

Prism Signals

by **John E. Sheehan**

aceshaw@optonline.net

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Dedication

for

Evelyn

Acknowledgements

The initial inspiration for these pages came from the late Helge Vinje in his New Ideas In Defensive Play In Bridge.

I'd like to thank Michael Kufs for his stern and steadfast insistence on truth and clarity.

Thanks also to my brother, Bob Sheehan, who helped hammer out many of these ideas.

Foreword

The purpose of these pages is to demonstrate one fact:

The four hands of a bridge deal are structurally interdependent.

A defender uses the dummy to generate a prism. The prism governs single suit and parity relationships in the two closed hands.

Defenders can employ signals that describe these relationships. The suggested methods are not tested and may be no better than any others that might be concocted.

Playability and practicality are not discussed; nor is the integration of prism signals with other basic signals.

Cost/benefit of the signals is not measured in terms of IMP's, match points or mental acuity. This is your brain...This is your brain on prism signals...Poached.

Terms such as proxy suit and individual suit are loosely defined and are the subject matter for meticulous partnership agreements.

When is a card played as a signal? When is a played card forced and not a signal? Undiscussed.

Perhaps defenders should play prism signals routinely. Perhaps, only when a player preempts and subsequently defends with lots of long suit spots. Perhaps...I don't want to think about it.

Please e-mail comments, corrections and criticism to:

aceshaw@optonline.net

Prologue

A Tale of Perceptual Twists

A most amiable bridge playing professor of optics peered through coke bottle lenses at the ethics committee chair, an angry-red chain-smoker who smash banged his gavel and steamed like a skip bidder scorned.

The professor's voice warmed to a sincere plea of innocence. "I'd sooner play pairs without 3NT in my bid box than use these glasses to cheat."

"X-ray!" brayed the chairman.

"Not my field," the professor demurred.

"Peeker!" cried the chairman. "Case in point."

The professor calmly examined Prosecution Exhibit I:

		<u>North</u>		
		S 643		
	{6-6-8-6}	H K52		
		D Q72		
		C AK74		
	<u>Prof</u>			
	S KJ85			
	H 10876			
	D 96			
	C Q92			
<u>Prof</u>	<u>North</u>	<u>East</u>	<u>South</u>	
---	---	---	1N	
Pass	3N	(end)		

"I led the spade five. Partner won with the queen, and returned a spade to declarer's ace. Next, a heart to the king and partner's ace. Then a spade to my jack, all followed. I cashed my good spade, collected clubs all around. Partner signaled with the five.

"I guarded hearts; partner guarded diamonds. I, West, was on lead and a double squeeze loomed:

	<u>North</u>	
	S ---	
	H 52	
	D Q72	
	C AK7	
<u>Prof</u>		<u>East</u>
S ---		S ---
H 1076		H 4
D 96		D J1084
C Q92		C 1086
	<u>South</u>	
	S ---	
	H QJ9	
	D AK53	
	C J	

"I played the club queen, breaking the squeeze."

"Effortlessly!" fumed the chairman.

"Quite naturally. Please note," said the professor. "Each bridge hand of thirteen cards contains one odd single suit and three even holdings; or, one even single suit and three odd holdings."

"Get to the fancy glasses," barked the chair.

"These lenses concentrate my vision on the two closed hands in every defensive position."

The professor shifted focus. The committee chamber vanished from sight and consciousness. Lost in thought the professor considered...

{6-6-8-6}

**The numbers that represent
{spades-hearts-diamonds-clubs}
in the two concealed hands.**

EVEN PRISM

The silent professor reflected upon Exhibit I:

	<u>North</u>	
	S 643	
{6-6-8-6}	H K52	
	D Q72	
	C AK74	
<u>Prof</u>		<u>East</u>
S KJ85		S Q92 odd
H 10876		H A4 spades
D 96		D J1084
C Q92		C 10865
	<u>South</u>	
	S A107	
	H QJ93 odd	
	D AK53 spades	
	C J3	

When all four numbers of a prism are even:

The closed hands have the same single suit

and

The single suits have the same parity.

Partner's prism signal promised an odd single suit- spades

Partner...odd spades

{ 6-6-8-6 }

Declarer...odd spades

"Peek-a-boo!" the chair intruded.

The professor resurfaced. "The prism signal revealed declarer's shape: 3=4=4=2. Declarer had discarded a club. The club queen sprung to my thumb."

"A defender signaling declarer's distribution. Horse feathers!" rumbled the chairman. Snorts escaped the members. The chair gaveled silence.

"Professor, you guess better than a mind reader in an eye patch. Take a gander."

Prosecution Exhibit II:

North
S K9742
{8-3-7-8} H 952
D Q7
C Q109

Prof
S ---
H KQJ10763
D A1053
C A8

<u>Prof</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	4S
5H	6S	Dbl	(end)

"I remember," said the professor. "I led the heart king to declarer's ace. He drew trump in two rounds -East echoed. A club to dummy's queen, and a club to my ace. Partner signaled club length -three.

"I knew twelve of declarer's cards -six spades, five clubs, and the heart ace. Declarer's thirteenth was a heart or a diamond loser. He was about to discard two hearts or two diamonds on clubs; and trump his loser in the dummy. I had to cash my diamond ace or the heart queen."

North
S K97
H 95
D Q7
C 10

Prof
S ---
H QJ107
D A1053
C ---

"And quicker than 'Pass' after 'Please wait' with a Yarborough, you grabbed the setting trick," said the chair.

The silent professor considered...

{8-3-7-8}

A prism that contains a couple of odd numbers and a couple of even numbers. The black suits form the even couple. The red suits form the odd couple. The prism takes its name from the odd couple.

RED PRISM

The silent professor reflected upon Exhibit II:

	<u>North</u>	
	S K9742	
{8-3-7-8}	H 952	
	D Q7	
	C Q109	
<u>Prof</u>		<u>East</u>
S ---		S 86 even
H KQJ10763		H 8 spades
D A1053		D KJ98642
C A8		C 643
	<u>South</u>	
	S AQJ1053	
	H A4 odd	
	D --- clubs	
	C KJ752	

The two concealed single suits always correspond to one of the prism couples.

Partner's prism signal revealed his single suit to be spades.

In a Red Prism clubs and spades form the even couple.

When the single suits correspond to the even couple, their parity differs.

Partner...even spades

{ 8-3-7-8 }

Declarer...odd clubs

"Alert!" cried the chairman.

Aloud the professor explained, "I viewed declarer's hand through my Red Prism: odd in clubs, even elsewhere. Naturally, I cashed my heart queen "

Declarer: **S AQJ1053 H A4 D --- C KJ752**

Deep in thought...

"Dare I belabor the obvious for these gentlemen?"

Had partner held: **S 86 H 84 D KJ9862 C 643**

he would have used a prism signal to promise an odd single suit - clubs."

Partner...odd clubs

Red Prism

Declarer...even spades

Declarer: **S AQJ1053 H A D 4 C KJ752**

"Quick the diamond ace."

The professor, primed to deliver a closing argument, stood and stared at empty chairs. She raised her shades. She blinked; blinked again. No one. The jury was out but briefly.

I. HAND PATTERNS

With, thankfully, no money at stake you hold:

S 9652 **H** 52 **D** 984 **C** J864

Though poor in high cards, the hand has a wealth of attributes:

Hand pattern: 4-4-3-2.

Distribution: 4=2=3=4.

Index of the hand pattern: three.

Single suit: diamonds.

Parity of the single suit: odd.

A **hand pattern** is an arrangement of thirteen cards in four suits that forms one hand of a bridge deal. The four suit lengths that make up a hand pattern do not correspond to specific suits.

All thirty-nine hand patterns are listed below in order of frequency. Each hand pattern contains one number that differs from the other three- one odd number and three even numbers; or one even number and three odds.

The 39 Hand Patterns by frequency:

- | | |
|---------------------|----------------------|
| 1. 4-4- 3 -2 | 11. 7-3- 2 -1 |
| 2. 5-3-3- 2 | 12. 6-4- 3 -0 |
| 3. 5- 4 -3-1 | 13. 5 -4-4-0 |
| 4. 5 -4-2-2 | 14. 5-5-3- 0 |
| 5. 4 -3-3-3 | 15. 6 -5-1-1 |
| 6. 6- 3 -2-2 | 16. 6- 5 -2-0 |
| 7. 6-4-2- 1 | 17. 7 -2-2-2 |
| 8. 6 -3-3-1 | 18. 7- 4 -1-1 |
| 9. 5-5- 2 -1 | 19. 7 -4-2-0 |
| 10. 4-4-4- 1 | 20. 7-3-3- 0 |

The top twenty hand patterns encompass more than 99% of all hands. The remaining nineteen (below) range from the infrequent to the improbable.

The most common of this second batch, 8-2-2-1, appears once in 500 hands.

- | | |
|-------------|--------------|
| 21. 8-2-2-1 | 31. 8-5-0-0 |
| 22. 8-3-1-1 | 32. 10-2-1-0 |
| 23/ 8-3-2-0 | 33. 9-4-0-0 |
| 23. 7-5-1-0 | 34. 10-1-1-1 |
| 25. 6-6-1-0 | 35. 10-3-0-0 |
| 26. 8-4-1-0 | 36. 11-1-1-0 |
| 27. 9-2-1-1 | 37. 11-2-0-0 |
| 28. 9-3-1-0 | 38. 12-1-0-0 |
| 29. 9-2-2-0 | 39. 13-0-0-0 |
| 30. 7-6-0-0 | |

The least frequent, 13-0-0-0, appears once every 158 billion hands. It is likely that, if you ever have held this rarest of birds, you've been had.

The **distribution** of a hand is a permutation of a hand pattern that specifies the length of spades=hearts=diamonds=clubs, respectively. Consider the most common hand pattern: 4-4-3-2. Twelve permutations of the pattern are generated by having the suit lengths that make up the hand pattern correspond to spades=hearts=diamonds=clubs, respectively. The twelve distributions spawned by the 4-4-3-2 hand pattern are:

4=4=3=2 4=4=2=3 4=3=4=2 4=2=4=3
 4=3=2=4 4=2=3=4 3=4=4=2 2=4=4=3
 3=4=2=4 2=4=3=4 3=2=4=4 2=3=4=4

All 560 distributions are not listed above or below.

The **parity** of a number is either odd or even. If a number is odd, its parity is odd. If a number is even, its parity is even. Zero is even.

The **relative parity** of two numbers is either **equal**- both odd or both even; or **opposite**- one odd and one even.

The **index of a hand pattern** is the sole odd number, or the sole even number of the four numbers that represent the hand pattern..

The **single suit in a distribution** is the one suit with length different in parity from each of the other three suit lengths.

Suppose a prism signal reveals that the index of declarer's hand pattern is six. Search the list of thirty-nine hand patterns for the index six. You will discover only two patterns with that index: **6-3-3-1**; and **6-5-1-1**.

The auction and play are sure to indicate declarer's one-suiter, **6-3-3-1**; or two-suiter, **6-5-1-1**.

Defenders who use prism signals focus on the index of declarer's hand pattern. To facilitate this task, hand patterns can be grouped according to index:

HAND PATTERNS with EVEN INDEXES				
index	zero	two	four	six
	5-5-3-0	5-3-3-2 *	5-4-3-1 *	6-3-3-1
	7-3-3-0	5-5-2-1	4-3-3-3 *	6-5-1-1
		7-3-2-1	7-4-1-1	
HAND PATTERNS with ODD INDEXES				
index	one	three	five	seven
	6-4-2-1	4-4-3-2 *	5-4-2-2 *	7-2-2-2
	4-4-4-1	6-3-2-2 *	5-4-4-0	7-4-2-0
	8-2-2-1	6-4-3-0	6-5-2-0	

Declarer will hold one of the above hand patterns 99.5% of the time. In roughly three out of four deals declarer will hold a starred pattern.

When a defender discovers the index of declarer's hand pattern, the task of exacting declarer's distribution is dramatically eased. Superficially similar hand patterns, such as 5-4-2-2 and 5-4-3-1 should not be confused. If declarer holds a five, then 2=4=5=2 is possible; and 3=4=5=1 (four) is not.

How best to get a peek at declarer's single suit and index? Laws ban reflecting mirrors, but refracting prisms serve.

II. REFRACTION

Helge Vinje in his *New Ideas in Defensive Play in Bridge* described the hand pattern signal -ordered spot card play in the trump suit that communicates single suit parity.

Prism Signals incorporates the hand pattern signal and develops the underlying theory to support an extensive battery of signals. Playing Vinje hand pattern signals, East holds:

S 9652 **H** 52 **D** 984 **C** J864

and hears this auction:

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1H
Dbl	1N	Pass	4 H
Pass	Pass	Pass	

While West searches for an opening lead, East notes his odd single suit, diamonds. Hand pattern signalers play a low trump spot followed by a high one to send the message I have an odd single suit.

Examine the problem from West's point of view:

<u>North</u>
S 743
H 976
D J105
C KQ105
<u>West</u>
S Q108
H KQ
D AK62
C A973

West leads the diamond king, continues with the ace, and South wins the third round with the queen -East follows. Declarer plays ace and a trump. East signals low-high with the deuce and five.

West wins and must find a continuation to ensure one trick in this position:

	<u>North</u>	
	S 743	
	H 9	
	D ---	
	C KQ105	
<u>West</u>		
S Q108		
H ---		
D 2		
C A973		

East's spots send the message I have an odd single suit. East started with three diamonds. Quick, what is declarer's hand pattern?

Now suppose that, rather than I have an odd single suit, West receives the message *Declarer is even only in hearts*.

Declarer started with six hearts. The index of declarer's hand pattern is six . The path to declarer's hand pattern is direct. Two such patterns exist: **6-3-3-1** and **6-5-1-1**. The opening salvo -three rounds of diamonds- rules out **6-5-1-1**. Declarer's hand pattern is **6-3-3-1**. The club ace is cash in the bank. Down one.

The full deal:

	<u>North</u>	
	S 743	
	H 976	
	D J105	
	C KQ105	
<u>West</u>		<u>East</u>
S Q108		S 9652
H KQ		H 52
D AK62		D 984
C A973		C J864
	<u>South</u>	
	S AKJ	
	H AJ10843	
	D Q73	
	C 2	

A defender who receives a hand pattern signal uses a prism to refract the light partner sheds on his own hand, bending it to beam instead upon declarer's hand. The prism transforms information about the parity and identity of defender's single suit into a description of declarer's hand pattern...instantaneously.

Consider again the deal above. Same auction to four hearts, but now East holds:

S 965 H 52 D 984 C J8642

East notes his even single suit, hearts, and play proceeds: three rounds of diamonds, ace and a heart. East follows high-low in trump to send the message...

I have an even single suit.

A prism refracts the message

Declarer is odd in diamonds.

West, in with the heart king, needs to score the club ace or the spade queen to defeat four hearts in this position:

North
S 743
H 9
D ---
C KQ105

West
S Q108
H ---
D 2
C A973

Declarer started with three diamonds, so his hand pattern index is three. The index chart lists:

4-4-**3**-2 (ruled out by the auction)
6-**3**-2-2 and 6-4-**3**-0.

West must consider two distributions: 2=6=3=2 and 4=6=3=0.

The defense effective against both distributions is not easy to find. However, the well defined distributional parameters grant narrow focus to the search.

West is alive to the danger of attempting to cash the club ace. Declarer may hold none. West is also confident that if declarer does hold clubs, he has two.

The full deals:

	<u>North</u>		<u>North</u>	
	S 743		S 743	
	H 976		H 976	
	D J105		D J105	
	C KQ105		C KQ105	
<u>West</u>		<u>East</u>	<u>West</u>	<u>East</u>
S Q108		S J965	S Q108	S 965
H KQ		H 52	H KQ	H 52
D AK62		D 984	D AK62	D 984
C A973		C 864	C A973	C J8642
	<u>South</u>	OR	<u>South</u>	
	S AK		S AKJ2	
	H AJ10843		H AJ10843	
	D Q73		D Q73	
	C J2		C ---	

A club void must be accompanied by four spades. One discard on a club honor cannot help declarer. A low club exit is the effective defense against both index three hand patterns. (Note: A low club exit works in the first variation but cashing seems simpler.)

If a peek is worth two finesses, is a prism worth a compound of squeezes?

III. SIMPLE PRISMS

{8-6-6-6} {7-5-7-7} {8-4-6-8} {9-5-7-5}

A simple prism is a set of four odd or four even numbers that total twenty-six. The numbers represent the total spades-hearts-diamonds-clubs in the two closed hands.

An **Even Prism** is a prism in which all four numbers are even-
{6-6-6-8}.

Prosecution Exhibit I from the Prologue features an Even Prism.

	<u>North</u>		
	S 643		
{6-6-8-6}	H K52		
	D Q72		
	C AK74		
	<u>Prof</u>		
	S KJ85		
	H 10876		
	D 96		
	C Q92		
<u>Prof</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N
Pass	3N	(end)	

The spade five is led, and the dummy is tabled. To calculate the prism, West considers her own hand and the dummy, adds the cards in each suit, and subtracts each total from thirteen. Here, an Even Prism results: {6-6-8-6}.

Now, examine Exhibit I's two closed hands:

	<u>North</u>	
	S	
{6-6-8-6}	H	
	D	
	C	
<u>Prof</u>		<u>East</u>
S		S Q92 odd
H		H A4 spades
D		D J1084
C		C 10865
	<u>South</u>	
	S A107	
	H QJ93 odd	
	D AK53 spades	
	C J3	

In both hands, the single suit is the spade suit. And the relative parity of the two holdings is equal.

Switch minor suit fives in the closed hands and examine the resulting relationships:

	<u>North</u>	
	S	
{6-6-8-6}	H	
	D	
	C	
<u>Prof</u>		<u>East</u>
S		S Q92 even
H		H A4 hearts
D		D J10854
C		C 1086
	<u>South</u>	
	S A107	
	H QJ93 even	
	D AK3 hearts	
	C J53	

Both hands have the same single suit, this time hearts. Again, the relative parity of the single suits is equal.

Switch any number of cards in the South and East hands, examine the results, and relationships crystallize: same single suit and equal parity.

Even Prisms:

The two concealed single suits are the same suit.

The relative parity of the two single suits is equal.

An **Odd Prism** is a prism in which all four numbers are odd-
{7-7-5-7}.

Odd Prisms:

The two concealed single suits are the same suit.

The relative parity of the single suits is opposite.

Consider this deal featuring an Odd Prism:

<u>North</u>	
S 64	
H 754	{9-7-5-5}
D KQ10	
C KQJ95	
	<u>East</u>
	S 97
	H A103
	D AJ832
	C A82

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	1N*	Dbl
2H	3C	Pass	4S
Pass	Pass	Pass	
* (1N = 12-14)			

West leads the diamond nine. East reckons this to be from a doubleton and holds up to prevent a late entry to dummy. Declarer draws trump in three rounds; and plays the heart king. East wins with the ace.

The order of West's spot plays- 8-2-5, a prism signal, sends the message I am even only in diamonds.

East has calculated the Odd Prism {9-7-5-5}.

		<u>North</u>	
		S 64	
		H 754	{9-7-5-5}
		D KQ10	
		C KQJ95	
	<u>West</u>		<u>East</u>
	S		S 97
even	H		H A103
diamonds	D		D AJ832
	C		C A82
		<u>South</u>	
		S	
	odd	H	
	diamonds	D	
		C	

Odd Prism: The closed hands have the same single suit with opposite relative parity.

West...Even diamonds

Odd Prism

Declarer...Odd diamonds

East receives the refracted message *Declarer is odd only in diamonds.*

East knows partner led a doubleton diamond. Declarer started with three diamonds. Declarer's hand pattern index is three: 6-**3**-2-2 or 6-4-**3**-0.

The two possible distributions are 6=2=3=2 and 6=0=3=4. And declarer just led the heart king. He has no heart void. Declarer's start: 6=2=3=2.

East wins with the heart ace and is on lead in this position:

	<u>North</u>	
	S ---	
	H 75	{9-7-5-5}
	D Q10	
	C KQJ9	
<u>West</u>		<u>East</u>
S ---		S ---
H J986		H 103
D 4		D AJ8
C 1063		C A82
	<u>South</u>	
	S J103	
	H Q	
	D 76	
	C 74	

If East returns a heart, declarer wins with the queen and plays a club, to dummy. East must hold up. Declarer trumps a heart stripping East of his exit card, and ends him with a club out. Four spades bid and made.

But, East knows that declarer started with 6=2=3=2 distribution. So in the diagrammed position East gets out with a small club rather than a heart, saving for later both the club ace and the heart exit -one down.

The full deal:

	<u>North</u>	
	S 64	
	H 754	{9-7-5-5}
	D KQ10	
	C KQJ95	
<u>West</u>		<u>East</u>
S 852		S 97
even H J9862		H A103
diamonds D 94		D AJ832
C 1063		C A82
	<u>South</u>	
	S AKQJ103	
odd H KQ		
diamonds D 765		
C 74		

Switch the minor suit fours in the South and West hands and the message changes.

		<u>North</u>		
		S 64		
		H 754	{9-7-5-5}	
		D KQ10		
		C KQJ95		
	<u>West</u>		<u>East</u>	
	S		S 97	
even	H		H A103	
clubs	D		D AJ832	
	C		C A82	
		<u>South</u>		
		S		
	odd	H		
	clubs	D		
		C		

North-South again reach a doomed four spades and play proceeds similarly. West leads a singleton diamond and East misjudges and allows dummy's king to win. Declarer plays three rounds of trump.

This time West's prism signal in trump, 8-5-2, sends the message *I am even in clubs*.

West...Even clubs

Odd Prism

Declarer...Odd clubs

East receives the message *Declarer is odd only in clubs*.

The singleton opening lead and subsequent play reveal that declarer's holds one club. So declarer's hand pattern index is one: 6-4-2-**1**.

The only distribution which East must consider upon capturing declarer's heart king is 6=2=4=1.

The position:

	<u>North</u>	
	S ---	
	H 75	{9-7-5-5}
	D Q10	
	C KQJ9	
<u>West</u>		<u>East</u>
S ---		S ---
H J986		H 103
D ---		D AJ8
C 10643		C A82
	<u>South</u>	
	S J103	
	H Q	
	D 764	
	C 7	

East's low club exit, correct before, now costs a trick. So East cashes the club ace, exits with a heart, and awaits three diamond tricks. Diamond ruffs? Who needs 'em?

The full deal:

	<u>North</u>	
	S 64	
	H 754	{9-7-5-5}
	D KQ10	
	C KQJ95	
<u>West</u>		<u>East</u>
S 852		S 97
even H J9862		H A103
clubs D 9		D AJ832
C 10643		C A82
	<u>South</u>	
	S AKQJ103	
odd H KQ		
clubs D 7654		
	C 7	

The four hands of a bridge deal are structurally interdependent. The two hands in view, a defender's and the dummy, determine a prism. In turn, the prism determines relationships between features of the two closed hands -the single suits and their relative parity.

The two Simple Prisms determine direct relationships. There are six more prisms. The relationships that these six determine are neither as simple nor as direct.

IV. TWO COUPLE PRISMS

{8-3-7-8} {5-6-7-8} {6-9-6-5} {5-7-6-8}

Two Couple Prisms are prisms that contain two odd numbers and two even numbers.

Prosecution Exhibit II from the Prologue features a Two Couple Prism:

North
S K9742
{8-3-7-8} H 952
D Q7
C Q109

Prof
S ---
H KQJ10763
D A1053
C A8

<u>Prof</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	4S
5H	6S	Dbl	(end)

The prism {8-3-7-8} contains an odd couple and even couple of numbers. The even couple corresponds to the black suits. The odd couple corresponds to the red suits. The prism takes its name from the odd couple. {8-3-7-8} is a Red Prism.

Examine the single suits in the closed hands of Exhibit II:

	<u>North</u>	
	S	
	H	
{8-3-7-8}	D	
	C	
<u>Prof</u>		<u>East</u>
S		S 86 even
H		H 8 spades
D		D KJ98642
C		C 643
	<u>South</u>	
	S AQJ1053	
	H A4 odd	
	D --- clubs	
	C KJ752	

{8-3-7-8} Red Prism: The concealed single suits are the blacks with relative parity opposite.

Switch the heart four and club four in the closed hands, and examine the resulting relationships:

	<u>North</u>	
	S	
	H	
{8-3-7-8}	D	
	C	
<u>Prof</u>		<u>East</u>
S		S 86 odd
H		H 84 diamonds
D		D KJ98642
C		C 63
	<u>South</u>	
	S AQJ1053	
	H A odd	
	D --- hearts	
	C KJ7542	

{8-3-7-8} Red Prism: The concealed single suits are the reds with relative parity equal.

All interchanges of one or more cards between the closed hands bear out these relationships: (1) The concealed single suits corresponds to a prism couple. (2) Relative parity varies with correspondence.

There are six Two Couple Prisms. Each prism takes its name from the odd couple:

Red Prisms and Black Prisms
 Major Prisms and Minor Prisms
 Pointed (S/D) Prisms and Round (H/C) Prisms

Two Couple Prisms

The concealed single suits correspond to a prism couple.

Correspondence to the odd couple indicates equal relative parity.

Correspondence to the even couple indicates opposite relative parity.

Consider this deal featuring a Round Prism:

<u>North</u>	
S J754	
H KQ3	{6-9-6-5}
D A762	
C AQ	
	<u>East</u>
	S Q109
	H 4
	D Q85
	C K108543

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N
Pass	2C	Pass	2S
Pass	6S	(end)	

West leads the heart jack, captured by dummy's king. Declarer plays the ace and king of trump. West with two (even) trumps signals possession of an even single suit- spades, the trump suit itself.

West...Even spades

Round Prism

Declarer...Odd diamonds

East is on lead in this position, needing one trick:

	<u>North</u>	
	S J7	
	H 3	{6-9-6-5}
	D A762	
	C AQ	
<u>West</u>		<u>East</u>
S		S ---
even H		H ---
spades D		D Q85
C		C K108543
	<u>South</u>	
	S	
odd H		
diamonds D		
	C	

Declarer, who holds four spades and opened 1NT, holds three diamonds (not five or one.)

The index of declarer's hand pattern is three- 4-4-**3**-2.
Declarer started with 4=4=3=2 distribution.

Declarer started play with ten tricks: four spades, two hearts and one heart ruff, two diamonds (assume the diamond king), and one club. If declarer can pick up the diamond suit without loss, the two additional tricks fulfill the contract. Conceding one club trick does not harm the defense.

So, rather than open up the diamond suit, East exits with a club into the jaws of the tenace defeating the slam.

The full deal:

	<u>North</u>	
	S J754	
	H KQ3	{6-9-6-5}
	D A762	
	C AQ	
<u>West</u>		<u>East</u>
	S 86	S Q109
even H J10982		H 4
spades D J43		D Q85
C 976		C K108543
	<u>South</u>	
	S AK32	
odd H A765		
diamonds D K109		
	C J2	

Switch minor suit nines in the closed hands and the message changes:

	<u>North</u>		
	S J754		
	H KQ3	{6-9-6-5}	
	D A762		
	C AQ		
		<u>East</u>	
		S Q109	
		H 4	
		D Q85	
		C K108543	
<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N
Pass	2C	Pass	2S
Pass	6S	(end)	

West leads the heart jack, captured by dummy's king. Declarer plays the ace and king of trump. West with two (even) trumps signals possession of an odd single suit.

Declarer continues with a heart to dummy's queen. East trumps. West signals an (odd) heart start -five.

West...Odd hearts

Round Prism

Declarer...Odd clubs

Declarer's hand pattern index is three- 4-4-**3**-2. Needing one trick, East to lead again in this position:

	<u>North</u>	
	S J7	
	H 3	{6-9-6-5}
	D A762	
	C AQ	
	<u>West</u>	<u>East</u>
	S	S ---
odd	H	H ---
hearts	D	D Q85
	C	C K108543
	<u>South</u>	
	S	
odd	H	
clubs	D	
	C	

Declarer started with 4=4=2=3 distribution. The club exit, correct before, yields a club trick after which declarer will trump a club in dummy and claim.

So East exits with a diamond and awaits the setting trick in clubs.

The full deal:

	<u>North</u>	
	S J754	
	H KQ3	{6-9-6-5}
	D A762	
	C AQ	
	<u>West</u>	<u>East</u>
	S 86	S Q109
odd	H J10982	H 4
hearts	D J943	D Q85
	C 76	C K108543
	<u>South</u>	
	S AK32	
odd	H A765	
clubs	D K10	
	C J92	

Defenders need to know both the parity and the identity of partner's single suit to use a prism effectively. So prism signalers learn to embed the two pieces of information in one communiqué.

V. THREE LITTLE TRUMPS

Vinje hand pattern signals communicate one fact about the single suit- parity. Prism signals seek to communicate both the parity and the identity of the single suit.

Consider this West hand from a previous deal:

S 852 **H** J9862 **D** 94 **C** 1063

The message sent- (8_2...5)- *I am even only in diamonds.*

Holding three little trumps (852) and an even single suit:

- 1.) The trump suit (odd) cannot be the single suit (even.)
- 2.) Hearts, diamonds, clubs are the single suit candidates.
- 3.) The relationship of the third trump to the echo identifies the single suit:

_ Above ...the high candidate.

_ Amid ...the middle candidate.

_ Below ...the low candidate.

Note: If the three little trumps are started low-high then the single suit is the trump suit itself.

Consider the following warm-up deal featuring a Major Prism and three little trumps with East:

North
 S AKQ
 {9-7-6-4} H 1042
 D 10532
 C J103

West
 S J
 H AJ7
 D AJ7
 C KQ8764

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1S
2C	2S	Pass	3S
Pass	4S	(end)	

West leads the club king, won by declarer's ace. Declarer draws trump in three rounds and exits with the club jack. All follow. The order of East's trump spots: 10_9...8. The message is *I am even in clubs* .

Even clubs with East

Major Prism

Odd diamonds with declarer

The auction indicates that declarer holds a one-suiter with three diamonds. The index of declarer's hand pattern is three. The relevant hand pattern: 6-**3**-2-2. The position with West needing three tricks:

	<u>North</u>		
	S AKQ		
{9-7-6-4}	H 1042		
	D 10532		
	C J103		
<u>West</u>		<u>East</u>	
S J		S	
H AJ7		H	even
D AJ7		D	clubs
C KQ8764		C	
	<u>South</u>		
	S		
	H	odd	
	D	diamonds	
	C		

Declarer started with 6=2=3=2. Upon winning the club queen, West cashes the heart ace, exits with a heart, and awaits the setting tricks in diamonds.

The full deal:

	<u>North</u>		
	S AKQ		
{9-7-6-4}	H 1042		
	D 10532		
	C J103		
<u>West</u>		<u>East</u>	
S J		S 1098	
H AJ7		H 98653	even
D AJ7		D 984	clubs
C KQ8764		C 95	
	<u>South</u>		
	S 765432		
	H KQ	odd	
	D KQ6	diamonds	
	C A2		

Switch red sixes in the diagram above. Declarer captures the club king opening and draws trump. East's follows 8_9...10.

Odd spades

Major Prism

Odd hearts

Index...three
6-**3**-2-2 pattern
6=3=2=2 distribution

In this position West cashes the ace of diamonds, exits with a diamond and awaits the setting tricks in hearts.

The full deal:

	<u>North</u>	
	S AKQ	
{9-7-6-4}	H 1042	
	D 10532	
	C J103	
<u>West</u>		<u>East</u>
S J		S 1098
H AJ7		H 9853 odd
D AJ7		D 9864 spades
C KQ8764		C 95
	<u>South</u>	
	S 765432	
	H KQ6 odd	
	D KQ hearts	
	C A2	

In the 1991 World Top Pairs at The Hague, a prizewinning pair misdefended against a grand slam in hearts:

	<u>North</u>
	S Q10965
{6-10-4-6}	H 64
	D AQ96
	C K2

<u>West</u>
S K8
H 7
D K8753
C J8753

West led a club against seven hearts. Declarer won with the king, continued with a club to the ace, and trumped a club in dummy, East following. Declarer ran trumps (declarer held seven solid and East three.)

West had to find a discard on the last trump (5) in what he hoped to be this guess which finesse position:

	<u>North</u>	
	S Q10	
{6-10-4-6}	H ---	
	D AQ	
	C ---	
<u>West</u>		<u>East</u>
S K8		S 74
H ---		H ---
D K8		D J4
C ---		C ---
	<u>South</u>	
	S AJ	
	H 5	
	D 10	
	C ---	

Declarer can go wrong by discarding the spade queen on the heart five, crossing to dummy's diamond ace, and finessing the spade jack. Hopefully, West discarded the spade eight.

Disaster. The position above was not the position in reality. In fact, declarer was without recourse until West discarded the spade. North-South: +2210

A defender expecting a prism signal would focus on East's trump spots: 10_2...8. The message: *I am even in diamonds.*

Even diamonds

Even Prism

Even diamonds

The index of declarer's hand pattern is either zero or two. The relevant hand patterns: 7-3-**2**-1 or 7-3-3-**0**.

West to discard on declarer's last trump in this position:

	<u>North</u>		
	S Q10		
{6-10-4-6}	H ---		
	D AQ		
	C ---		
<u>West</u>		<u>East</u>	
S K8		S	
H ---		H	even
D K8		D	diamonds
C ---		C	
	<u>South</u>		
	S		
	H	even	
	D	diamonds	
	C		

A declarer with a 7-3-**2**-1 hand pattern and 1=7=2=3 distribution has two successful lines: (1) With jack-small of diamonds and stiff ace of spades remaining, discard the diamond queen and execute a non-positional crisscross squeeze. (2) Without the diamond jack the straight diamond finesse succeeds in the position above. West cannot defend against either line. There is no losing guess which finesse; option because declarer's 1-7-2-3 allows no spade finesse.

Therefore, West assumes that declarer started with a 7-3-3-**0** hand pattern and 3=7=0=3 distribution. He defeats the contract by discarding the diamond eight.

The actual deal:

	<u>North</u>	
	S Q10965	
{6-10-4-6}	H 64	
	D AQ96	
	C K2	
<u>West</u>		<u>East</u>
S K8		S J74
H 7		H 1082 even
D K8753		D J1042 diamonds
C J8753		C Q109
	<u>South</u>	
	S A32	
	H AKQJ953	
	D --- even	
	C A64 diamonds	

The guess which finesse ending, where declarer can opt to unblock spades by discarding the queen for a losing finesse, arises from this variation:

	<u>North</u>	
	S Q10965	
{6-10-4-6}	H 64	
	D AQ96	
	C K2	
<u>West</u>		<u>East</u>
S K8		S 7432
H 7		H 1082 even
D K8753		D J42 spades
C J8753		C Q109
	<u>South</u>	
	S AJ	
	H AKQJ953	
	D 10 even	
	C A64 spades	

The order of East trump plays would be 8_2...10.

Even spades

Even Prism

Even spades

The index of declarer's hand pattern is two. The relevant hand pattern: 7-3-**2**-1. Declarer must have started with 2=7=1=3 distribution; and baring the spade king is the correct defense in the guess which finesse ending.

Prism signals seek to communicate both parity and identity of the single suit. Three trump spots are used to include two pieces of information in one prism signal. Extra trumps are, of course, welcome.

VI. EXTRAS

The first three trump spots played from a longer trump holding constitute a prism signal. Partner considers the signal and the total number of signaler's trumps to learn the identity of declarer's single suit.

The warm-up deal in the Extra Trump category features a grand slam, an Odd Prism and five trumps with East:

	<u>North</u>
	S 3
{11-5-5-5}	H K1097632
	D 863
	C 97

<u>West</u>
S 7
H J
D Q10754
C Q106543

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	2C
3N*	4H	Pass	7S
(end)	*(minors)		

West leads a trump against seven spades. Declarer, who started with six solid, wins and continues, East following: 6-5-4-8-9. Next, the heart ace, heart king, and a heart ruffed with declarer's last trump. East's first three trump spots 6_5...4 promise an even single suit (not spades, odd.) East's prism signal reads *I am even in clubs*

West to discard in this position as declarer leads the heart ten from dummy and trumps in the closed hand:

	<u>North</u>		
	S ---		
{11-5-5-5}	H 10		
	D 863		
	C 97		
<u>West</u>		<u>East</u>	
S ---		S	
H ---		H	even
D Q107		D	clubs
C Q106		C	
	<u>South</u>		
	S		
	H	odd	
	D	clubs	
	C		

Even clubs

Odd Prism

Odd clubs

West assumes that declarer holds three clubs. (Partner with four clubs and one diamond would have advanced the 3NT preempt.) Declarer's hand pattern is a three: 6-**3**-2-2. The applicable distribution is 6=2=2=3. Therefore, West unguards the diamond queen, and holds clubs.

The full deal:

	<u>North</u>	
	S 3	
{11-5-5-5}	H K1097632	
	D 863	
	C 97	
<u>West</u>		<u>East</u>
S 7		S 98654
H J		H Q85 even
D Q10754		D J92 clubs
C Q106543		C J8
	<u>South</u>	
	S AKQJ102	
	H A4 odd	
	D AK clubs	
	C AK2	

Switch the minor suit deuces in the diagram above. East signals:
6_4...5.

Even diamonds

Odd Prism

Odd diamonds

Index...three
6-**3**-2-2 pattern
6=2=3=2 distribution

West unguards clubs and saves diamonds.

The full deal:

	<u>North</u>	
	S 3	
{11-5-5-5}	H K1097632	
	D 863	
	C 97	
<u>West</u>		<u>East</u>
S 7		S 98654
H J		H Q85 even
D Q10754		D J9 diamonds
C Q106543		C J82
	<u>South</u>	
	S AKQJ102	
	H A4 odd	
	D AK2 diamonds	
	C AK	

This next deal features a Minor Prism and four trumps with East:

	<u>North</u>		
	S A1073		
{4-10-7-5}	H K4		
	D J84		
	C K1087		
<u>West</u>		<u>East</u>	
S QJ852		S 64	
H 3		H 8765 odd	
D AK10		D Q9532 diamonds	
C A965		C Q2	
	<u>South</u>		
	S K9		
	H AQJ1092		
	D 76 odd		
	C J43 clubs		
<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1H
Dbl	Rdbl	2D	2H
2S	4H	(end)	

West leads the diamond king and avoids a black suit squeeze for the moment by shifting to a low club.

If West does not shift and continues diamonds, declarer ruffs the third round and plays four rounds of trump. Declarer wins five of six tricks with a club toward dummy in this position:

	<u>North</u>	
	S A1073	
{4-10-7-5}	H ---	
	D ---	
	C K10	
<u>West</u>		<u>East</u>
S QJ85		S 64
H ---		H ----
D ---		D Q9
C A9		C Q2
	<u>South</u>	
	S K9	
	H 9	
	D ---	
	C J43	

Alternatively, declarer can play the last heart instead of a club up. West jettisons the club ace, attempting to create an entry to partner's diamonds now that there are no trumps in the picture. But declarer discards the club ten, cashes the club king, plays a spade to the king and a spade toward dummy, ducking when West splits.

The full deal (repeated for convenience):

		<u>North</u>		
		S A1073		
	{4-10-7-5}	H K4		
		D J84		
		C K1087		
	<u>West</u>		<u>East</u>	
	S QJ852		S 64	
	H 3		H 8765	odd
	D AK10		D Q9532	diamonds
	C A965		C Q2	
		<u>South</u>		
		S K9		
		H AQJ1092		
		D 76	odd	
		C J43	clubs	
<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>	
---	---	---	1H	
Dbl	Rdbl	2D	2H	
2S	4H	(end)		

West leads the diamond king. However, at trick two West switches to a low club rather than continuing diamonds. Declarer guesses correctly, playing dummy's king.

Four rounds of trump are played -East follows 5-7-6-8. Declarer discards a spade and a club from dummy.

Declarer plays a fifth trump, discarding a diamond; East and West also shed diamonds. West is put on lead with a diamond to the ace, and must find the continuation that ensures two tricks in this position:

	<u>North</u>	
	S A107	
{4-10-7-5}	H ---	
	D ---	
	C 108	
<u>West</u>		<u>East</u>
S QJ8		S 64
H ---		H ----
D ---		D Q9
C A9		C Q
	<u>South</u>	
	S K9	
	H 9	
	D ---	
	C J4	

East with even trumps signals 5_7...6 promising an odd single suit...diamonds.

Odd diamonds

Minor Prism

Odd clubs

index...three
 6-**3**-2-2 pattern
 2=6=2=3 distribution

To rectify the count for the black suit squeeze, declarer must present the defense with a third trick. Thus, a low club exit to East's queen aids declarer's effort and is bad for the defense.

A low spade exit neither rectifies the count nor costs a trick. Declarer, 2=6=2=3 with king-small in spades, cannot untangle the spade suit for a third trick. Declarer wins the spade and plays a club to East's queen to rectify the count, but then a spade from East sabotages declarer's communications. The spade eight is West's only effective continuation in the above position.

South and East trade black suit fours. Now replay the hand - diamond ace, club king, five top trumps (hearts), and a diamond exit to West, but with East following to trump leads in this order: 6-5-7-8.

Even Hearts
Minor Prism
Odd Spades

Index...three
 6-**3**-2-2 pattern
 3=6=2=2 distribution

	North	
	S A107	
{4-10-7-5}	H ---	
	D ---	
	C 108	
West		East
S QJ8		S 6
H ---		H ----
D ---		D Q9
C A9		C Q4
	South	
	S K94	
	H 9	
	D ---	
	C J	

A spade exit concedes the game-going trick. Instead, West can cash the club ace and exit with a club to defeat the contract.

The full deal:

	<u>North</u>	
	S A1073	
{4-10-7-5}	H K4	
	D J84	
	C K1087	
<u>West</u>		<u>East</u>
S QJ852		S 6
H 3		H 8765 even
D AK10		D Q9532 hearts
C A965		C Q42
	<u>South</u>	
	S K94	
	H AQJ1092	
	D 76 odd	
	C J3 spades	

Three trumps are necessary to encode a prism signal. To hold more trumps is a luxury; to hold fewer, unfortunately, the norm.

VII. FIRST DISCARDS

Appropriately enough this chapter amounted to an editorial first discard. Check the Prologue for an example of a parity first discard. The signals described in Chapter IX *Parity Pairs* replace this signal.

VIII. PROXY SUITS

A prism signaler normally uses the trump suit to convey information about parity and identity of the single suit. At no trump, the defenders may agree to designate declarer's trick source as a **proxy trump suit**.

Consider this grand warm-up featuring powerful spades and a Minor Prism:

<u>North</u>	
S	KQJ1083
H	A7 {6-6-7-7}
D	J54
C	AK
	<u>East</u>
	S 6
	H J9854
	D 1063
	C J952

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N*
Pass	4C	Pass	4S
Pass	5C	Pass	5H
Pass	7N	(end)	

*(12-14) no 5-card major

Declarer wins the diamond king opening lead with the ace. Next come the spade ace, a spade to the king, and a top spade.

Declarer discards a diamond on the third round. West started with four (even) spades. West follows 4-5-2-9 in the proxy suit, to announce an odd single suit 4_5...2- clubs.

Odd clubs

Minor Prism

Odd diamonds

Index three
4-4-**3**-2 hand pattern
2=4=3=4 distribution

East must unguard clubs or hearts when spades are continued from dummy:

		<u>North</u>	
		S 83	
		H A7	{6-6-7-7}
		D J5	
		C AK	
	<u>West</u>		<u>East</u>
	S		S ---
odd	H		H J985
clubs	D		D ---
	C		C J952
		<u>South</u>	
		S	
	odd	H	
	diamonds	D	
		C	

The Gerber sequence promised two aces and a king with declarer. The weak no trump allows for the club queen or the heart queen, not both. Which? Not the club queen. With it, three rounds of clubs would precede the spade avalanche to activate potential squeezes.

So declarer is 2=4=3=4 with the king-queen fourth threat in hearts. East abandons clubs, holds hearts, and defeats the grabby grand.

The full deal:

		<u>North</u>	
		S KQJ1083	
		H A7	{6-6-7-7}
		D J54	
		C AK	
	<u>West</u>		<u>East</u>
	S 9542		S 6
odd	H 102		H J9854
clubs	D KQ87		D 1063
	C Q73		C J952
		<u>South</u>	
		S A7	
	odd	H KQ63	
	diamonds	D A92	
		C 10864	

In a variation of the same deal, South and West trade round threes. Declarer wins the diamond ace and runs spades. West, holding four (even) spades, follows 2-4-5-9 in the proxy suit, announcing an odd single suit 2_4...5- hearts.

Odd hearts

Minor Prism

Even spades

Index two
 5-3-3-**2** pattern
 2=5=3=3, 2=3=5=3,
 or 2=3=3=5 distribution

Again, East must commit in this position:

		<u>North</u>	
		S 83	
		H A7	{6-6-7-7}
		D J5	
		C AK	
	<u>West</u>		<u>East</u>
	S		S ---
odd	H		H J985
hearts	D		D ---
	C		C J952
		<u>South</u>	
		S	
	even	H	
	spades	D	
		C	

The weak no trump rules out five hearts (2=5=3=3). And West can defend single-handedly against five diamonds (2=3=5=3) by keeping the diamond queen and a round queen-third on the side.

But West cannot contribute to the defense when declarer's threat is in clubs (2=3=3=5.) So East keeps clubs, abandons hearts and defeats the grand.

The full deal:

	<u>North</u>	
	S KQJ1083	
	H A7	{6-6-7-7}
	D J54	
	C AK	
	<u>West</u>	<u>East</u>
	S 9542	S 6
odd	H 1032	H J9854
hearts	D KQ87	D 1063
	C Q7	C J952
	<u>South</u>	
	S A7	
even	H KQ6	
spades	D A92	
	C 108643	

Consider this no trump deal which features solid hearts, a Black Prism and a prism signal- the distributionally correct guide to effective defense in a PC world:

	<u>North</u>		
	S 64		
{7-6-4-9}	H AKQJ72		
	D J73		
	C A5		
	<u>West</u>		
	S AJ72		
	H 6		
	D AQ9862		
	C K2		
<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
1D	1H	Pass	2H
2S	3D	Pass	3N
(end)			

West leads the diamond eight, East plays the five, declarer wins with the ten; and runs hearts. East has three (odd) hearts and follows 3-5-10, promising an odd single suit.

Odd hearts

Black Prism

Even diamonds

Index two
 5-3-3-2 pattern
 3=3=2=5 distribution

Declarer started with two diamonds and the king now stands alone. On the fourth heart, East discards a discouraging spade. Unable to defend against an end play if declarer has the club queen, West places that card with East. On the run of hearts West abandons clubs, reducing to:

S A H --- D AQ962 C ---

If declarer, always down one, tries to establish a spade trick before cashing the club ace...down two.

The full deal:

	<u>North</u>	
	S 64	
{7-6-4-9}	H AKQJ72	
	D J73	
	C A5	
<u>West</u>		<u>East</u>
S AJ72		S 10983
H 6		H 1053 odd
D AQ9862		D 54 hearts
C K2		C Q983
	<u>South</u>	
	S KQ5	
	H 984 even	
	D K10 diamonds	
	C J10764	

South and East trade minor suit fours- a trade which strengthens declarer's diamond king. As compensation, East gets declarer's spade queen in exchange for the spade ten. Rotisserie bridge.

	<u>North</u>	
	S 64	
{7-6-4-9}	H AKQJ72	
	D J73	
	C A5	
<u>West</u>		<u>East</u>
S AJ72		S Q983
H 6		H 1053 even
D AQ9862		D 5 spades
C K2		C Q9843
	<u>South</u>	
	S K105	
	H 984 even	
	D K104 clubs	
	C J1076	

Declarer again wins West's diamond lead with the ten and runs hearts. This time East follows 5-3-10 with his three (odd) hearts, promising an even single suit 5_3...10- spades.

Even spades

Black Prism

Even clubs

Index four
4-3-3-3 pattern
 3=3=3=4 distribution

Consider three variations of the six card position that the 'four triple three' notrump declarer may reach after discarding on the run of hearts. With the lead in dummy, declarer needs two tricks:

<u>North</u>		<u>North</u>		<u>North</u>	
S 64		S 64		S 64	
H ---		H ---		H ---	
D J7		D J7		D J7	
C A5		C A5		C A5	
<u>West</u>		<u>West</u>		<u>West</u>	
S AJ		S AJ		S AJ	
H ---	Var i	H ---	Var ii	H ---	Var iii
D AQ		D AQ		D AQ	
C K2		C K2		C K2	
	<u>East</u>		<u>East</u>		<u>East</u>
	S Q98		S Q98		S Q98
	H ---		H ---		H ---
	D ---		D ---		D ---
	C Q98		C Q98		C Q98
	<u>South</u>		<u>South</u>		<u>South</u>
	S K10		S K105		S K
	H ---		H ---		H ---
	D K4		D K4		D K4
	C J10		C J		C J107

If Declarer's spade king and diamond king remain guarded, West must also hold two cards in each of those suits. And, West must hold two clubs, a second to protect against a strip of the suit thus ensuring possession of an all important exit card. This defensive alignment works in variation iii as well.

In all three variations if declarer starts with the club ace from dummy, West plays the king. If declarer instead starts a low club from dummy, East must pounce with the queen and play spades.

In the first variation declarer with a known 3=3=3=4, reduces to two cards in each non-heart suit. Two tricks needed with the lead in dummy:

	<u>North</u>	
	S 64	
{7-6-4-9}	H ---	
	D J7	
	C A5	
<u>West</u>	Var i	<u>East</u>
S AJ		S Q98
H ---		H ---
D AQ		D ---
C K2		C Q98
	<u>South</u>	
	S K10	
	H ---	
	D K4	
	C J10	

Declarer's best start is a spade from dummy. But mere ham-fisted trick-grabbing by the defense limits this no threat offense to the club; ace. Spade to the king and ace spade jack overtaken by the queen; then, the spade nine (diamond queen discard); any club out -down one.

A more potent offense, in which the 3=3=3=4 declarer hangs on to three spades, is still no match for a distributionally informed defense. Two tricks needed with the lead in dummy:

	<u>North</u>	
	S 64	
{7-6-4-9}	H ---	
	D J7	
	C A5	
<u>West</u>	Var ii	<u>East</u>
S AJ		S Q98
H ---		H ---
D AQ		D ---
C K2		C Q98
	<u>South</u>	
	S K105	
	H ---	
	D K4	
	C J	

Declarer starts with a spade from dummy to the eight, ten and jack. If West cashes the spade ace immediately, a low club exit to dummy's ace allows declarer to end play West with a club off.

And continuing the club king rather than a low club allows declarer to use East's club queen as a stepping-stone to the spade king.

So before playing the spade ace, West plays the club king. If dummy wins, declarer gets no more tricks. If declarer refuses the club king, West cashes the spade ace; then puts the dummy which now lacks a club exit on play.

A third offensive scheme featuring clubs with declarer rather than spades proves no match for prism signaling distribution trackers. Two tricks needed with the lead in dummy:

	<u>North</u>	
	S 64	
{7-6-4-9}	H ---	
	D J7	
	C A5	
<u>West</u>	Var iii	<u>East</u>
S AJ		S Q98
H ---		H ---
D AQ		D ---
C K2		C Q98
	<u>South</u>	
	S K	
	H ---	
	D K4	
	C J107	

A spade from dummy, low, king, ace. Here, if West plays the club king, dummy wins and puts East on play with a club. And, the defense must surrender a trick. So, rather than play the club king, West can exit with the club deuce to defeat the contract.

Alternatively, after a spade to the king and ace, an immediate spade jack squeezes a club from declarer and the club king is once again effective. If East makes the ham-fisted trick-grabbing overtake of the spade jack with the queen to cash the long spade, declarer and West discard diamonds. And, East must be careful to exit with the club queen to defeat the contract.

When there are three single suit candidates, identification requires ordered play of three spot cards. With only two single suit candidates, a simpler identification technique is available.

IX. PARITY PAIRS

A **disclosed pair** in a defender's hand is formed by two suits of known parity. The relative parity of the two suits is either equal or opposite.

An **unlike disclosed pair** is formed by two suits of opposite relative parity.

An unlike disclosed pair includes the single suit since both odd and even are represented.

A **like disclosed pair** is formed by two suits of equal relative parity.

The single suit must be one of the other two suits since the parity of the single suit is unique.

The parity of the single suit is opposite the parity of the like pair.

The **HI/LO signal** identifies the high or low ranked member of a pair as the single suit. To employ the HI/LO signal, a defender plays a HI or LO spot from one of the suits of the *disclosed pair*.

Consider an example where East, the signaling defender, holds an unlike disclosed pair- clubs and hearts:

North
S A63
H QJ10
D J3
C A10874

East
S J75
H 9832
D 109764
C K

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1C
1H	2H	3H	4C
Pass	5C	(end)	

West leads a low heart, and declarer wins with his singleton ace. A club to the ace fells East's king. The first two tricks indicate that East started with even hearts and odd clubs.

Consider the opening example from West's viewpoint:

	<u>North</u>
	S A63
{7-5-7-7}	H QJ10
	D J3
	C A10874
<u>West</u>	
S Q102	
H K7654	
D AQ85	
C 9	

Declarer wins the opening heart lead with the stiff ace. East has four (even) hearts. Declarer guesses trumps, playing the ace, dropping the club king. East has one (odd) club and an unlike disclosed pair: even hearts and odd clubs -the single suit candidates.

Declarer plays a heart from dummy, discarding a diamond. East follows HI in the disclosed heart suit to indicate that the high ranked candidate (hearts) is the even single suit. West wins with the king.

Even hearts

Odd Prism

Odd hearts

Index...one
 6-4-2-**1** pattern
 4=1=2=6 or 2=1=4=6
 distribution

West to play, needing two tricks in this position:

	<u>North</u>	
	S A63	
{7-5-7-7}	H J	
	D J3	
	C 10874	
<u>West</u>		<u>East</u>
S Q102		S
H 765		H even
D AQ85		D hearts
C ---		C
	<u>South</u>	
	S	
	H odd	
	D hearts	
	C	

Declarer's distribution is 4=1=2=6, not 2=1=4=6. With two spades and four diamonds declarer would trump diamonds in dummy rather than play hearts.

Declarer started with two diamonds and the king is now alone. West cashes the diamond ace, snatching the king, exits safely, and awaits a spade trick.

The full deal:

	<u>North</u>	
	S A63	
{7-5-7-7}	H QJ10	
	D J3	
	C A10874	
<u>West</u>		<u>East</u>
S Q102		S J75
H K7654		H 9832 even
D AQ85		D 109764 hearts
C 9		C K
	<u>South</u>	
	S K984	
	H A odd	
	D K2 hearts	
	C QJ6532	

South and East trade pointed fours. Play proceeds similarly, declarer passing a heart to West at trick three. East has an unlike disclosed pair: even hearts and odd clubs. East plays LO on the heart to signal an odd club single suit.

Odd clubs

Odd Prism

Even clubs

Index...six

6-3-3-1 pattern

3=1=3=6 distribution

Declarer's diamond king is not alone. If West plays the ace, declarer scores the king and eleven tricks total. Rather, West exits with a heart and the defense is entitled to two more tricks.

The full deal:

	<u>North</u>	
	S A63	
{7-5-7-7}	H QJ10	
	D J3	
	C A10874	
<u>West</u>		<u>East</u>
S Q102		S J754
H K7654		H 9832 odd
D AQ85		D 10976 clubs
C 9		C K
	<u>South</u>	
	S K98	
	H A even	
	D K42 clubs	
	C QJ6532	

Next, a problem in which West, the signaling defender, holds a like disclosed pair (clubs and spades.)

<u>West</u>	<u>North</u>
S 4	S 953
H K5	H 642
D J10972	D K4
C KJ952	C A10763

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1H
Pass	2H	2S	3D
Pass	4H	(end)	

West leads a spade. East wins with the ace and returns the queen, covered by South and ruffed by West who started with one (odd) spade.

Dummy's king captures the diamond jack exit. Declarer discards a spade on the club ace. West started with five (odd) clubs. And West is about to follow to clubs.

The single suit candidates are hearts and diamonds. West plays a HI club- *My even single suit is hearts.*

The heart two is led from dummy and East must rise with the ace or play low in this position:

<u>North</u>	
S 9	
H 642	{4-8-9-5}
D 4	
C 10763	
	<u>East</u>
	S J762
	H A3
	D 3
	C Q8

East's need not consider the prism. The focus stays on West, who started with a two in hearts. One heart was used to trump a spade. If East wins with the heart ace and plays a spade, West will have no heart with which to trump.

Rather East plays low, setting the contract when West holds the king, and giving declarer a losing option when West has the queen.

The full deal:

	<u>North</u>	
	S 953	
	H 642	{4-8-9-5}
	D K4	
	C A10763	
	<u>West</u>	<u>East</u>
	S 4	S AQJ762
even	H K5	H A3
hearts	D J10972	D 83
	C KJ952	C Q84
	<u>South</u>	
	S K108	
odd	H QJ10987	
spades	D AQ62	
	C ---	

Consider a variation of the deal where play proceeds similarly. West holds,

S 4 H QJ5 D J1092 C KJ952

and leads the spade four, trumps a spade, and errs, exiting with the diamond jack rather than a trump.

Declarer wins in dummy with the king and discards a spade on the club ace. West plays LO. The heart two is led from dummy and East must rise with the ace or play low in this position:

<u>North</u>	
S 9	
H 642	{4-8-9-5}
D 4	
C 10763	
	<u>East</u>
	S J762
	H A3
	D 3
	C Q8

West holds a like disclosed pair, odd spades and odd clubs and an even single suit. The single suit candidates are hearts and diamonds. West's LO club indicates an even diamond single suit.

West started with a four in diamonds, 1=3=4=5 distribution, including three hearts. So East plays the heart ace and leads a spade for a trump promotion. A duck would allow declarer, holding the heart king-jack, to play the king and, next, crash defender's ace and queen.

Consider this no trump deal which features an unlike disclosed pair and a Pointed Prism:

<u>North</u>	
S 10754	
H J76	{5-8-5-8}
D Q64	
C 763	
	<u>East</u>
	S AJ86
	H 43
	D K10953
	C 109

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	2C
Pass	2D	Dbl	2N
Pass	3N	(end)	

West, at partner's behest (Dbl), leads a top of nothing diamond eight to declarer's jack. The spade king is next. East, not sure of the diamond position, ducks and awaits information. Declarer crosses to the heart jack and West signals an even heart holding. A spade off dummy is won by East's ace.

West shows out and so started with one (odd) spade. West has an unlike disclosed pair: odd spades and even hearts- the single suit candidates. West discards a LO heart from a member of an unlike disclosed pair, signaling an even heart single suit. East to lead in this position:

	<u>North</u>	
	S 107	
	H 76	{5-8-5-8}
	D Q6	
	C 763	
<u>West</u>		<u>East</u>
S		S J8
even H		H 3
hearts D		D K1053
C		C 109
	<u>South</u>	
	S	
odd H		
clubs D		
	C	

Even hearts

Pointed Prism

Odd clubs

index...three
 4-4-**3**-2 pattern
 4=4=2=3 distribution

Declarer's diamond ace is now alone. West exits with a diamond and the contract is defeated when the defense gets the spade ace, the club ace and three diamonds.

The full deal:

	<u>North</u>	
	S 10754	
	H J76	{5-8-5-8}
	D Q64	
	C 763	
	<u>West</u>	<u>East</u>
	S 3	S AJ86
even	H 10852	H 43
hearts	D 872	D K10953
	C AJ854	C 109
	<u>South</u>	
	S KQ92	
odd	H AKQ9	
clubs	D AJ	
	C KQ2	

When there is a disclosed pair and the parity of a third suit becomes known, the parity and identity of the single suit can be deduced. So a first discard in a third suit is a count signal, communicating the parity of the suit discarded.

Consider a variation of the above deal where play proceed similarly. West holds an unlike disclosed pair: odd spades and even hearts. West discards a HI heart, signaling that the high ranked spade candidate is the odd single suit.

The position:

	<u>North</u>	
	S 107	
	H 76	{5-8-5-8}
	D Q6	
	C 763	
	<u>West</u>	<u>East</u>
	S	S J8
odd H		H 3
spades D		D K1053
C		C 109
	<u>South</u>	
	S	
odd H		
diamonds D		
	C	

Odd spades

Pointed Prism

Odd diamonds

Index three
4-4-**3**-2 pattern
4=4=3=2 distribution

The diamond ace has a companion. A diamond return here leaves declarer with nine tricks: three diamonds, four hearts, and two spades. However, a club return beats the contract three tricks when this is the layout:

	<u>North</u>	
	S 10754	
	H J76	{5-8-5-8}
	D Q64	
	C 763	
<u>West</u>		<u>East</u>
S 3		S AJ86
odd H 10852		H 43
spades D 87		D K10953
C AQ8542		C 109
	<u>South</u>	
	S KQ92	
odd H AKQ9		
diamonds D AJ2		
	C KJ	

At the cost of an undertrick, West can discard the club five from a third suit rather than a HI heart to signal even clubs. With odd spades, even hearts, and even clubs, the odd spade suit must be the single suit. If West signals length with a loud shot, the club eight... calamity. Nine tricks for declarer.

Knowledge of the parity of two suits allows the use of the HI/LO signal to identify the single suit. But often the parity of one suit, not two, is known. What then? In the fullness of time there'll be two.

X. INDIVIDUALS

An **individual suit** in a defender's hand is the one and only suit whose parity is known.

When a defender holds an individual suit, upon declarer's first lead of a trump or proxy suit, the defense regards the trump or proxy length as known, and a disclosed pair is established.

The defender with the individual suit uses a **HI/LO signal** in the trump or proxy suit to identify the single suit.

Consider this example featuring an individual heart suit and a proxy diamond suit with East:

<u>North</u>	
S A52	
H K4	
D K1094	
C K1063	
	<u>East</u>
	S Q9876
	H 872
	D A63
	C Q9

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N*
Pass	3N	(end)	*(12-14)

West leads the heart queen, low from dummy, East follows signaling odd hearts. Declarer wins with the ace. East captures South's diamond queen and exits with a heart, won in dummy.

Declarer plays diamonds -king, small to the jack, and another- to force West to pitch before East can help with a discard. Usually good enough but too late to bar a prism signal.

East's individual suit is odd hearts. His diamond proxy suit is odd. Diamonds and hearts form a like disclosed pair. Spades and clubs are the even single suit candidates. On the diamond king East plays LO, nominating the low ranked club candidate his even single suit.

Consider West's problem- to unguard spades or clubs- on the lead of South's last diamond:

	<u>North</u>	
	S A52	
{8-5-7-6}	H ---	
	D 10	
	C K1063	
<u>West</u>		<u>East</u>
S K10		S Q9876
H J109		H 7
D ---		D ---
C J72		C Q9
	<u>South</u>	
	S J43	
	H ---	
	D 8	
	C A854	

Even clubs

Red Prism

Odd spades

Index...three
4-4-**3**-2 pattern
3=2=4=4 distribution

Declarer's threat is in clubs. West discards a spade, holds clubs, and defeats the contract.

The full deal:

	<u>North</u>	
	S A52	
{8-5-7-6}	H K4	
	D K1094	
	C K1063	
<u>West</u>		<u>East</u>
S K10		S Q9876
H QJ10963		H 872 even
D 72		D A63 clubs
C J72		C Q9
	<u>South</u>	
	S J43	
	H A5 odd	
	D QJ85spades	
	C A854	

Minor transplant surgery on the South and East hands leads to a variation in East's carding. Play shows that East holds odd hearts and an odd diamond proxy- a like disclosed pair. The even single suit candidates are spades and clubs.

In this variation East plays HI on the diamond king, nominating the high ranked spade candidate the even single suit. West to discard on a diamond from declarer:

	<u>North</u>	
	S A52	
{8-5-7-6}	H ---	
	D 10	
	C K1063	
<u>West</u>		<u>East</u>
S K10		S
H J109		H even
D ---		D spades
C J72		C
	<u>South</u>	
	S	
	H odd	
	D clubs	
	C	

Even spades

Red Prism

Odd clubs

Index...three
4-4-**3**-2 pattern
4=2=4=3 distribution

Declarer's threat is in spades. West discards a club, holds spades and defeats the contract.

The full deal:

	<u>North</u>	
	S A52	
{8-5-7-6}	H K4	
	D K1094	
	C K1063	
<u>West</u>		<u>East</u>
S K10		S J976
H QJ10963		H 872 even
D 72		D A63 spades
C J72		C Q98
	<u>South</u>	
	S Q843	
	H A5 odd	
	D QJ85 clubs	
	C A54	

Consider this example featuring West's individual heart suit and a proxy club suit with two cards available for signaling:

	<u>North</u>		
	S K54		
	H 752		
	D A84		
	C AJ63		
	<u>West</u>		
	S 763		
	H KJ108		
	D Q103		
	C Q82		
<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1N*
Pass	3N	(end)	
			*(12-14)

West leads the heart ten, East plays the ace, and the defense takes the first four tricks. On the fourth heart, dummy and East discard spades and declarer a diamond. A spade exit at trick five, won by South's ace, leaves the parity of the spade suit in doubt. Hearts is the one and only suit of known parity- the individual suit.

Declarer plays clubs- king, small to the jack, ace and another- and East is forced to pitch before West can make a helpful discard. Good technique but ineffective against a prism signal.

West's individual suit is even hearts. Clubs the odd proxy suit. Hearts and clubs form an unlike disclosed pair- the single suit candidates.

On the club king West plays HI- the high ranked heart candidate is my even single suit. East, who cannot guard both spades and diamonds, to discard on the lead of dummy's last club:

	<u>North</u>	
	S K	
	H ---	{6-7-6-7}
	D A84	
	C 6	
<u>West</u>		<u>East</u>
S 76		S Q8
H ---		H ---
D Q103		D J75
C ---		C ---
	<u>South</u>	
	S 102	
	H ---	
	D K9	
	C 9	

Even hearts

Round Prism

Even clubs

Index...four
4-3-3-3 pattern
 3=3=3=4 distribution

West can help with diamonds. East discards a diamond and saves spades.

The full deal:

	<u>North</u>	
	S K54	
	H 752	{6-7-6-7}
	D A84	
	C AJ63	
	<u>West</u>	<u>East</u>
	S 763	S QJ98
even	H KJ108	H A63
hearts	D Q103	D J752
	C Q82	C 104
	<u>South</u>	
	S A102	
even	H Q94	
clubs	D K96	
	C K975	

An exchange of spots between West and South leads to a variation in West's carding. Play shows that West holds even hearts and an odd club proxy- the single suit candidates.

West follows LO on the first round of clubs nominating the low ranked club suit as the odd single suit. East to discard on dummy's last club:

		<u>North</u>		
		S K		
		H ---	{6-7-6-7}	
		D A84		
		C 6		
	<u>West</u>		<u>East</u>	
	S		S Q8	
odd	H		H ---	
clubs	D		D J75	
	C		C ---	
		<u>South</u>		
		S		
odd		H		
hearts		D		
		C		

Odd clubs

Round Prism

Odd hearts

Index...three
 4-4-**3**-2 pattern
 4=3=2=4 or 2=3=4=4
 distribution

Declarer's diamond discard on the fourth heart contra indicates 4=3=2=4. Declarer started with 2=3=4=4 and threatens in diamonds. East blanks the spade queen.

The full deal:

	<u>North</u>	
	S K54	
	H 752	{6-7-6-7}
	D A84	
	C AJ63	
	<u>West</u>	<u>East</u>
	S 10763	S QJ98
odd	H KJ108	H A63
clubs	D Q3	D J752
	C Q82	C 104
	<u>South</u>	
	S A2	
odd	H Q94	
hearts	D K1096	
	C K975	

Prism signals...so many messages, so few cards. Fortunately, one suit often suffices.

XI. ONE SUIT CLAPPING

Signaling with cards from long suits is safe and efficient. Consider a deal in which one suit fits all:

<u>North</u>	
S Q1065	
H 5	
D A742	
C A432	
	<u>East</u>
	S AKJ98432
	H ---
	D Q
	C Q765

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	4S	5H
Pass	6H	(end)	

West leads a trump and East shows out at trick one (even hearts.) East's discard is a count signal- even spades. Therefore, East holds a like disclosed pair. Diamonds and clubs are the odd single suits candidates.

Declarer continues trump and East discards another spade- a HI/LO signal. East discards a HI spade. The high ranked diamond candidate is the odd single suit.

Consider the problem from West's viewpoint:

	<u>North</u>
	S Q1065
{9-7-5-5}	H 5
	D A742
	C A432

<u>West</u>
S ---
H 87432
D J1098
C J1098

West leads a trump and East shows out, declarer wins. Declarer, who started with seven hearts, draws trump in five rounds, discarding four spades from dummy. East discards spades. Declarer continues a sixth trump and West must find a discard:

	<u>North</u>		
	S ---		
{9-7-5-5}	H ---		
	D A742		
	C A432		
<u>West</u>		<u>East</u>	
S ---		S	
H ---		H	odd
D J1098		D	diamonds
C J1098		C	
	<u>South</u>		
	S		
	H	even	
	D	diamonds	
	C		

Odd diamonds

Odd Prism

Even diamonds

Index...two or four
 7-3-**2**-1 or 7-1-**4**-1 pattern
 1=7=2=3 or 1=7=4=1
 distribution

Assume from the auction that declarer holds both minor suit kings.
 What about a defense against 1=7=2=3?

	<u>North</u>	
	S ---	
{9-7-5-5}	H ---	
	D A742	
	C A432	
<u>West</u>		<u>East</u>
S ---		S AKJ
H ---		H ---
D J1098		D Q 65
C J1098		C Q7
	<u>South</u>	
	S 7	
	H 96	
	D K3	
	C K32	

Declarer can isolate the diamond menace, ruffing the third round in hand, then rectify the count, losing a spade to East. If East returns a spade for South to trump -fratricide.

If East returns a club, declarer wins in hand and administers the lethal heart -homicide. There is no defense against 1=7=2=3 with declarer.

West must assume declarer is 1=7=4=1, hold diamonds, discard clubs, and defeat the contract.

The full deal:

	<u>North</u>	
	S Q1065	
{9-7-5-5}	H 5	
	D A742	
	C A432	
<u>West</u>		<u>East</u>
S ---		S AKJ98432
H 87432		H --- odd
D J1098		D Q diamonds
C J1098		C Q765
	<u>South</u>	
	S 7	
	H AKQJ1096	
	D K653 even	
	C K diamonds	

Trade South's three minor suit spot cards for East's minor spots. East's play in this variation reveals: (1) even spades to go with the even heart void, establishing diamonds and clubs as the odd single suit candidates; (2) LO spade- odd club single suit.

	<u>North</u>	
	S ---	
{9-7-5-5}	H ---	
	D A742	
	C A432	
<u>West</u>		<u>East</u>
S ---		S
H ---		H odd
D J1098		D clubs
C J1098		C
	<u>South</u>	
	S	
	H even	
	D clubs	
	C	

Odd clubs

Odd Prism

Even clubs

Index two or four
7-3-**2**-1 or 7-**4**-1-1 pattern
1=7=3=2 or 1=7=1=4
distribution

Defensible distribution: 1=7=1=4. West dumps diamonds and keeps clubs.

The full deal:

	<u>North</u>	
	S Q1065	
{9-7-5-5}	H 5	
	D A742	
	C A432	
<u>West</u>		<u>East</u>
S ---		S AKJ98432
H 87432		H --- odd
D J1098		D Q653 clubs
C J1098		C Q
	<u>South</u>	
	S 7	
	H AKQJ1096	
	D K even	
	C K765 clubs	

Consider a deal which features three signals by West. The first is a hand pattern signal. The other two signals employ long suit spots.

North
 S AK7
 H J75 {7-6-7-6}
 DA1096
 C AK8

East
 S 862
 H Q862
 D 72
 C J954

<u>West</u>	<u>North</u>	<u>East</u>	<u>South</u>
---	---	---	1D
2S	3S	Pass	4H
Pass	4N	Pass	5S
Pass	5N	Pass	6D
Pass	7D	(end)	

West leads the spade queen to dummy's ace, all follow. Declarer plays four rounds of trump ending in dummy with the ace.

West plays low-high with his two (even) diamond trumps, signaling an odd single suit. On the third trump West's spade discard promises an even spade start.

This establishes the odd single suit candidates - hearts and clubs. Next a HI spade names hearts the odd single suit.

The spade king from dummy and a spade, trumped by declarer, put East under pressure:

	<u>North</u>	
	S K7	
	H J75	{7-6-7-6}
	D ---	
	C AK8	
<u>West</u>		<u>East</u>
S J109		S 2
H 943		H Q862
D ---		D ---
C Q7		C J95
	<u>South</u>	
	S ---	
	H AK10	
	D 5	
	C 10632	

Odd hearts

Pointed Prism

Even clubs

Index...four
5-4-3-1 pattern
1=3=5=4 distribution

East undistracted by the auction does not play declarer for heart length. Declarer's threat is in clubs, not hearts. East pitches hearts and holds clubs. Down one.

The full deal:

		<u>North</u>	
		S AK7	
		H J75	{7-6-7-6}
		DA1096	
		C AK8	
	<u>West</u>		<u>East</u>
	S QJ10954		S 862
odd	H 943		H Q862
hearts	D 83		D 72
	C Q7		C J954
		<u>South</u>	
		S 3	
even	H AK10		
clubs	D KQJ54		
		C 10632	

West and South swap round suit threes and the play in seven diamonds proceeds similarly. Hearts and clubs are the odd single suit candidates. On the fourth trump to dummy's ace a LO spade from West nominates clubs.

		<u>North</u>	
		S K7	
		H J75	{7-6-7-6}
		D ---	
		C AK8	
	<u>West</u>		<u>East</u>
	S		S 2
odd	H		H Q862
clubs	D		D ---
	C		C J95
		<u>South</u>	
		S	
even	H		
hearts	D		
		C	

Odd clubs

Pointed Prism

Even hearts

Index...four

5-4-3-1 pattern

1=4=5=3 distribution

Declarer's threat is in hearts. When declarer plays the spade king and trumps a spade, East saves hearts, discards clubs, and defeats the contract.

The full deal:

	<u>North</u>	
	S AK7	
	H J75	{7-6-7-6}
	D A1096	
	C AK8	
	<u>West</u>	<u>East</u>
	S QJ10954	S 862
odd	H 94	H Q862
clubs	D 83	D 72
	C Q73	C J954
	<u>South</u>	
	S 3	
even	H AK103	
hearts	D KQJ54	
	C 1062	

Notice that all of West's non-spade spots are busy. A club discard on a diamond to the ace allows declarer to squeeze East in hearts and clubs. A heart discard allows declarer to pick up the heart suit by leading hearts from dummy three times, starting with the jack. If East always covers, on the fourth round declarer's three captures East's two.

A defender can safely choose spot cards from a long suit to convey information about parity and identity of single suit enabling partner to identify declarer's hand pattern, pinpoint declarer's distribution and defend with accuracy. Prism signals.

Epilogue

While the committee deliberated behind closed doors, the professor tinkered with Prosecution Exhibit I. She juggled spots, sketched prisms and scribbled labels.

Exhibit I (variation):

	<u>North</u>	
	S 643	
{6-6-6-8}	H K52 {7-7-5-7}	
	D Q72	
	C AK74	
	<u>West</u>	<u>East</u>
	S KJ85	S Q92
odd	H 10876	H A43 even
clubs	D 96	D J1084 clubs
	C Q92	C 108
	<u>South</u>	
	S A107	
	H QJ9	
	D AK5	
even	C J653	clubs

The professor daydreamed *Spade five led against 3N, to the queen and ace. A heart to the king and partner's ace. I signal even hearts. My like disclosed pair -spades and hearts; my single suit -clubs. Partner's spade nine holds. My LO jack wins the spade continuation. Partner gets it: Me...odd clubs. Odd Prism. Declarer...even clubs..3=3=3=4. On the spade king East's discards the diamond four - even single suit. I exit a diamond and partner gives count -odd*

diamonds...and spades. On the next diamond East plays LO. I get it:

**Even clubs
Even Prism
Even clubs**

A tidy prism syllogism. On declarer's last diamond I discard a heart and save clubs.

The professor's harbored nightmare doubts about prism first discards. That inefficient diamond four. Maybe first discards should give count not parity. Let's see, if I switch round threes ...

"All rise!"

The chairman herded the committee in and summarily announced the verdict. "We find Ms Peep guilty as charged. Have you anything to say before I pronounce sentence ...Dearie?" He took a long, smug drag and exhaled. Second-hand smoke shrouded the professor.

A puzzling murmur drifted from the cloud. "*Declarer shows out. Every spot, say first, middle and lo, known. Lo says 'This is my single suit.'* Otherwise echo. And..."

"Middle first. Done. Lo and behold the echo. First will be last."

Slam! The chairman's gavel crashed, punctuating a cruel and unusual sentence: fifteen years to life at hard labor, developing and implementing espoused defensive principles...prism time.

Poof!

JES

Prism Signals in Brief
(see www.prismsignals.com)

A hand pattern is an arrangement of thirteen cards in four suits that forms one hand of a bridge deal.

The single suit is the one suit of a distribution with different parity.

The parity of a number is odd or even.

HAND PATTERNS with EVEN INDEXES

zero	two	four	six
5-5-3-0	5-3-3-2	5-4-3-1	6-3-3-1
7-3-3-0	5-5-2-1	4-3-3-3	6-5-1-1
	7-3-2-1	7-4-1-1	

HAND PATTERNS with ODD INDEXES

one	three	five	seven
6-4-2-1	4-4-3-2	5-4-2-2	7-2-2-2
4-4-4-1	6-3-2-2	5-4-4-0	7-4-2-0
8-2-2-1	6-4-3-0	6-5-2-0	

Vinje signals - a low trump spot followed by a high one to send the message I have an odd single suit; and a high trump spot followed by a low one to send the message I have an even single suit.

A prism - four numbers that represent the total spades-hearts-diamonds-clubs in the two closed hands.

An Even Prism - is all even.

Even Prisms relationships:

- ~ The two concealed single suits are the same suit.
- ~ The relative parity of the two single suits is equal.

The relative parity of two numbers is either equal- both odd or both even; or opposite- one odd and one even.

An Odd Prism is all odd.

Odd Prisms relationships:

- ~ The two concealed single suits are the same suit.
- ~ The relative parity of the single suits is opposite.

An example of an odd prism syllogism-

West...Even diamonds
Odd Prism
Declarer...Odd diamonds

Two Couple Prisms - two odd numbers and two even numbers.

Each prism takes its name from the odd couple:

Red Black Major Minor Pointed Round

Two Couple Prism Relationships

- ~ The concealed single suits correspond to a prism couple.
- ~ Correspondence to the odd couple means equal relative parity.
- ~ Correspondence to the even couple means opposite relative parity.

An example of a Red Prism syllogism-

West...Even diamonds
Red Prism
Declarer...even hearts

A Prism Signal with three little trumps (and an even single suit):

- 1.) The spade trump suit (odd) cannot be the single suit (even.)
- 2.) Hearts, diamonds, clubs are the single suit candidates.
- 3.) The relationship of the third trump to the Vinje echo identifies the single suit:

- _ Above ...the high heart candidate.
- _ Amid ...the middle diamond candidate.
- _ Below ...the low club candidate.

Note: If the three little trumps are started low-high then the single suit is odd -the trump suit itself.

The first three trump spots played from a longer trump holding constitute a prism signal. Partner considers the Vinje signal the relationship of the third spot and the total number of signaler's trumps to learn the identity of declarer's single suit.

At no trump, the defenders may agree to designate declarer's trick source as a proxy trump suit. In a trump contract a side suit run early on for discards is a perfect proxy suit.

A disclosed pair in a defender's hand is formed by two suits of known parity. The relative parity of the two suits is either equal or opposite.

An unlike disclosed pair is formed by two suits of opposite relative parity.

An unlike disclosed pair includes the single suit since both odd and even are represented.

A like disclosed pair is formed by two suits of equal relative parity.

The single suit must be one of the other two suits since the parity of the single suit is unique.

The parity of the single suit is opposite the parity of the like pair.

The HI/LO signal identifies the high or low ranked member of a pair as the single suit. A defender plays a HI or LO spot from one of the suits of the disclosed pair.

An individual suit in a defender's hand is the one and only suit whose parity is known.

When a defender holds an individual suit, upon declarer's first lead of a trump or proxy suit, the defense regards the trump or proxy length as known, and a disclosed pair established.

The defender with the individual suit uses a HI/LO signal in the trump or proxy suit to identify the single suit.