# NIERENBERG INVESTMENT MANAGEMENT CO Form SC 13D/A

October 26, 2006

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13D
Under the Securities Exchange Act of 1934
(Amendment No. 3)

ELECTRO SCIENTIFIC INDUSTRIES INC. (ESIO)
(Name of Issuer)

Common Stock (Title of Class of Securities)

285229100 (CUSIP Number)

David Nierenberg The D3 Family Funds 19605 NE 8th Street Camas, WA 98607 (360) 604-8600

With a copy to:

Henry Lesser, Esq.
DLA Piper Rudnick Gray Cary US LLP
2000 University Avenue
East Palo Alto, CA 94303
(650) 833-2000

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

October 24, 2006 (Date of Event which Requires Filing of this Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D and is filing this schedule because of ss.ss. 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box  $|_{-}|$ .

1	NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSON		
	The D3 Family Fund, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP*	(a) (b)	X   _
3	SEC USE ONLY		
4	SOURCE OF FUNDS*		

	WC				
5			DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED FEMS 2(d) OR 2(e)	  _	
6	CITIZENS	HIP O	R PLACE OF ORGANIZATION	 	
	Washingto	on			
		7	SOLE VOTING POWER	 	
			479,941 Common shares (1.6%)	 	
	UMBER OF SHARES	8	SHARED VOTING POWER		
BENI	EFICIALLY		0		
	WNED BY EACH EPORTING	9	SOLE DISPOSITIVE POWER	 	
	PERSON		479,941		
	WITH	10	SHARED DISPOSITIVE POWER	 	
			0		
12	persons a	as a (	ting person listed on this page, 479,941; for a group, 2,741,384 shares (9.4%)  THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTA	 	
13	PERCENT (	OF CL	ASS REPRESENTED BY AMOUNT IN ROW (11)		
14	TYPE OF I	REPOR'	FING PERSON*	 	
	PN				
			*SEE INSTRUCTIONS BEFORE FILLING OUT!	 	
			2		
1			FING PERSON  IDENTIFICATION NOS. OF ABOVE PERSON	 	
	The DIII	Offs	nore Fund, L.P.	 	
2	CHECK THI	E APP	ROPRIATE BOX IF A MEMBER OF A GROUP*	X   _	
2	SEC HSE	ONIT V		 	

4	SOURCE OF FUNDS*				
	WC				
5			DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED		
6	CITIZENSH	IIP O	R PLACE OF ORGANIZATION		
	Bahamas				
		7	SOLE VOTING POWER		
			633,275 common shares (2.2%)		
	MBER OF	8	SHARED VOTING POWER		
BENE	HARES FICIALLY		0		
	NED BY EACH	9	SOLE DISPOSITIVE POWER		
Р	PORTING ERSON		633,275		
	WITH	10	SHARED DISPOSITIVE POWER		
			0		
11	AGGREGATE	AMO	JNT BENEFICIALLY OWNED BY EACH REPORTING PERSON		
			ring person listed on this page, 633,275; for all reporting group, 2,741,384 shares (9.4%)		
12	CHECK BOX	IF '	FHE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES*  _		
13	PERCENT O	F CL	ASS REPRESENTED BY AMOUNT IN ROW (11)		
	9.4%				
14	TYPE OF R	EPOR	TING PERSON*		
	PN				
			*SEE INSTRUCTIONS BEFORE FILLING OUT!		
			3		
1			FING PERSON  IDENTIFICATION NOS. OF ABOVE PERSON		
	The D3 Fa	mily	Bulldog Fund, L.P.		
2	CHECK THE	APPI	ROPRIATE BOX IF A MEMBER OF A GROUP*		

				(a) (b)	X   _
3	SEC USE C	ONLY			
4	SOURCE OF	F FUND	os*		
	WC				
5			DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED (EMS 2(d) OR 2(e)		_
6	CITIZENSE	HIP OF	R PLACE OF ORGANIZATION		
	Washingto	on 			
		7	SOLE VOTING POWER		
			1,628,168 common shares (5.6%)		
	MBER OF	8	SHARED VOTING POWER		
BENE	FICIALLY		0		
	NED BY EACH PORTING ERSON WITH	9	SOLE DISPOSITIVE POWER		
P			1,628,168		
		10	SHARED DISPOSITIVE POWER		
			0		
11	AGGREGATE	E AMOU	NT BENEFICIALLY OWNED BY EACH REPORTING PERSO	 )N	
			ing person listed on this page, 1,628,168; for group, 2,741,384 shares (9.4%)	or all	reporting
12	CHECK BOX	K IF T	THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERT	TAIN S	HARES*  _
13	PERCENT C	OF CLA	SS REPRESENTED BY AMOUNT IN ROW (11)		
	9.4%				
14	TYPE OF F	REPORT	'ING PERSON*		
	PN				
			*SEE INSTRUCTIONS BEFORE FILLING OUT!		
			4		

1 NAME OF REPORTING PERSON S.S. OR I.R.S. IDENTIFICATION NOS. OF ABOVE PERSON

	Nierenber	g In	vestment Management Company, Inc.			
2	CHECK THE	APPI	ROPRIATE BOX IF A MEMBER OF A GROUP*		X   _	
3	SEC USE O	NLY				
4	SOURCE OF	SOURCE OF FUNDS*				
5			DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED IEMS 2(d) OR 2(e)		I_I	
6	CITIZENSH Washingto		R PLACE OF ORGANIZATION			
		7	SOLE VOTING POWER			
BENI	UMBER OF SHARES EFICIALLY WNED BY	8	SHARED VOTING POWER  2,741,384 shares (9.4%)			
RI	EACH PORTING ERSON WITH	9	SOLE DISPOSITIVE POWER 0			
		10	SHARED DISPOSITIVE POWER 2,741,384 shares			
11	AGGREGATE	AMO	JNT BENEFICIALLY OWNED BY EACH REPORTING PERS	ON		
			ting person listed on this page, 2,741,384; fgroup, 2,741,384 shares (9.4%)	or all	reporting	
12	CHECK BOX	IF 1	FHE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CER	TAIN S	HARES*  _	
13	PERCENT 0	F CL	ASS REPRESENTED BY AMOUNT IN ROW (11)			
14	TYPE OF R	EPOR'	FING PERSON*			
			*SEE INSTRUCTIONS BEFORE FILLING OUT!			

1			FING PERSON  IDENTIFICATION NOS. OF ABOVE PERSON			
	Nierenber	g In	vestment Management Offshore, Inc.			
2	CHECK THE	APPI	ROPRIATE BOX IF A MEMBER OF A GROUP*		X   _	
3	SEC USE C	NLY				
4	SOURCE OF	' FUNI	 )S*			
	WC					
5			DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED [EMS 2(d) OR 2(e)		I_I	
6	CITIZENSH	IP O	R PLACE OF ORGANIZATION			
	Bahamas					
		7	SOLE VOTING POWER			
			0			
	JMBER OF	8	SHARED VOTING POWER			
BENE	SHARES EFICIALLY		633,275 common shares (2.2%)			
	NED BY EACH	9	SOLE DISPOSITIVE POWER			
	EPORTING PERSON		0			
	WITH	10	SHARED DISPOSITIVE POWER			
			633,275 common shares			
11	AGGREGATE	AMO	JNT BENEFICIALLY OWNED BY EACH REPORTING PERS	ON		
			ring person listed on this page, 633,275; for group, 2,741,384 shares (9.4%)			9
12	CHECK BOX	IF :	THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CER			_
13	PERCENT C	F CL	ASS REPRESENTED BY AMOUNT IN ROW (11)			
	9.4%					
14	TYPE OF R	EPOR'	FING PERSON*			
	PN 					
			*SEE INSTRUCTIONS BEFORE FILLING OUT!			

6

This Amendment No. 3 to Schedule 13D (this "Amendment") amends the below-indicated items from the Schedule 13D previously filed by or on behalf of the undersigned parties (the "Reporting Persons") (the "Schedule 13D"), by supplementing such Items with the information below:

#### Item 4. Purpose of Transaction

The reporting persons have acquired additional shares of ESIO for Investment since the prior amendment to their Schedule 13D. See Item 5.

The reporting persons acquired the shares because we continue to believe that there is a substantial gap between ESIO's current market value and its intrinsic value. We believe this valuation gap persists even though the company has fine management, a fine board, a sound business strategy, leading market shares in its major business units, an attractive long term growth rate, and a fortress balance sheet.

In a friendly and constructive spirit, we have recently shared several ideas with the company in the hope that these ideas might, over time, help close the gap between ESIO's market and intrinsic value. This dialogue occurred in two conversations, summarized below, subsequent to ESIO's annual shareholder meeting of October 5, one with the Chairman of the Board of Directors and the other with the CEO, CFO, and the company's Director of Corporate Development and Investor Relations.

In our conversation with the Chairman, we noted that, according to ESIO's most recent proxy statement, none of the company's outside directors owned outright any shares of the company's stock. We also expressed our belief that the financial community appears to attribute little value to ESIO's approximately \$7.50 per share in cash when valuing the company. Finally, we noted how challenging it is for the company to earn a mid teen's return on equity (which we consider achievable) when half the company's equity sits on its balance sheet in cash and marketable securities which earn only a 5% pre-tax return.

We suggested to the Chairman that the ESIO board consider mandating that each outside director ultimately, over a period of time, hold a significant personal investment in the company's shares, which could be purchased in the open market or earned through board service in lieu of cash fees. We believe large director shareholding could more closely align the interests of the company's directors and shareholders and perhaps heighten urgency about driving ESIO to attain a mid-teens return on equity. We believe that doing this could help close the gap between ESIO's market and intrinsic value.

Our separate conversation with the CEO, CFO and Director of Corporate Development and Investor Relations pertained to several other investors' apparent disappointment with ESIO's recently reported quarterly results. During the company's earnings conference call, several investors expressed surprise and displeasure with the company's revenue guidance, both relative to their expectations and to the company's prospective shipments. This negative reaction was unfortunate because it appears to us that ESIO's several years of investing heavily in Research & Development is beginning to pay off in new products, increased customer penetration, market share gains, improved revenue growth, and widening margins.

The purpose of our conversation, however, was to suggest to management that the shareholders' disappointment with the company's revenue guidance was neither unreasonable nor unforeseeable. After all, investors have two fundamental preferences: they prefer linear growth over lumpy growth and they hate surprises.

Legitimate investor expectations about linear revenue growth create a challenge for ESIO for three reasons: (1) many ESIO products carry seven figure price tags, which means that small variations in the number of units shipped in a quarter can drive significant near term revenue fluctuations; (2) ESIO sells to a highly concentrated set of customers, which means that small near term variations in ordering by a single customer can drive significant near term revenue fluctuations; and (3) ESIO is introducing many big ticket new products which customers will test thoroughly before accepting and paying for the products.

Therefore we advised ESIO management that they should bend over backwards to remind investors that these innocent factors can cause meaningless near term fluctuations in sequential revenue growth while the company can nevertheless remain on a healthy 15% + long term growth trajectory. In addition, we suggested that ESIO management consider guiding and characterizing financial results less by individual quarter and more in terms of multi-quarter moving averages which could help smooth over insignificant near term fluctuations. Our belief is that such proactive investor communication could avoid the disappointment which occurred in the most recent earnings call.

In conclusion, we believe that the combination of more proactive communications with the investment community and increased director ownership of ESIO stock could ultimately drive ESIO's share price closer to the company's intrinsic value.

The previous statements by the Reporting Persons as to their views regarding this investment represent solely their own analyses and judgments, based on publicly-available information and their own internal evaluation thereof. Those statements are not intended, and should not be relied on, as investment advice to any other investor or prospective investor. To the extent those statements reflect assessments of possible future developments, those assessments are inherently subject to the uncertainties associated with all assessments of future events; actual developments may materially differ as a result of circumstances affecting ESIO and/or extrinsic factors such as developments in the company's industry and the economic environment. The Reporting Persons reserve the right to change their internal evaluation of this investment in the future, as well as to increase or decrease their investment depending on their evaluation, without further amending their Schedule 13D except as required by applicable rules.

#### Item 5. Interest in Securities of the Issuer

(a, b) The Reporting Persons, in the aggregate, beneficially own 2,741,384 common shares, constituting approximately 9.4% of the outstanding shares.

(c) During the past sixty (60) days the following purchases of Shares were made by D3 Family Funds in open market transactions:

8

Fund	Transaction Date	Shares Bought	Price
D3 Bulldog Fund LP	9/29/2006	8,700	20.19

D3 Bulldog Fund LP	10/2/2006	50,600	20.24
D3 Bulldog Fund LP	10/3/2006	9,300	20.00
D3 Bulldog Fund LP	10/4/2006	2,000	20.11
D3 Bulldog Fund LP	10/18/2006	5,200	20.22
D3 Bulldog Fund LP	10/19/2006	3 <b>,</b> 820	20.30
D3 Bulldog Fund LP	10/24/2006	18,500	19.81
D3 Family Fund LP	9/29/2006	8,000	20.19
D3 Family Fund LP	10/2/2006	35 <b>,</b> 500	20.24
D3 Family Fund LP	10/18/2006	5,500	20.22
D3 Family Fund LP	10/19/2006	1,200	20.30
D3 Family Fund LP	10/24/2006	5,500	19.81
DIII Offshore Fund LP	10/2/2006	13,300	20.24
DIII Offshore Fund LP	10/3/2006	2,000	20.00
DIII Offshore Fund LP	10/4/2006	1,600	20.11
DIII Offshore Fund LP	10/18/2006	2,665	20.22
DIII Offshore Fund LP	10/19/2006	1,480	20.30
DIII Offshore Fund LP	10/24/2006	7,035	19.81

9

#### SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, each of the undersigned certifies that the information set forth in the Statement is true, complete and correct.

D3 Family Fund, L.P., and D3 Bulldog Fund, L.P.

By: Nierenberg Investment Management Company, Inc.

Its: General Partner

October 26, 2006 By: /s/ David Nierenberg

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David Nierenberg, President

DIII Offshore Fund, L.P.

By: Nierenberg Investment Management Offshore, Inc.

Its: General Partner

October 26, 2006 By: /s/ David Nierenberg

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David Nierenberg, President

Nierenberg Investment Management Company, Inc.

October 26, 2006 By: /s/ David Nierenberg

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David Nierenberg, President

Nierenberg Investment Management

Offshore, Inc.

October 26, 2006

By: /s/ David Nierenberg

David Nierenberg, President

10