spacer(s).

Soak the bearings and spacer(s) in a degreaser such as naptha. Wipe, work, and/or blow clean. Re-pack the bearings and coat the rings with new grease. Also clean the inner and outer shells.

Re-assemble the gimbal by gently pushing the greased bearings and spacers into the lightly greased outer shell. Push the inner shell up through the bearings and outer shell. Attach the top ring and tighten the top nut.

Spin it to be sure you've put it all back together properly. (It’s actually quite forgiving; the bearings will work "upside down.") Re-attach the yoke and place the gimbal on the center post.

Add camera, balance according to the latest rules of trim, and give it a spin.

Cinema Products uses General Electronics "Versalube" for the gimbal bearings. I’ve tried three other lubricants, partly as a test and partly because I couldn’t find any Versalube and I was in a hurry.

The Radio Shack "Gel Lube with Teflon" that works well on the arm (see Volume 1, Number 4, page 9), was a disaster on the gimbal. The grease sticks too well to itself, giving the gimbal a smooth-but-sludge-like feel. Delicate pans were impossible.

White lithium grease works fairly well and will do in a pinch, but don’t overgrease.

The last thing I tried is a lightweight oil with Teflon. It is very, very slick. It’s been six weeks now and the oil hasn’t run out of the bearings. If the oil continues to stay put, it might be the lubricant of choice for the gimbal.

Jerry Holway

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### Classifieds

**For sale:** Steadicam II with 39lb non-adjustable arm, vest, 2 batteries, charger and cases, $18,000. With CP quickcharger $19,000. With adjustable 51 lb arm, $21,500. Compact vehicle kit, Model II, $350. WRC-3 radio focus system with 2 CP motors, etc., $2,750. Other misc. items available. Call Derrick at Whitehouse A.V. (805) 498-4177, Fax: (805) 499-7947.

**For sale:** Model III Steadicam, like new. 51 lb adjustable arm, washable vest, rebuilt quick charger, 2 trickle chargers, 4 batteries, all Seitz mods, cases. $29,995. Contact Kyle Rudolph, 118 Orchard Way, Berwyn, PA 19312, (215) 647-5595.

**For sale:** Adjustable Steadicam arm, 30-47 lb capacity. $6250 or best offer. Dave Knox, (212) 288-1603.

**For sale:** BL III camera #35893 with rh pistol grip, sliding bridge plate, 2 cables, one set Zeiss primes with PL adaptor, 16, 24, 32, 50, 85mm, $80,000. Also BL II #35296 and BL II #35517, each with rh pistol grip, sliding bridge plate, 2 cables, matte box, lens strips, one set Zeiss primes, bayonette mount. 16, 24, 32, 50, 85mm, $32,000 each. 1,000 foot mags, $3,500 each; 200 foot mags, $3000 each. Contact The Power Broker, (213) 470-7569.

**For sale:** IPD 12 to 24 volt DC amplifier, $300. 1 set Bob DeRose hand grips for Steadicam Model III, $199. Spare Steadicam Model III centerpost, including base pivotal worm gear and top plate $250. Contact David Crone, 23 Leacres Rd, Toronto, Ontario, M4G 1E4, Canada. (416) 421-3388.

**For sale:** New Frezzi 4&5 amp/hour Steadicam batteries, PAG fastchargers, Sony XC-77 CCD camera, Precision’s new 16/35mm Arri eyepiece tap with adjustable centering. Call us for a quote on all your Steadicam needs. We are dealer for everything. Call Derrick at Whitehouse A.V. (805) 498-4177, Fax: (805) 499-7947.